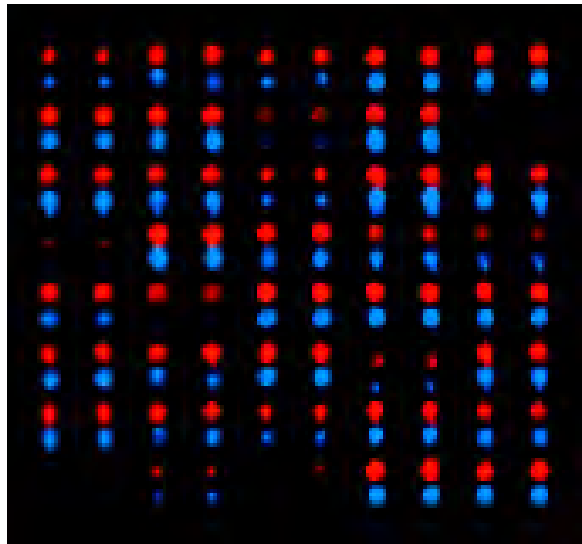


KINEX™ SERVICES

ANTIBODY MICROARRAY ANALYSIS CUSTOMER INFORMATION PACKAGE

OUR KINEX™ ANTIBODY MICROARRAY SERVICES PERMIT CLIENTS TO HAVE TWO CELL OR TISSUE LYSATES SCREENED WITH UP TO 500 PAN-SPECIFIC AND/OR 300 PHOSPHO-SITE-SPECIFIC ANTIBODIES. THIS POWERFUL PROTEOMICS SERVICE PROVIDES A VERY COST EFFECTIVE STRATEGY TO DISCOVER CHANGES IN PROTEIN EXPRESSION, PHOSPHORYLATION AND PROTEIN-PROTEIN INTERACTIONS. ANY LEADS CAN BE VALIDATED WITH OUR KINETWORKS™ CUSTOM IMMUNOBLOTTING SERVICES AND CORRELATED WITH KINET ON-LINE DATABANK.



One of 16 grids of Kinex™ antibody microarray.

This information Package has been designed to assist you in using our Kinex™ antibody microarray services. We will endeavor to provide you with your results within four weeks of ordering. If after reviewing this information you have any questions about our services, please contact our Technical Service Representatives by calling toll free in North America 1-866-KINEXUS or (604) 323-2547 or by e-mail at "info@kinexus.ca". This information is regularly updated and available from our website at "www.kinexus.ca".



KINEXUS

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KINEX™ ANTIBODY MICROARRAY SERVICES

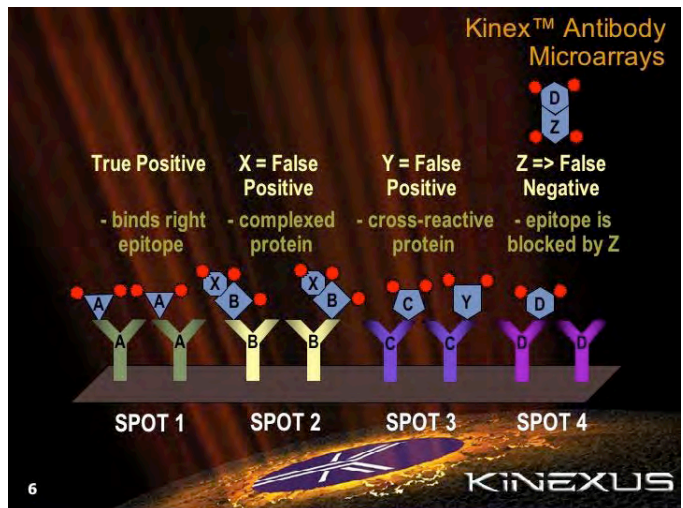
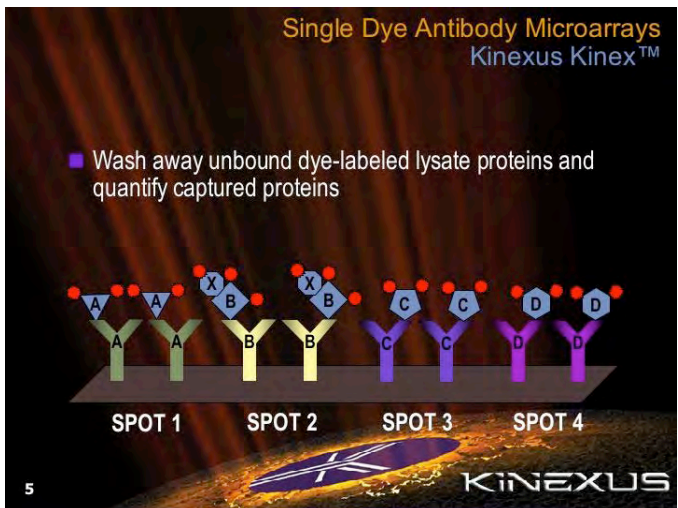
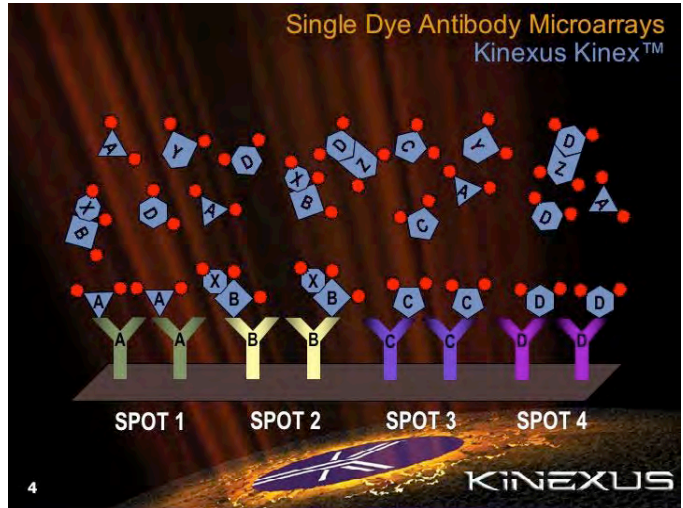
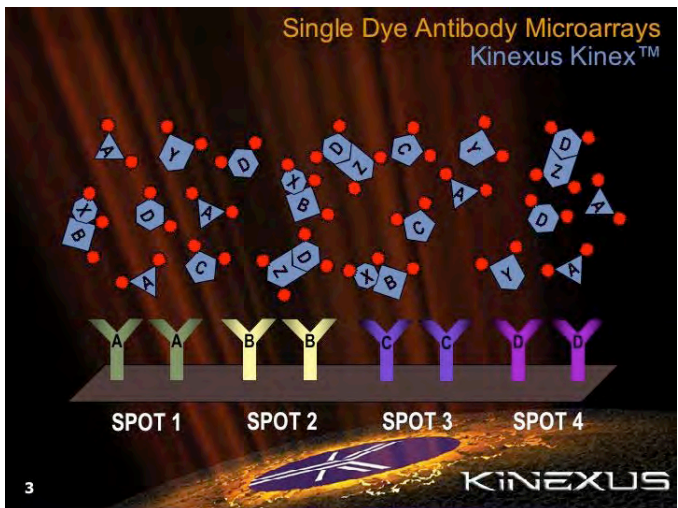
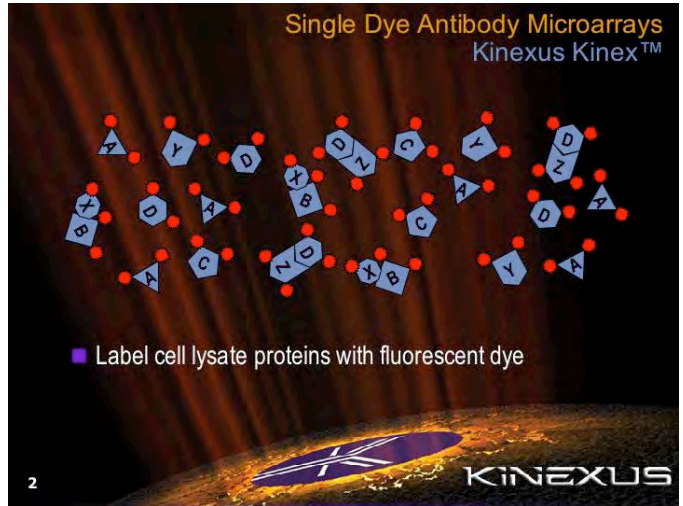
1. INTRODUCTION

The Kinex™ signal transduction protein profiling services are a convenient and very cost-effective solution to assist scientists in the broad discovery of productive research leads such as biomarkers. These services utilize our unique antibody microarrays to track the differential binding of dye-labeled proteins in lysates prepared from cells and tissues. The results can provide productive insights into differences in protein expression, phosphorylation and protein-protein interactions, and define antibody reagents that can be used to follow up these findings. **However, as non-denatured proteins are analyzed by this method, there is increased opportunity for false positives and false negatives due to antibody cross-reactivity and blocked epitopes in protein complexes. Therefore, this technique is much less accurate than our Kinetworks™ multi-immunoblotting service, and we highly recommend that any interesting Kinex™ results that clients wish to follow up should be first validated by Western blotting.** The Custom Kinetworks™ KCPS 1.0 service permits up to 18 antibodies from our Kinex™ antibody microarrays to be used at a time for validation studies by Western blotting for as low as \$649 US per cell/tissue sample. The Custom Kinetworks™ KCSS 1.0 service allows clients to choose *any* 3 target proteins (of different molecular masses) to be quantified in 8 different samples side-by-side on the same immunoblot. The availability of Kinetworks™ analyses is an important distinguishing feature of our antibody microarray services as clients can have their research leads conveniently and cost effectively confirmed. Further information about the expression or phosphorylation of leads can be obtained through query of our KiNET™ databank with results from over 6000 Kinetworks™ immunoblots.

In our internal studies with cells from different species, between 30 to 45% of the protein changes detected on the Kinex™ KAM-1.1 Antibody Microarray were reproduced by immunoblotting. About 15 to 20% of the Kinex™ detected protein changes could not be validated by immunoblotting, because no detectable immunoreactive proteins were evident in these studies as the antibody microarray appears to be about 10-fold or more sensitive than standard Western blotting. The Kinex™ KAM-1.1 chip has typically 23 times the antibody coverage, it uses 5-10-times less cell/tissue lysate protein, and it yields duplicate measurements at 10-30-times less cost than a Kinetworks™ immunoblot analysis. Therefore, the antibody microarray is a particularly attractive initial route for taking a system biology, proteomics approach to studying human disease or an experimental model system.

Kinexus has independently tested over 3000 different antibodies to identify the best immunological reagents to track popular cell signalling proteins. The top 20% of these antibodies, which have been proven in-house by Kinexus to perform well in Western blotting applications, were incorporated into our latest generation Kinex™ KAM-1.2 microarray. Our current Full Kinex™ Service using the KAM-1.2 chip with two samples analyzed at a time utilizes 500 pan-specific antibodies (for protein expression) and 300 phospho-site-specific antibodies (for phosphorylation) in duplicate for at least 248 different phospho-sites, 193 protein kinases, 24 protein phosphatases and 150 regulatory subunits of these enzymes and other cell signalling proteins that regulate cell proliferation, stress and apoptosis; the complete list of unique target proteins and phospho-sites tracked in the Kinex™ KAM-1.2 Antibody Microarray is provided in Appendix A. Appendix B provides a listing of all of the antibodies used on the KAM-1.2 chip. With a 33% discounted price compared to the full analysis with 800 antibodies, it is also possible for clients to choose to have their cell and tissue samples analyzed with the KAM-1.2 Antibody Microarray and get back results for only the 500 pan-specific antibodies or the 300 phospho-site-specific antibodies. Further discounts are available if clients select our non-confidential pricing options.

The methodology behind the Kinex™ antibody microarray is illustrated in the following series figure panels. The issues of antibody cross-reactivity, protein complexes and epitope masking are highlighted in the last panel.



Principals of binding and detection of dye-labeled proteins to antibody microarrays

With respect to the performance of the Kinex™ antibody microarrays, we have analyzed over 1000 Kinex™ KAM-1.0, 1.1 and 1.2 chips to date. The antibodies used in the Kinex™ microarrays have been optimized to work in human, mouse and rat model systems, but have also been shown commonly to work in chicken, bovine, porcine, canine, rabbit, frog, sea star and other diverse model systems. In internal studies, we found that the median spread between duplicate measurements with the same antibody in printed pairs was about 14% (i.e. the median range from the average of the duplicates is $\pm 7\%$). The frequency of inconsistent duplicate measurements for the same protein was less than 4.5%. The dynamic range between the highest and lowest reproducible dye-bound protein signals from these Kinex™ chips was over 130-fold. This performance exceeded that of antibody microarrays from our competitors tested in our hands. Moreover, we have determined that the costs of using our Kinex™ service is 20% to 55% less than the cost of purchasing competitor antibody microarrays and a researcher performing this kind of analysis in their own lab (note that the added costs of the chip scanners and quantification software license are not included in these comparisons).

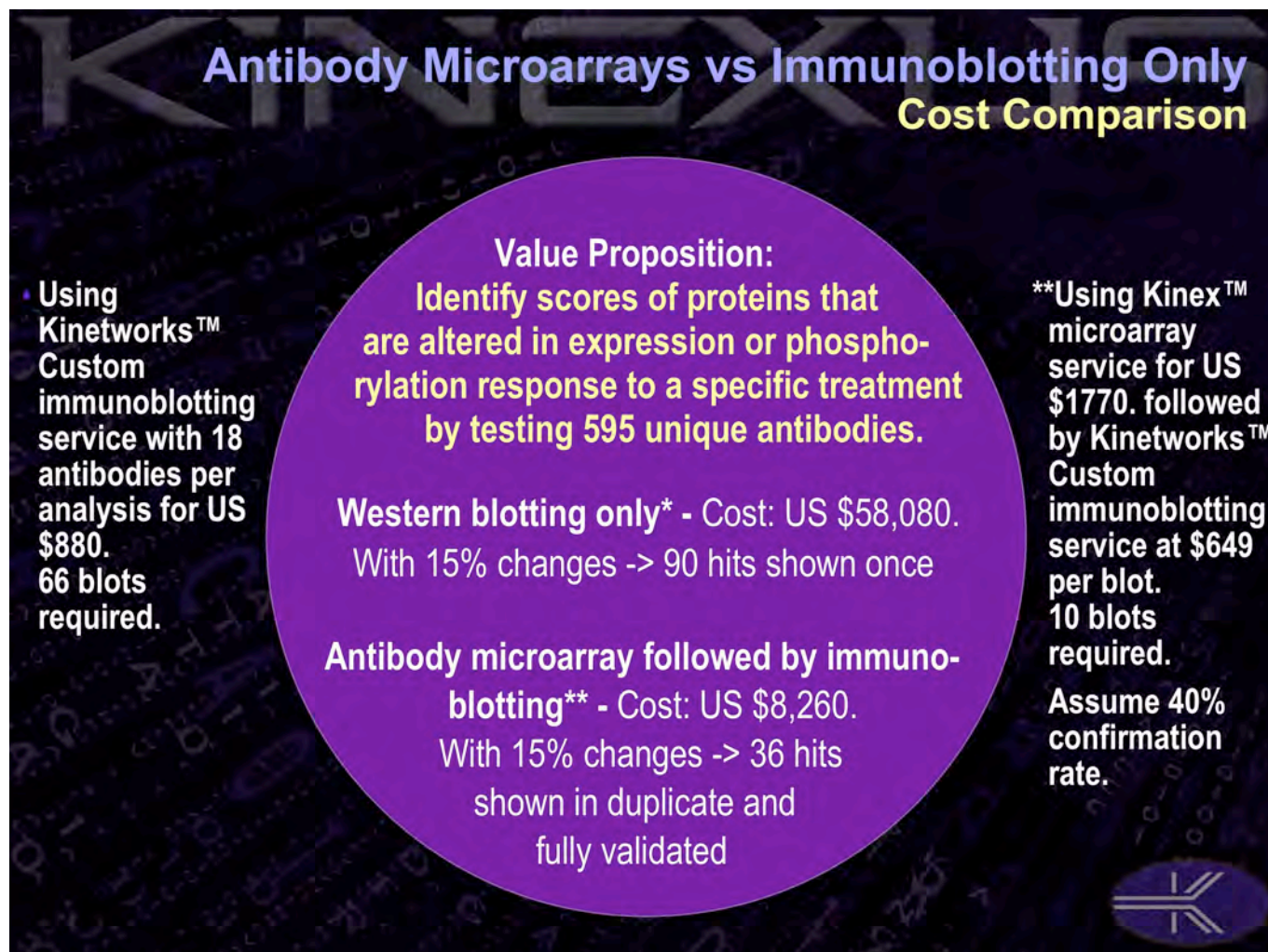
One of the key differences between the Kinex™ antibody microarray chips and competitor microarrays is that we label the control and treatment cell/tissue lysate samples with the same dye, and we analyze both samples separately, but on the same chip. In our experience, the use of two dye, competitive binding systems in which a control sample is labeled with a different dye from the treatment sample and the two samples are mixed and co-incubated with the same regions of the same chips generates a high rate of false leads. Unlike oligonucleotides such as DNA, proteins display strong individual differences in their relative affinities for dyes. It should be appreciated that this problem also significantly impacts other proteomics approaches such as DIGE 2D gel analysis where two samples that are labeled with different dyes are mixed prior to electrophoresis. Therefore, colour changes seen with spots evident on a DIGE 2D gel may not be related to differences in protein expression at all but rather dye binding to individual protein species. Clients should also be aware that cell signalling proteins are typically present at concentrations that are 100- to 1000-fold lower than structural proteins and metabolic pathway enzymes. Consequently, these low abundance proteins are usually not evident on 2D gels without some special pre-enrichment. This is why we feel that antibody-based detection of proteins with our Kinex™ antibody microarrays or Kinetworks™ multi-immunoblots are complementary and superior methods to undertake broad studies of proteins for signalling network analyses.

As part of the full Kinex™ KAM-1.2FN, KAM-1.2FC and KAM-1.2FP antibody microarray services with 800 antibodies, Kinexus provides both qualitative and semi-quantitative analyses of the expression and phosphorylation states of cell signalling proteins in cell and tissue samples as determined with the KAM-1.2 chip. The qualitative analysis includes TIFF and JPEG files of the scanned Kinex™ antibody microarray that features the detected target signalling proteins in control and experimental samples artificially labeled in two distinct colours by Adobe Photoshop and presented side-by-side in a coloured overlay (see the cover of this document for an example of 1 grid of the 16 grid Kinex™ KAM-1.2 chip). The quantitative analysis of the strength of the fluorescence signals for each target protein is provided in duplicate in a Microsoft Excel spreadsheet and includes the (average) percent change from the control sample, the percent range in error, and fold-changes ratios. To view example images or a sample of a Kinex™ Report, please contact a Customer Service Representative at info@kinexus.ca.

The partial and discounted Kinex™ KAM-1.2EN, KAM-1.2PN, KAM-1.2EC, KAM-1.2PC, KAM-1.2EP and KAM-1.2PP antibody microarrays services provide results with either 500 pan-specific antibodies or 300 phospho-site-specific antibodies. With these antibody microarray services Kinexus provides a complete quantitative analysis of the strength of the fluorescence signals for each target protein or phosphoprotein in duplicate on the microarrays in a Microsoft Excel spreadsheet, which includes the (average) percent change from the control sample, the percent

range in error, and fold-changes ratios. However, overlaid and colorized JPEG and TIFF images of the scanned microarrays are not provided.

The combination of Kinex™ antibody microarray analysis followed by validation studies by Kinetworks™ multi-immunoblotting is a very economical and efficient strategy for biomarker discovery. The following figure provides a cost analysis of the use of the Kinex™ KAM 1.2 Antibody Microarray to screen extracts from a healthy control and a diseased tissue for differences in signal transduction protein expression and phosphorylation compared to using our Kinetworks™ immunoblotting services. The price was estimated to be just over US \$58,000 with non-confidential pricing using our immunoblotting service only. This is actually quite cost-effective, because if a researcher had to purchase the antibodies to perform such a study in their own laboratory, it would cost upwards of US \$150,000 if he or she knew even which antibodies to procure. We might expect that around 90 leads might be generated if 15% of the tested proteins underwent disease-related changes. This rate is not uncommon in our experience. However, if the Kinex™ antibody microarray analysis was deployed first and the top 90 changes were then confirmed by follow-up Kinetworks™ custom immunoblotting, the total cost for the combined services would be US \$8,260. There would be false negatives by this approach. However, this would yield about 36 highly validated leads as well as knowledge about the nature of the antibodies that could successfully detect these proteins with both antibody microarray and immunoblotting methods in follow-up studies. We are excited by the prospect that the highly integrated platform of novel proteomics services offered by Kinexus will permit our clients to significantly improve their efficiency of biomarker detection to accelerate the promise of personalized medicine.



A large body of information and instruction is provided with this Kinex™ Services Customer Information Package. Your careful review of this package will ensure that we can offer the highest level of quality in providing our unique proteomics services to you. We have requested a lot of information from you regarding the preparation of your cell/tissue lysate samples so that we can share this in the future in our KiNET databank. For these rights, we have discounted our standard charges by 50% with our Non-Confidential Pricing option. You should find that the proper entry of information into the various forms provided by Kinexus will also be useful for your own reference at a later date when you receive your Kinex™ results. Should you have any questions or concerns, we would be pleased to hear from you. Thank you in advance for letting Kinexus become one of your research partners.

2. QUANTITY OF LYSATE REQUIRED

The amount of protein required for the Kinex™ Antibody Microarray service is 100 µg per sample at a minimum concentration of 2 mg/ml (please adjust concentration accordingly with lysis buffer). The samples must be frozen and shipped to Kinexus on dry ice fresh after protein quantification **WITHOUT ANY SDS-PAGE SAMPLE BUFFER** as the proteins are to remain in their native structure and nondenatured. The cell pellet or tissue should be homogenized in the following ice-cold lysis buffer and the final pH of the lysis buffer should be adjusted to 7.2.

1. 20 mM MOPS, pH 7.0 (any other buffer **without Tris** at this pH could be substituted);
2. 2 mM EGTA (to bind calcium);
3. 5 mM EDTA (to bind magnesium and manganese);
4. 30 mM sodium fluoride (to inhibit protein-serine phosphatases);
5. 60 mM β-glycerophosphate, pH 7.2 (to inhibit protein-serine phosphatases);
6. 20 mM sodium pyrophosphate (to inhibit protein-serine phosphatases);
7. 1 mM sodium orthovanadate (to inhibit protein-tyrosine phosphatases);
8. 1 mM phenylmethylsulfonylfluoride (to inhibit proteases);
9. 3 mM benzamidine (to inhibit proteases);
10. 5 µM pepstatin A (to inhibit proteases);
11. 10 µM leupeptin (to inhibit proteases);
12. 1% Triton X-100 (can be substituted with 1% Nonidet P-40)

Important Note: *Do not add if you intend to first prepare a cytosolic fraction;*

13. 1 mM dithiothreitol (to disrupt disulfate bonds).

Important Note: *dithiothreitol must be added to lysis buffer immediately before use.*

NOTE: Other lysis buffers commonly used for protein lysate preparation with non-ionic detergents should still be compatible with the service, but any buffers containing Tris or reagents carrying reactive amine groups will **NOT be acceptable alternatives**. Please contact a Kinexus Technical Sales Representative for more information on the appropriate types of lysis buffers to use for the Kinex™ Antibody Microarray Services or to request to have an aliquot of our lysis buffer for free if you can provide a courier account number to charge for the shipping costs. Our lysis buffer contains components 1-7, including phosphatase inhibitors (components 4-7) but *no protease inhibitors and dithiothreitol* (components 9-13). Clients must add their own dithiothreitol and protease inhibitors to the lysis buffer immediately before use. For convenience, they may choose to use the Roche Complete, Mini inhibitor cocktail tablet with the addition of pepstatin A as opposed to individual protease inhibitors.

Total cellular fractionation: For quantitation of total cellular levels of cell signalling proteins, lysis and homogenization should be performed in the presence of a non-ionic detergent. We recommend the use of 1% Triton X-100 or 1% Nonidet P40, but comparable detergents are acceptable.

Subcellular fractionation: Detergents should be omitted from the homogenization buffer if the subcellular distribution of cell signalling proteins is to be examined. If a particulate-solubilized fraction is to be analyzed, a microsomal pellet should be obtained following the initial homogenization and ultracentrifugation in the absence of detergent and subsequent removal of the cytosolic supernatant. In this instance, the cytosolic extract should be removed and the microsomal pellet should then be resuspended in the homogenization buffer containing 1% Triton X-100 or 1% Nonidet P-40 and subjected to homogenization and ultracentrifugation once again. The resulting detergent-solubilized microsomal fraction should be removed and immediately assayed for its protein concentration.

Other fractionation: We do not recommend that you send samples from immunoprecipitation or antibody affinity pull-down experiments for the Kinex™ Antibody Microarray Services.

Important things to remember are that the cells or tissues should be processed quickly at 4°C or less. Homogenization should not be performed in too large a volume to obtain lysates at the concentration required. The detergent-soluble fraction should be obtained as quickly as possible after the cells or tissues are homogenized. Sonication is required and cannot be omitted. The highest centrifugal forces available should be used to generate the detergent-soluble fraction. The supernatants should be frozen as quickly as possible if a protein assay cannot be performed immediately.

3. CELL LYSATE PREPARATION

A. Adherent Cell Lysates

1. Remove medium from culture dishes containing about 1×10^6 to 2×10^6 cells;
2. Rinse the cells twice with ice-cold PBS to remove medium residue (serum must be completely removed from cells); remove as much PBS as possible after the last rinse;
3. Add 200 μ l ice-cold lysis buffer to 150 mm culture dish per sample (more lysis buffer can be added if cells are concentrated); (add 100 μ l ice-cold lysis buffer to 100 mm culture dish)
4. Scrape the cells in lysis buffer, collect the cell suspension from the dishes and transfer it into a 1.5-ml microcentrifuge tube;
5. Sonicate four times for 10 seconds each time with 10-15 second intervals on ice to rupture the cells and to shear nuclear DNA; **this step is crucial and cannot be omitted**;
6. Centrifuge the homogenate at 90,000 x g or higher for 30 min at 4°C in a Beckman Table Top TL-100 ultracentrifuge, Beckman Airfuge or equivalent;
7. Transfer the resulting supernatant fraction to a 1.5-ml microcentrifuge tube;
8. Assay sample for protein concentration using a commercial Bradford assay reagent (available from Bio-Rad, catalogue number 500-0201) or using the standard protocol of Bradford (*Bradford, M.M. (1976) A rapid and sensitive method for quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. Anal. Biochem. 72:248-254*). Bovine serum albumin should be used as the protein standard.

B. Suspended Cell Lysates

1. Place medium containing cells in appropriate sized tube and centrifuge at 500 x g for 2 minutes at 4°C in a swinging bucket benchtop centrifuge. Remove as much medium from the cell pellet as possible without disrupting cells;

2. Wash the pellet by gently resuspending the cells in ice-cold PBS, followed by centrifugation as above. Repeat once to ensure complete removal of serum;
3. Remove as much PBS as possible after the last wash;
4. Add an adequate amount of ice-cold lysis buffer to the sample (more lysis buffer can be added if the number of cells is high);
5. Sonicate four times for 10 seconds each time with 10-15 second intervals on ice to rupture the cells and to shear nuclear DNA; **this step is crucial and cannot be omitted**;
6. Centrifuge the homogenate at 90,000 x g or higher for 30 min at 4°C in a Beckman Table Top TL-100 ultracentrifuge, Beckman Airfuge or equivalent;
7. Transfer the resulting supernatant fraction to a 1.5-ml microcentrifuge tube;
8. Assay sample for protein concentration using a commercial Bradford assay (available from Bio-Rad, catalogue number 500-0201) or using the standard protocol of Bradford (*Bradford, M.M. (1976) A rapid and sensitive method for quantification of microgram quantities of protein utilizing the principle of protein-dye binding Anal. Biochem. 72:248-254*). Bovine serum albumin should be used as the protein standard.

4. PREPARATION OF CELL PELLETS

An additional charge of \$200 per sample will apply for submission of cell pellets to be processed at Kinexus. Please submit a sufficient number of cells ($>2 \times 10^6$ cells) for processing.

A. Adherent Cells

1. Remove the medium and rinse the cells in dish with ice-cold PBS once;
2. Detach cells with trypsin as one does in passaging cells, followed by the addition of equal volume of medium;
3. Collect cells in a 15-ml conical tube and centrifuge at 500 x g for 2 minutes at 4°C in a swinging bucket benchtop centrifuge;
4. Wash the pellet twice with ice-cold PBS thoroughly, (the presence of serum from medium could skew the protein assay) and remove as much PBS as possible (the presence of liquid residue dilutes the sample and may also result in the damage of cells during freezing process);
5. Freeze the pellet for shipping. Pellet must be shipped on dry ice.

B. Suspended Cells

Simply follow steps 3-5 in Section 4A for “*for adherent cells*” and freeze the cell pellet immediately. Pellet must be shipped on dry ice.

5. TISSUE PREPARATION

1. Use 1 ml of lysis buffer per 250 mg wet weight of the chopped tissue;
2. Rinse the tissue pieces in ice-cold PBS three times to remove blood contaminants;
3. Homogenize the tissue on ice with 15 strokes of a glass dounce (or 3 times for 15 seconds each time with a Brinkman Polytron Homogenizer or with a French Press as alternatives);
4. Sonicate the homogenate 4 times for 10 seconds on ice each time to shear nuclear DNA;
5. Centrifuge the homogenate at 90,000 x g or higher for 30 min at 4°C in a Beckman Table Top TL-100 ultracentrifuge, Beckman Airfuge or equivalent;

6. Transfer the resulting supernatant fraction to a new tube and subject it to protein assay. Using a commercial Bradford assay (available from Bio-Rad, catalogue number 500-0201) or using the standard protocol of Bradford (*Bradford, M.M. (1976) A rapid and sensitive method for quantitation of microgram quantities of protein utilizing the principle of protein-dye binding Anal. Biochem. 72:248-254*). Bovine serum albumin should be used as the protein standard.

6. PREPARATION FOR STORAGE AND SHIPPING OF SAMPLES

The final protein concentration of the cell/tissue samples should be **a minimum of 2 mg/ml**. If you are unable to achieve that concentration, please contact a customer service representative for assistance and suggestions. Please record the actual concentration and volume of each sample on the Sample Description Form (KX-NSDF-02 or KX-CSDF-02). Kinexus requests **100 µg** of cell or tissue lysate for each sample submitted for analysis with the Kinex™ Antibody Microarray. Samples should be stored in *screw cap* vials. The vials should be clearly labeled with an indelible marker with a unique identification number (recorded in the Sample Description Form), parafilm, and then put into another support structure such as a 50-ml conical or centrifuge tube to provide extra protection during shipping. **All samples must be shipped on dry ice.** Approximately 5% of the time, it has been necessary for clients to re-send samples to Kinexus due to thawed samples at the time of arrival. This is most often due to insufficient dry ice for shipping and/or inadequate completion of shipping information.

7. SHIPPING INFORMATION

The aforementioned procedure has been designed to reduce the use of shipping materials and courier costs, and to ensure that your precious samples arrive in a safe and stable form at our laboratory facilities. Note that clients are responsible for payment of courier costs. The sample vials should be sent to the address listed below by any express courier that accepts dry ice shipments. We recommend Federal Express for shipments originating in North America, and World Express is the preferred courier choice outside of North America. Ship the samples to the following address:

Kinex™ Screening Services
Kinexus Bioinformatics Corporation
Suite 1, 8755 Ash Street
Vancouver, B.C. Canada V6P 6T3
Telephone: (604) 323-2547
Facsimile: (604) 323-2548
E-mail info@kinexus.ca

Please ensure 3 copies of a signed commercial invoice accompany your shipment which specifies your samples are non hazardous and non infectious. Since the samples are not for resale, the value of your shipment should be priced at approximately \$1.00 per sample in order to avoid paying additional duties and taxes on entry into Canada. **It is highly recommended that customers e-mail their courier airway bill number and the date of departure to info@kinexus.ca so we can track your shipment in transit and ensure it arrives in a timely manner.** We will send a confirmation e-mail once your shipment arrives at our facility.

8. PRICING INFORMATION

Kinexus offers the Kinex™ services at different pricing levels depending on the level of confidentiality required for your samples and the whether a partial or complete analyses is requested. With the full analysis with 800 pan- and phospho-site-specific antibodies and full confidentiality, our regular price for the Kinex™ Antibody Microarray Services start at US \$2,998 per slide for each pair of samples submitted. At this pricing level, only the species needs to be disclosed. It is also possible to obtain a 33% discount at \$1998 per slide with full confidentiality if the data is desired for only 500 pan-specific antibodies or 300 phospho-site-specific antibodies. To receive a further 41% discount off these prices, Kinexus requires the Client Supplied Non-Confidential Sample Description Form (KX-NSDF-02) to be completed in full (Sections A-K) including species, organ, tissue, cell, cell state, fractionation, perturbation, and treatment for each sample being analyzed.

For volume discounts or quotations for large orders, please contact the Director of Sales & Marketing at 1-866-KINEXUS (or 1-604-323-2547 (Extension 11 or Option 2 on the telephone directory) or e-mail sales@kinexus.ca.

9. FOLLOW UP SERVICES

Kinexus offers two types of Western blotting follow-up services to cost-effectively validate the results from your Kinex™ antibody microarray. Clients can choose from the Kinetworks™ Custom KCPS 1.0 (Multi-Antibody) Protein Screen where any 18 antibodies can be selected and we will optimize it to your model system, or with the Kinetworks™ Custom KCSS 1.0 (Multi-Sample) Protein Screen send up to 8 different samples and choose up to 3 different antibodies (provided the molecular weights are significantly separated by SDS-PAGE). Once the results are confirmed by Western blotting, clients can correlate their data with hundreds of other data points from hundreds of different model systems using our KiNET database. For more information about these services, please contact one of our customer service representatives at info@kinexus.ca.

10. FORMS TO BE COMPLETED

All customers are required to complete the following forms for each order placed:

- A. Kinexus Service Agreement - Customers are required to complete and sign our standard Kinex Service Agreement before their first order can be processed. Unless otherwise specified, this Agreement is valid for all future orders with a standard term of 15 years.
- B. Service Order Form (KX-SOF-02). The Service Order Form (SOF) allows us to track all of the various services to be used within an order.
- C. Service Identification Form (KX-SIF-02). The Service Identification Form (SIF) permits us to determine which proteomics service screen is to be used for the analysis of two cell/tissue lysate samples together.
- D. Sample Description Forms – Customers should choose one or both of the following forms that is applicable: Non-Confidential Sample Description Form (KX-NSDF-02); Confidential Sample Description Form (KX-CSDF-02). The Sample Description Forms (SDF's) allow us to determine the nature of the cell/tissue lysates to be analyzed.
- E. Federal Express Airway Bill (if samples are to be delivered by courier).
- F. Commercial Invoice (required for all customers located outside of Canada).

All orders should have as a minimum: 1 SOF, 1 SIF, and 2 SDF forms completed, along with a courier airway bill and commercial invoice. A new Kinexus Service Agreement is not necessary if the client has previously placed an order with Kinexus and submitted a signed Kinexus Service Agreement at that time. Note that clients can use the In Vivo Kinex™ KSAM services to screen pre-made cell/tissue lysates from a large inventory available from Kinexus at the same pricing levels as our regular Kinex™ KAM services (please see the In Vivo Customer Information Package for more information).

FOR ALL CUSTOMERS

A. Kinexus Service Agreement

A Kinexus Service Agreement is required to be signed before the first order can be processed.

- This Agreement is required to be signed and dated by an authorized representative, typically a Senior Officer, Senior Scientist, or Principal Investigator, before the first order can be processed, but does not have to be signed again for repeat orders. The Kinexus Service Agreement is typically valid for 15 years. If you require changes or modifications to be made to our standard Service Agreement, please email us at sales@kinexus.ca to request a Microsoft Word version of the document so your requested changes can be made directly into the agreement and emailed to us for our final approval.

B. Service Order Form (KX-SOF-02)

Please ensure:

- Shipping address and contact name and numbers are specified
- Billing information is completed as outlined in Section D on the Service Identification Form (KX-SIF-02)
- Any promotional vouchers or quotations are listed in the billing sections
- Include a Purchase Order, Visa or MasterCard number for payment
- The form is signed and dated

C. Service Identification Form (KX-SIF-02)

For each sample submitted, please ensure the following:

- No less than 100 µg of protein is provided for each sample to be analyzed, 2 samples per screen
- In Section A, the customer must assign a unique Client Screen Identification Name to correlate the proteins to be analyzed for each sample submitted
- In Section B, the type of analysis (Kinex™ Screen Name) for each sample is specified.
- For Section C, your sample(s) are identified by completion of Client Supplied Non-Confidential (KX-NSDF-02) or Confidential (KX-CSDF-02) Sample Description Forms. Make sure that the Client Screen ID Name in Box A of these forms, matched the Client Screen ID Name in Box A of the KX-SIF-02 form
- In Section D, the level of confidentiality is indicated for correct pricing
- The form is certified correct and signed and dated

D. Sample Description Forms

Client Supplied Non-confidential Sample Description Form (KX-NSDF-02)

Client Supplied Confidential Sample Description Form (KX-CSDF-02)

For the cell/tissue lysate samples submitted, please ensure the following:

- Each sample tube is labeled and properly identified on the form in Section B, including final concentration and volume
- In Section A, the customer must enter the unique Client Screen Identification Name from Box A of the Service Identification Form (KX-SIF-02) to match the sample to the particular Kinex™ service to be used to analyze this sample. Also provide the name of the type of Kinex™ service (i.e. KAM-1.2).
- Your sample is described by completion of Client Supplied Non-Confidential (KX-NSDF-02) or Confidential (KX-CSDF-02) Sample Description Forms by checking the appropriate boxes and entering the appropriate information requested in Sections A-K for Non-confidential samples and Sections A-C for Confidential samples
- The form is certified correct and signed and dated
- **Note that the information provided on this form will eventually become available to thousands of other scientists in the future with the non-confidentiality pricing. In the spirit of collegiality, please be as accurate as possible in completing the KX-NSDF-02 form in order not to handicap their research efforts should they desire to follow up on your Kinex™ antibody microarray results.**

E. Airway bill for Federal Express or any courier that accepts dry ice shipments

Complete the airway bill and specify:

- Priority overnight delivery
- Bill transportation charges to your institute
- Place sufficient dry ice to last several days into a Styrofoam shipping container
- Seal the edges of the Styrofoam container with tape to preserve dry ice longer
- Dry ice is a “*hazardous*” item, so ensure proper labels are attached to the outside of the box;
- Do not specify Saturday delivery or hold at courier location
- For Federal Express shipments telephone 1-800-GO-FEDEX or visit them on-line at www.fedex.com or www.fedex.ca to schedule a pick up or complete your forms
- For shipments coming from within Canada or the United States, please ship any day from Monday to Wednesday. Do not ship on a Thursday or Friday.
- For international shipments coming from outside of North America, the best day to ship is on a Monday to ensure arrival in Canada for delivery later the same week
- It is recommended that customers e-mail the date of your shipment and the courier airway bill number with number of samples to Kinexus at info@kinexus.ca to ensure we can track your package should it get held up in Canadian Customs
- For any customer located outside of Canada, 3 copies of a commercial invoice is required to accompany your shipment (see below)

FOR U.S AND INTERNATIONAL CUSTOMER ONLY

F. Commercial Invoice (not required by Canadian customers)

Please complete the attached commercial invoice with the following information:

- Date of exportation
- Shipper/Exporter name, address, phone number
- Country of export/Country of origin
- Name of courier and the airway bill number
- Number, type and total weight of package(s)
- Total declared value of shipment (number of samples x \$1.00 per sample) and please specify currency
- Date, name, signature, and title of authorized person

Include three (3) copies of the commercial invoice with the airway bill

NOTE: Do not change the value of your shipment to more than \$1.00 per sample as this will prompt the custom brokers to charge Kinexus with a duty and GST fee on your package. Since the samples are processed internally and not returned to the customer or resold, there is no real commercial value.

The international air waybill is required for all international shipments between Canada and the rest of the world. It is also your customs declaration, which can possibly be used to clear your shipment through customs at the destination. The customs clearance process begins with the description of the air waybill. If the description is too vague or missing, customs authorities may select the shipment for further inspection. All customs paperwork, such as the commercial invoice, must have detailed commodity descriptions. A detailed description on the air waybill and other customs documentation will help speed up the clearance time and reduce your delivery time. In the event that Kinexus must go to a Canada Customs facility to claim the package of samples for client order due to inadequate completion of the commercial invoice, additional charges will apply.

Appendix A-1. Proteins and Phospho-sites Tracked in Kinex™ Antibody Microarray - KAM-1.2

Unique Pan-Specific Antibody Detected Proteins = 367

193 kinases; 24 phosphatases; 150 regulatory subunits and other proteins

Protein Kinases	Protein Kinases	Protein Kinases	Protein Kinases	Protein Phosphatases	Other Proteins	Other Proteins	Other Proteins
Abl	Erk1	MEK3 (MAP2K3)	Plk2 (SNK)	CD45	14-3-3 z	FasL	Paxillin
ACK1	Erk2	MEK3b (MAP2K3)	Plk3 (CNK)	Cdc25B	Acetylated Lysine	FKBP52	PCK2
Alk	Erk3	MEK4 (MAP2K4)	PRK1 (PKN1)	Cdc25C	AIF	Fos	PCNA
ALS2CR7 (PFTAIRE2)	Erk4	MEK5 (MAP2K5)	PRK2 (PKN2)	KAP	AK2	GNB2L1	PDI
AMPKb	Erk5	MEK6 (MAP2K6)	PRKWNK4	LAR	APG1	GroEL	PERP
ANKRD3	FAK	MEK7 (MAP2K7)	PRP4K (PRP4)	MKP1	APG2	Grp75	PI3K
ASK1 (MAP3K5)	Fes	MEKK1 (MAP3K1)	PSTAIRE	MKP2	b-Arrestin	Grp78	PI3K p110 delta
Aurora 2	FGFR1	MEKK2 (MAP3K2)	Pyk2	PAC1	Bak	Grp94	PI3KR4
Aurora 3	FGFR2	MEKK4 (MAP3K4)	Raf1	PP1/Ca (PP1a)	Bax	hHR23B	PI4KCB
Axl	FLT4	Met	RafA (Araf)	PP1/Cb (PP1b)	Bcl2	Hip	PIP5K2a
BLK	Fyn	MLK3	RafB (Braf)	PP1/Cg (PP1q1)	Bcl-XL	HO1	PKA R1a (PKR1)
BMX (Etk)	GCK	Mnk2	RIP2/RICK	PP2A/Ca	Bcl-xS/L	HO2	PKA R2a (PKR2)
BRD2	GRK2 (BARK1)	Mos	RIPK	PP2B/Aa	Bid	Hsc70	PKM2
Btk	GRK3 (BARK2)	MST1	ROKa (ROCK2)	PP2Cab	Calnexin	HSF4	PP2A B' (B56)
BUB1A	GSK3a	MST2	ROKb (ROCK1)	PP2Cd	Calreticulin	Hsp105	PP2A/Aa/b
CaMK1d	GSK3b	MST3	RONa	PP4C (X/C)	CAS	Hsp25	PP2A/Bb
CaMK1g	Haspin	mTOR (FRAP)	ROR2 (RON2)	PP5C/PPT	CASK/Lin2	Hsp40	PP2A/Bg2
CAMK2b	Hpk1	Nek2	ROS	PP6C (V/C)	CASP12	Hsp47	PP4/A'2
CAMK2d	ICK	Nek4	RSK1	PTEN	CASP1	Hsp60	PRKAB1
CAMK2g	IGF1R	Nek7	RSK2	PTP1B	CASP2	Hsp60 (Myobact-Hso65)	PSD-95
CaMK4	IKKa	NIK	RSK4	PTP1C	CASP3	Hsp70	PyDK2 (PDHK2)
CaMKK (CaMKK2)	IKKb	p38a MAPK	RYK	PTP1D/SHP2	CASP4	Hsp90a	Rab5
CDC2L5 (CHED)	IKKg/NEMO	p38d MAPK	S6Ka (p70 S6Ka)	VHR	CASP5	Hsp90b	Rac1
CDK1 (CDC2)	ILK1	p38g MAPK (Erk6)	S6Kb (p70 S6Kb)	Wip1	CASP6	HspBP1	Rb
CDK10	Insulin Receptor b	PAK1	SGK3		CASP7	I1PP2A (PHAPI)	SG2NA
CDK2	IRAK1	PAK2	SLK		CASP8	I2PP2A (PHAPII)	SIRPa
CDK4	IRAK2	PAK3	Src		CASP9	IkBa	Smac/DIABLO
CDK5	IRAK3	PAK5	STK33		Catenin b	IkBb	Smad2/3
CDK6	IRAK4	PAK6	Syk		Caveolin 2	Jun	SOCS2
CDK7	JAK1	PCTK1 (PCTAIRE1)	TAK1		Cdc34	Mcl1	SOCS4
CDK8	JAK2	PDK1	TEK (TIE2)		CDC42	mMOB1	SOD (Cu/Zn)
CDK9	JAK3	PKA Ca/b	Tik1		c-IAP1	Mn SOD	SOD (Mn)
Chk1	JIK (TAO3)	PKBa (Akt1)	TrkA		Cofilin	MSH2	SODD
Chk2	JNK	PKBb (Akt2)	TrkB		COX2	NFkappaB p50	SPHK1
CK1d	JNK2	PKBg (Akt3)	TTK		Crystallin aB	NFkappaB p65	SPHK2
CK1e	JNK3	PKCa	Tyk2		Cyclin A	Nip1	STAT1a
CK1g	KHS	PKCb1	Tyro10 (DDR2)		Cyclin B1	NME6	STAT1b
CK1g2	KKIALRE (CDK1L)	PKCb2	Tyro3		Cyclin D1	NME7	STAT2
CK2a	Krs2	PKCd	Vrk1		Cyclin D1	Nrf2	STAT3
COT	Ksr1	PKCe	Wee1		Cyclin E	NT5E	STAT4
CPG16/CaM Kinase V1	LATS1	PKCg	Yes		Cyclin G1	p107	STAT5A
Csk	Lck	PKCi/i	ZAP70		CytoC	p16 INK4	STAT5B
DAPK2	LIMK1	PKCm (PKD)	ZIPK		DAXX	p18 INK4c	STAT6
DNAPK	LOK	PKC-nu (PKN3)			DFF45	p21 CDK11	STI1
DRAK1	Lyn	PKCq			DGKZ	p27 Kip1	Striatin
DRAK2	MAK	PKCz			eIF2a	p35	TBK1
eEF2K	MAPKAPK2	PKG1a			eIF4E	p53	TPIPb
EGFR	MARK	PKG1b			ERP57	p73	TRADD
EphA1	MEK1 (MAP2K1)	PKR1			ERP72	PACSIN1	Trail
ErbB2 (HER2)	MEK2 (MAP2K2)	Plk1			FAS	PARP1	XIAP

Appendix A-2 Proteins and Phospho-sites Tracked in Kinex™ Antibody Microarray - KAM-1.2

Unique Phospho-Specific Antibody Detected Phosphorylation Sites = 248

121 kinase phospho-sites; 2 phosphatase phospho-sites; 125 phospho-sites in regulatory subunits and other proteins

Protein Kinases	Site	Protein Kinases	Site	Protein Kinases	Site	Protein Phosphatases	Site	Other Proteins	Site	Other Proteins	Site	Other Proteins	Site
AMPKa1/2	T174/T172	LIMK1	Y508/T505	PKR1	T451	SHP2	S576	4E-BP1	S65	Integrin a4	S988	STAT1	S727
ASK1 (MAP3K5)	S966	Lyn	Y507	Plk1	T210	PP1/Ca (PP1a)	T320	4E-BP1	T45	Integrin b1	S785	STAT1	Y701
ATM	S1981	MAPKAPK2	T222	PRK1 (PKN1)	T774/T816			AcCoA carboxylase	S80	Integrin b1	T783	STAT2	Y690
BMX (Etk)	Y40	MAPKAPK2a	T334	PYK2	Y579			Adducin a/g	S726	IRS1	Y612	STAT3	S727
Btk	Y223	MEK1 (MAP2K1)	S297	Raf1	S259			Arrestin b1	S412	IRS1	Y1179	STAT3	Y705
CaMK2a	T286	MEK1 (MAP2K1)	T291	Ret	S696			ATF2	T53	IRS1	S312	STAT5A	Y694
CDK1/2	T14+Y15	MEK1 (MAP2K1)	T385	RSK1	S363			ATF2	T51/T53	IRS1	S639	STAT5A	S780
CDK1/2	T161/T160	MEK1/2 (MAP2K1/2)	S217+S221	RSK1/2	S221/S227			ATF2	S94	Jun	S63	Synapsin 1	S9
CDK1/2	Y15	MEK2 (MAP2K2)	T394	RSK1/2/3	T573/T577			ATF2	T69	Jun	S73	Synapsin 1	S603
Chk2	T68	MEK3 (MAP2K3)	S189	RSK1/3	T359+S363/T356+S360			ATM	S1981	MARCKS	S158+S162	Tau	S515
EGFR	T678	MEK3/6 (MAP2K3/6)	S189/S208	S6Ka (p70/p85 S6Ka)	T229			B23 (NPM)	S4	MLC	S18	Tau	S515+S518
EGFR	T693	MEK4 (MAP2K4)	S257+T261	S6Ka (p70/p85 S6Ka)	T389			B23 (NPM)	T199	MLC	S19	Tau	S530
EGFR	Y1068	MEK4 (MAP2K4)	S80	S6Ka (p70/p85 S6Ka)	T421+S424			B23 (NPM)	T234	Msk1	S376	Tau	S578
EGFR	Y1092	MEK6 (MAP2K6)	S207	Src	Y418			Bad	S75	MYPT1	T696	Tau	S712
EGFR	Y1110	Met	Y1003	Src	Y529			Bad	S91	NFkappaB p65	S276	Tau	S716
EGFR	Y1148	Met	Y1230+Y1234+Y1235	VEGFR2 (KDR)	Y1054			BLNK	Y84	NMDAR2B	Y1474	Tau	S720
EGFR	Y1173	MLK3	T277+S281	VEGFR2 (KDR)	Y1054+Y1059			BRCA1	S1497	NR1	S896	Tau	S202
EGFR	Y1197	Mnk1	T209+T214	VEGFR2 (KDR)	Y1214			BRCA1	S1423	p27 Kip1	S10	Tau	S422
ErbB2 (HER2)	T686	mTOR (FRAP)	S2448	ZAP70	Y292			Caldesmon	S789	p53	S392	Tau	T181
ErbB2 (HER2)	Y1112	p38a MAPK	T180+Y182	ZAP70	Y315+Y319			Caveolin 2	S23	Pax2	S394	Tau	T205
ErbB2 (HER2)	Y877	p38a MAPK	T180+Y182	ZAP70/Syk	Y319/Y352			Caveolin 2	S36	Paxillin 1	Y31	Tau	T231
ErbB2 (HER2)	Y1248	PAK1	T212					Cofilin 1	S3	Paxillin 1	Y118	Tyrosine Hydroxylase	S71
Erk1	T202+Y204	PAK1/2/3	S144/S141/S154					Cofilin 2	S3	PDGFRb	Y716	Tyrosine Hydroxylase	S19
Erk2	T185+Y187	PAK1/2/3	T423/402/421					Cortactin	Y470	PED15 (PEA15)	S116	Vimentin	S33
Erk5	T218+Y220	PDGFRa	Y742					CREB1	S129+S133	PKA Ca/b	T197	Vinculin	Y821
FAK	S722	PDGFRa	Y754					CREB1	S133	PKA R2a (PKR2)	S98		
FAK	S732	PDGFRa/b	Y572+Y574/Y579+Y581					Crystallin aB	S19	PKA R2b	S114		
FAK	S843	PDK1	S244					Crystallin aB	S45	PLCg1	Y783		
FAK	S910	PKA Cb	S338					Dab1	Y198	PLCg2	Y753		
FAK	Y397	PKBa (Akt1)	S473					Dok2	Y142	PRAS40	T246		
FAK	Y576	PKBa (Akt1)	T308					eIF2a	S51	Progesterone Receptor	S294		
FAK	Y577	PKCa	S657					eIF4E	S209	PTEN	S380+S382+S385		
GRK2 (BARK1)	S670	PKCa/b2	T638/T641					eIF4G	S1107	Rac1/cdc42	S71		
GSK3a	S21	PKCb1/2	T500					eNos	T495	Rad17	S645		
GSK3a	Y279	PKCb2	T641					FKHRL1	T32	Rb	T356		
GSK3b	S9	PKCd	S645					Fos	T232	Rb	S612		
GSK3b	Y216	PKCd	S664					GAP-43	S41	Rb	S780		
IKKa	S180	PKCd	T507					GFAP	S8	Rb	S807		
IKKb	S181	PKCd	Y313					Histone H1	phospho CDK1 sites	Rb	S807+S811		
IR (INSR)	Y972	PKCe	S729					Histone H2A,X	S139	Rb	T821		
IR (INSR)	Y999	PKCg	T514					Histone H2B	S14	Rb	T826		
IR/IGF1R (INSR)	Y1189/Y1190	PKCg	T655					Histone H3	S10	Rb	S608		
JAK1	Y1022	PKCg	T674					Histone H3	S28	RSK1/2	S380/S386		
JNK	T183/Y185	PKCh	S674					Histone H3	T11	S6	S235		
Kit	Y703	PKC/i	T555					Histone H3	T3	Shc1	Y349+Y350		
Kit	Y730	PKCm (PKD)	S738+S742					Hsp27	S15	Shc	Y239		
Kit	Y936	PKCm (PKD)	S910					Hsp27	S78	Smad1/5/9	S463+S465/S465+S467		
Lck	S157	PKCq	T538					Hsp27	S82	Smad2	S465+S467		
Lck	Y191	PKCz/i	T410/T403					Hsp25	S86	SMC1	S957		
Lck	Y504	PKR1	T446					Huntingtin	S421	SOX9	S181		

Appendix B. Kinex™ Antibody Microarray - KAM-1.2 - Antibody List

The Kinex™ Antibody Microarray (KAM-1.2) tracks the expression levels and phosphorylation states of cell signalling proteins in duplicate, utilizing approximately 300 phospho-site specific and 500 pan-specific antibodies. Please note that Kinexus reserves the right to add, delete or substitute antibodies from this list from time to time without notification depending on antibody performance and availability. However, in general 98% of all antibodies listed below will be available on each microarray.

Ab No.	Target Short Name	Full Target Protein Name	Pan or Phospho Site-specific	Refseq	Swiss-prot Link	Antibody Codes	Ab Type	React. Human	React. Mouse	React. Rat	Meta Row	Meta Col.	Row	Col. 1	Col. 2	Kinetworks Screen	Predicted MW Swissprot	Observed MW Kinetworks	Target Bin Size
1	14-3-3 z	14-3-3 protein zeta (cross-reacts with other isoforms)	Pan	NP_003397	P63104	NN001	MmAb	T	T	T	1	1	1	3	4	Custom Only	28	24	22-24 + 23-26
2	4E-BP1	Eukaryotic translation initiation factor 4E binding protein 1 (PHAS1)	S65	NP_004086	Q13541	PN001	RpAb	T	T	T	1	1	1	5	6	KPSS-12.1	13	17+19+23	18-21
3	4E-BP1	Eukaryotic translation initiation factor 4E binding protein 1 (PHAS1)	T45	NP_004086	Q13541	PN114	RpAb	T	T	T	1	1	1	7	8	Custom Only	13	17+19+23	18-22
4	Abl	Abelson proto-oncogene-encoded protein-tyrosine kinase	Pan	NP_005148	P00519	NK001	MmAb	T	T	T	1	1	1	9	10	Custom Only	123	133	105-109
5	AcCoA carboxylase	Acetyl coenzyme A carboxylase	S80	NP_000655	Q13085	PN002	RpAb	T	T	T	1	1	2	1	2	KPSS-12.1	265	199	197-211
6	Acetylated Lysine		Pan			NN135-1	RpAb	T	T	T	1	1	2	3	4	Custom Only			
7	Acetylated Lysine		Pan			NN135-2	MmAb	T	T	T	1	1	2	5	6	Custom Only			
8	ACK1	Activated p21cdc42Hs protein-serine kinase	Pan	NP_005772	Q07912	NK002	RpAb	T	T	T	1	1	2	7	8	Custom Only	114	127	125-129
9	Adducin a/g	Adducin alpha (ADD1)	S726	NP_058432	P35611	PN003-PN004	RpAb	T	T	T	1	1	2	9	10	KPSS-1.3/12.1	81	122	119-127
	Adducin a/g	Adducin gamma (ADD3)	S726	NP_058432	P35611	PN003-PN004	RpAb	T	T	T	1	1	2	9	10	KPSS-1.3/12.1	79	79	77-84
10	AIF	Apoptosis inducing factor (programed cell death protein 8 (PDCD8))	Pan	NP_004199	Q95831	NN002	GpAb	T	T	T	1	1	3	1	2	Custom Only	67	66	59-68
11	AK2	Adenylate kinase 2	Pan	NP_001616	P54819	NN003	RpAb	T	T		1	1	3	3	4	Custom Only	26	24	
12	Alk	Anaplastic lymphoma kinase	Pan	AAB71619	Q9JUM73	NK003	RpAb	T	T		1	1	3	5	6	Custom Only	176	92	75-85
13	ALS2CR7 (PFTAIRE2)	Amyotrophic lateral sclerosis 2 chromosomal region candidate gene protein-serine kinase 7	Pan	NP_631897	Q96Q40	NK004	RpAb	T	T	T	1	1	3	7	8	Custom Only	44	41	39-49
14	AMPKa1/2	5'-AMP-activated protein kinase subunit alpha 1/2	T174/T172	NP_006242	Q13131	PK002	RpAb	T	T	T	1	1	3	9	10	Custom Only	63 / 62	59	54-58
15	AMPKb	5'-AMP-activated protein kinase subunit beta 1	Pan	NP_006244	Q9Y478	NK005	MmAb	T	T	T	1	1	4	1	2	Custom Only	30	38	
16	ANKRD3	Ankyrin repeat domain protein-serine kinase 3 (RIPK4, DIK)	Pan	NP_065690	P57078	NK006	RpAb	T	T	T	1	1	4	3	4	Custom Only	92	108	
17	APG1	Hsp 70-related heat shock protein 1 (osmotic stress protein 94 (OSP94))	Pan	NP_055093	Q95757	NN004	RpAb	T	T	T	1	1	4	5	6	Custom Only	94	104	100-107
18	APG2	Hsp 70-related heat shock protein 4 (HSP70RY)	Pan	BAA75062	P34932	NN122	RpAb	T	T	T	1	1	4	7	8	Custom Only	94	114	110-119

Ab No.	Target Short Name	Full Target Protein Name	Pan or Phospho Site-specific	Refseq	Swiss-prot Link	Antibody Codes	Ab Type	React. Human	React. Mouse	React. Rat	Meta Row	Meta Col.	Row	Col. 1	Col. 2	Kinetworks Screen	Predicted MW Swissprot	Observed MW Kinetworks	Target Bin Size
19	b-Arrestin	Arrestin beta	Pan	NP_004032	P49407	NN121	MmAb	T	T	T	1	1	4	9	10	Custom Only	55		
20	Arrestin b1	Arrestin beta 1	S412	NP_004032	P49407	PN005	RpAb	T	T	T	1	1	5	1	2	Custom Only	47	45	44-47
21	ASK1 (MAP3K5)	Apoptosis signal regulating protein-serine kinase	Pan	NP_005914	Q99683	NK007-1	RpAb	T	T	T	1	1	5	3	4	Custom Only	155	155	150-170
22	ASK1 (MAP3K5)	Apoptosis signal regulating protein-serine kinase	Pan	NP_005914	Q99683	NK007-2	RpAb	T	T	T	1	1	5	5	6	Custom Only	155	155	150-170
23	ASK1 (MAP3K5)	Apoptosis signal regulating protein-serine kinase	S966	NP_005914	Q99683	PK118	RpAb	T	T	T	1	1	5	7	8	Custom Only	155	155	150-170
24	ATF2	Activating transcription factor 2 (CRE-BP1)	T53	NP_001871	P15336	PN006-2	MmAb	T	T	T	1	1	5	9	10	Custom Only	52	54	60-70
25	ATF2	Activating transcription factor 2 (CRE-BP1)	T51/T53	NP_001871	P15336	PN006-3	RpAb	T	T	T	1	1	6	1	2	KPSS-12.1	52	54	60-62
26	ATF2	Activating transcription factor 2 (CRE-BP1)	S94	NP_001871	P15336	PN115	RpAb	T	T	T	1	1	6	3	4	Custom Only	52	54	60-70
27	ATF2	Activating transcription factor 2 (CRE-BP1)	T69	NP_001871	P15336	PN123	RpAb	T	T	T	1	1	6	5	6	Custom Only	52	54	60-62
28	ATM PK	Ataxia telangiectasia mutated	S1981	NP_000042	Q13315	PK115	RpAb	T	T	T	1	1	6	7	8	Custom Only	350	350	190-210
29	Aurora A (AIK) (was called Aurora 2 (AurB))	Aurora Kinase A (serine/threonine protein kinase 6)	Pan	NP_940835	Q14965	NK008-1	RpAb	T	T	F	1	1	6	9	10	Custom Only	39	47	40-46
30	Aurora A (AIK) (was called Aurora 2 (AurB))	Aurora Kinase A (serine/threonine protein kinase 6)	Pan	NP_940835	Q14965	NK008-2	RpAb	T	T	F	1	1	7	1	2	KPKS-1.2	39	47	45-50
31	HSTK12 (Aurora 2)	Aurora Kinase B (serine/threonine protein kinase 12)	Pan	NP_004208	Q96GD4	NK193	RpAb	T	T	F	1	1	7	3	4	Custom Only	39	47	34-44
32	Aurora C (AIK3) (was Aurora 3)	Aurora Kinase C (serine/threonine-protein kinase 13)	Pan	NP_003151	Q9UQB9	NK009	RpAb	T	T	T	1	1	7	5	6	Custom Only	34	28	30-36
33	Axl	Axl proto-oncogene-encoded protein-tyrosine kinase	Pan	NP_001690	P30530	NK010	RpAb	T	T	T	1	1	7	7	8	Custom Only	97	92	91-95
34	B23 (NPM)	B23 (nucleophosmin, numatrin, nucleolar protein NO38)	S4	NP_002511		PK045-PN007	RpAb	T	T	T	1	1	7	9	10	Custom Only	33	34	33-39
35	B23 (NPM)	B23 (nucleophosmin, numatrin, nucleolar protein NO38)	T199	NP_002511	P06748	PN008	RpAb	T	T	T	1	1	8	1	2	KPSS-10.1	33	38	33-39
36	B23 (NPM)	B23 (nucleophosmin, numatrin, nucleolar protein NO38)	T234	NP_002511	P06748	PN009	RpAb	T	T	T	1	1	8	3	4	KPSS-10.1	33	38	33-39
37	Bad	Bcl2-antagonist of cell death protein	S75	NP_004313	Q92934	PN010	RpAb	T	T	T	1	1	8	5	6	Custom Only	18	19	18-20
38	Bad	Bcl2-antagonist of cell death protein	S91	NP_004313	Q92934	PN011	RpAb	T	T	T	1	1	8	7	8	Custom Only	18	19	18-28
39	Bak	Bcl2 homologous antagonist/killer (BCK2L7)	Pan	NP_001179	Q16611	NN000	RpAb	T	T	T	1	1	8	9	10	Custom Only	23	21	19-23
40	Bax	Apoptosis regulator Bcl2-associated X protein	Pan	NP_620116	Q07812	NN005	RpAb	T	T	T	1	1	9	1	2	Custom Only	21	16	18-28

Ab No.	Target Short Name	Full Target Protein Name	Pan or Phospho Site-specific	Refseq	Swiss-prot Link	Antibody Codes	Ab Type	React. Human	React. Mouse	React. Rat	Meta Row	Meta Col.	Row	Col. 1	Col. 2	Kinetworks Screen	Predicted MW Swissprot	Observed MW Kinetworks	Target Bin Size
41	Bcl2	B-cell lymphoma protein 2 alpha	Pan	NP_000624	P10415	NN006	MmAb	T	T	T	1	1	9	3	4	Custom Only	26	24	22-26
42	Bcl-XL	Bcl2-like protein 1	Pan	NP_612815	Q07817	NN007	MmAb	T	T	T	1	1	9	5	6	Custom Only	26	27	24-28
43	Bcl-xS/L	Bcl-xS/L	Pan	NP_612815	Q07817	NN008	RpAb	T	T	T	1	1	9	7	8	Custom Only	~19	27 + 13	12-14 + 26-28
44	Bid	BH3 interacting domain death agonist	Pan	NP_001187	P55957	NN009	GpAb	T	?	?	1	1	9	9	10	Custom Only	22	29	27-31
45	BLK	B lymphoid tyrosine kinase	Pan	NP_001706	P51451	NK011	RpAb	T	T	T	1	1	10	1	2	Custom Only	58	55	
46	BLNK	B-cell linker protein	Y84	NP_037446	O75498	PN013	RpAb	T	T	T	1	1	10	3	4	KPSS-12.1	50	53+61	51-52 + 56-61
47	BMX (Etk)	Bone marrow X protein-tyrosine kinase	Pan	NP_001712	P51813	NK012	MmAb	T	T	T	1	1	10	5	6	KPKS-1.2	78	69	69-75
48	BMX (Etk)	Bone marrow X protein-tyrosine kinase	Y40	NP_001712	P51813	PK003	RpAb				1	1	10	7	8	Custom Only	78	69	69-75
49	BRCA1	Breast cancer type 1 susceptibility protein	S1497	NP_009225	P38398	PN014	RpAb	T	T	T	1	1	10	9	10	KPSS-10.1	208	174	160-180
50	BRCA1	Breast cancer type 1 susceptibility protein	S1423	NP_009225	P38398	PN116	RpAb	T	?	?	1	2	1	3	4	Custom Only	208	174	160-180
51	BRD2	Bromodomain-containing protein-serine kinase 2	Pan	NP_005095	P25440	NK013	RpAb	T	T	T	1	2	1	5	6	Custom Only	88	82	63-69
52	Btk	Bruton's agammaglobulinemia tyrosine kinase	Pan	NP_000052	Q06187	NK014	RpAb	T	T	F	1	2	1	7	8	KPKS-1.2	76	65	63-69
53	Btk	Bruton's agammaglobulinemia tyrosine kinase	Y223	NP_000052	Q06187	PK004	RpAb	T	T	T	1	2	1	9	10	Custom Only	76	71	64-67
54	BUB1A	BUB1 mitotic checkpoint protein-serine kinase	Pan	NP_004327	Q43683	NK015	RpAb	T	T	T	1	2	2	1	2	Custom Only	122	112	117-127
55	Caldesmon	Caldesmon	S789	NP_004333	Q05682	PN015	RpAb	T	T	T	1	2	2	3	4	Custom Only	130(H)+75(L)	141 + 108	105-116
56	Calnexin	Calnexin	Pan		P27824	NN136-1	RpAb	T	T	T	1	2	2	5	6	Custom Only	68	90	
57	Calnexin	Calnexin	Pan		P27824	NN136-2	RpAb	T	T	T	1	2	2	7	8	Custom Only	68	90	
58	Calnexin	Calnexin	Pan		P27824	NN136-3	RpAb	T	T	T	1	2	2	9	10	Custom Only	68	90	
59	Calreticulin	Calreticulin	Pan		P27797	NN137-1	RpAb	T	T	T	1	2	3	1	2	Custom Only	68	90	
60	Calreticulin	Calreticulin	Pan		P27797	NN137-2	RpAb	T	T	T	1	2	3	3	4	Custom Only	68	90	
61	CaMK1d	Calcium/calmodulin-dependent protein-serine kinase 1 delta	Pan	NP_003647	Q8IU85	NK016-1	RpAb	T	T	T	1	2	3	5	6	Custom Only	40	43	32-36
62	CaMK1d	Calcium/calmodulin-dependent protein-serine kinase 1 delta	Pan	NP_003647	Q8IU85	NK016-2	GpAb	T	T	T	1	2	3	7	8	KPKS-1.2	40	43	39-45
63	CaMK1g	Calcium/calmodulin-dependent protein-serine kinase 1 gamma	Pan	NP_065172	Q96NX5	NK017	RpAb	T	T	T	1	2	3	9	10	Custom Only	53	50	
64	CaMK2a	Calcium/calmodulin-dependent protein-serine kinase 2 alpha	T286	NP_741960	Q9UQM7	PK005-1	RpAb	T	T	T	1	2	4	1	2	Custom Only	54	45	46-48
65	CaMK2a	Calcium/calmodulin-dependent protein-serine kinase 2 alpha	T286	NP_741960	Q9UQM7	PK005-2	RpAb	T	T	T	1	2	4	3	4	Custom Only	54	45	46-48
66	CAMK2b	Calcium/calmodulin-dependent protein-serine kinase 2 beta	Pan	NP_742081	Q13554	NK018-1	RpAb	T	T	T	1	2	4	5	6	Custom Only	73	69	47-51

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67	CAMK2b	Calcium/calmodulin-dependent protein-serine kinase 2 beta	Pan	NP_742081	Q13554	NK018-2	MmAb	T	T	T	1	2	4	7	8	Custom Only	73	69	47-51
68	CAMK2d	Calcium/calmodulin-dependent protein-serine kinase 2 delta	Pan	NP_742126	Q13557	NK019-1	RpAb	T	T	T	1	2	4	9	10	Custom Only	56	64	56-59
69	CAMK2d	Calcium/calmodulin-dependent protein-serine kinase 2 delta	Pan	NP_742126	Q13557	NK019-2	RpAb	T	T	T	1	2	5	1	2	Custom Only	56	64	56-59
70	CAMK2g	Calcium/calmodulin-dependent protein-serine kinase 2 gamma	Pan	NP_751913	Q13555	NK020	RpAb	T	T	T	1	2	5	3	4	Custom Only	53	65	64-68
71	CaMK4	Calcium/calmodulin-dependent protein-serine kinase 4	Pan	NP_001735	Q16566	NK021-1	RpAb	T	T	T	1	2	5	5	6	KPKS-1.2	52	65	61-69
72	CaMK4	Calcium/calmodulin-dependent protein-serine kinase 4	Pan	NP_001735	Q16566	NK021-2	RpAb	T	T	T	1	2	5	7	8	Custom Only	52	65	61-69
73	CaMK4	Calcium/calmodulin-dependent protein-serine kinase 4	Pan	NP_001735	Q16566	NK021-3	RpAb	T	T	T	1	2	5	9	10	Custom Only	52	65	61-69
74	CaMKK (CaMKK2)	Calcium/calmodulin-dependent protein-serine kinase kinase	Pan	NP_006540	Q8N5S9	NK022	RpAb	T	T	T	1	2	6	1	2	KPKS-1.2	56	52	50-55
75	CAS	Cellular apoptosis susceptibility protein (CSE1L)	Pan	NP_001307	P55060	NN010	MmAb	T	T	T	1	2	6	3	4	Custom Only	110	94	88-99
76	CASK/Lin2	Calcium/calmodulin-dependent protein-serine kinase (Lin2 homolog)	Pan	AAB88125	Q14936	NK023	MmAb	T	T	T	1	2	6	5	6	Custom Only	105		101-105
77	CASP12	Pro-caspase 12 (mouse)	Pan	NP_033938	O08736	NN020	RpAb	T	T	T	1	2	6	7	8	Custom Only	48	50	47-55
78	CASP1	Pro-caspase 1 (Interleukin-1 beta convertase) alpha isoform	Pan	NP_001214	P29466	NN011-NN125	RpAb	T	T	T	1	2	6	9	10	Custom Only	45	46	43-47
	CASP1	Pro-caspase 1 (Interleukin-1 beta convertase) beta isoform	Pan	NP_001214	P29466	NN011-NN125	RpAb	T	T	T							40	41	38-42
79	CASP2	Pro-caspase 2 (ICH1 protease)	Pan	NP_001215	P42575	NN012	RpAb	T	T	T	1	2	7	1	2	Custom Only	49	43	41-46
80	CASP3	Pro-caspase 3 (apopain, cysteine protease CPP32)	Pan	NP_004337	P42574	NN013	RpAb	T	T	T	1	2	7	3	4	Custom Only	32	29	27-30
81	CASP4	Pro-caspase 4 (ICH2 protease, ICE(rel)-II)	Pan	NP_001216	P49662	NN014	RpAb	T	F	F	1	2	7	5	6	Custom Only	43	38	35-39
82	CASP5	Caspase 5 (ICH3 protease, ICE(rel)-III)	Pan	NP_004338	P51878	NN015	RpAb	T	T	T	1	2	7	7	8	Custom Only	48	35+23	21-23 + 33-36
83	CASP6	Pro-caspase 6 (apoptotic protease Mch2)	Pan	NP_001217	P55212	NN016	MmAb	T	F	F	1	2	7	9	10	Custom Only	33	32	30-32
84	CASP7	Pro-caspase 7 (ICE-like apoptotic protease 3 (ICE-LAP3), Mch3)	Pan	NP_01218	P55210	NN017	MmAb	T	T	T	1	2	8	1	2	Custom Only	34	32	29-33
85	CASP8	Pro-caspase 8 (ICE-like apoptotic protease 5 (ICE-LAP5), Mch5, FLICE, CAP4)	Pan	NP_001219	Q14790	NN018	MmAb	T	T	T	1	2	8	3	4	Custom Only	55	57	48-52 + 55-60
86	CASP9	Pro-caspase 9 (ICE-like apoptotic protease 6 (ICE-LAP6), Mch6, APAF3)	Pan	NP_033938	P55211	NN019	MmAb	T	T	F	1	2	8	5	6	Custom Only	46	42	41-44
87	Catenin b	Catenin (cadherin-associated protein) beta 1	Pan	NP_001895	P35222	NN021	RpAb	T	T	T	1	2	8	7	8	Custom Only	85	91	87-97
88	Caveolin 2	Caveolin 2	Pan	NP_001224	P51636	NN022	MmAb	T	T	T	1	2	8	9	10	Custom Only	20		

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89	Caveolin 2	Caveolin 2	S23	NP_001224	P51636	PN017	RpAb	T	T	T	1	2	9	1	2	Custom Only	18	18	18-20
90	Caveolin 2	Caveolin 2	S36	NP_001224	P51636	PN018	RpAb	T	T	T	1	2	9	3	4	Custom Only	18	18	18-20
91	CD45	Leukocyte common antigen CD45 receptor-tyrosine phosphatase (LCA, T200)	Pan	NP_002829	P08575	NP001	MmAb	T	T	T	1	2	9	5	6	KPPS-1.2	147	173	150-181
92	Cdc25B	Cell division cycle 25B phosphatase	Pan	NP_004349	P30305	NP002	MmAb	T	T	T	1	2	9	7	8	KPPS-1.2	65+64+61	63	60-67
93	Cdc25C	Cell division cycle 25C phosphatase	Pan	NP_001781	P30307	NP003	RpAb	T	T	T	1	2	9	9	10	KPPS-1.2	53	56	54-61
94	CDC2L5 (CHED)	Cell division cycle 2-like protein-serine kinase 5	Pan	NP_003709	Q14004	NK024	RpAb	T	T	T	1	2	10	1	2	Custom Only	165	49	
95	Cdc34	Cell division cycle 34 (ubiquitin-conjugating ligase)	Pan	NP_004350	P49427	NN023	MmAb	T	T	T	1	2	10	3	4	Custom Only	27	31	30-32
96	CDC42	Cell division control protein 42 homolog	Pan	NP_001782	P60953	NN024	MmAb	T	T	T	1	2	10	5	6	Custom Only	22		
97	CDK1 (CDC2)	Cyclin-dependent protein-serine kinase 1	Pan	NP_001777	P06493	NK025-1	MmAb	T	T	T	1	2	10	7	8	KCSS-1.0	34	26	24-28
98	CDK1 (CDC2)	Cyclin-dependent protein-serine kinase 1	Pan	NP_001777	P06493	NK025-2	MmAb	T	T	T	1	2	10	9	10	KPKS-1.2	34	26	24-28
99	CDK1 (CDC2)	Cyclin-dependent protein-serine kinase 1	Pan	NP_001777	P06493	NK025-3	MmAb	T	T	T	1	2	11	1	2	Custom Only	34	26	24-28
100	CDK1 (CDC2)	Cyclin-dependent protein-serine kinase 1	Pan	NP_001777	P06493	NK025-4	RpAb	T	T	T	1	2	11	3	4	Custom Only	34	26	24-28
101	CDK1/2	Cyclin-dependent protein-serine kinase 1/2	T14+Y15	NP_001777	P06493	PK006	RpAb	T	T	T	1	2	11	5	6	KPSS-1.3/10.1	34	28	24-26 + 27-29
102	CDK1/2	Cyclin-dependent protein-serine kinase 1/2	Y15	NP_001777	P06493	PK007-1	RpAb	T	T	T	1	2	11	7	8	Custom Only	34	27	24-26 + 27-29
103	CDK1/2	Cyclin-dependent protein-serine kinase 1/2	Y15	NP_001777	P06493	PK007-2	RpAb	T	T	T	1	2	11	9	10	KPSS-1.3	34	27	24-26 + 27-29
104	CDK1/2	Cyclin-dependent protein-serine kinase 1/2	Y15	NP_001777	P06493	PK007-3	RpAb	T	T	T	1	3	1	3	4	KPSS-10.1	34	27	24-26 + 27-29
105	CDK1/2	Cyclin-dependent protein-serine kinase 1/2	T161/T160	NP_001777	P06493	PK008	RpAb	T	T	T	1	3	1	5	6	KPSS-10.1	34	27	24-26 + 27-29
106	CDK10	Cyclin-dependent protein-serine kinase 10 PISSLRE	Pan	NP_003665	Q15131	NK033	RpAb	T	T	T	1	3	1	7	8	Custom Only	41	43	
107	CDK2	Cyclin-dependent protein-serine kinase 2	Pan	NP_001789	P24941	NK026-1	MmAb	T	T	T	1	3	1	9	10	Custom Only	34	27	24-29
108	CDK2	Cyclin-dependent protein-serine kinase 2	Pan	NP_001789	P24941	NK026-2	RpAb	T	T	T	1	3	2	1	2	Custom Only	34	27	24-29
109	CDK2	Cyclin-dependent protein-serine kinase 2	Pan	NP_001789	P24941	NK026-3	MmAb	T	T	T	1	3	2	3	4	KPKS-1.2	34	27	24-29
110	CDK2	Cyclin-dependent protein-serine kinase 2	Pan	NP_001789	P24941	NK026-4	RpAb	T	T	T	1	3	2	5	6	Custom Only	34	27	24-29
111	CDK4	Cyclin-dependent protein-serine kinase 4	Pan	NP_000066	P11802	NK027	MmAb	T	T	T	1	3	2	7	8	KPKS-1.2	34	26	23-29
112	CDK5	Cyclin-dependent protein-serine kinase 5	Pan	NP_004926	Q00535	NK028-1	RpAb	T	T	T	1	3	2	9	10	KPKS-1.2	33	24	22-28
114	CDK5	Cyclin-dependent protein-serine kinase 5	Pan	NP_004926	Q00535	NK028-3	RpAb	T	T	T	1	3	3	3	4	Custom Only	33	24	22-28

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113	CDK5	Cyclin-dependent protein-serine kinase 5	Pan	NP_004926	Q00535	NK028-2	RpAb	T	T	T	1	3	3	1	2	Custom Only	33	24	22-28
115	CDK6	Cyclin-dependent protein-serine kinase 6	Pan	NP_001250	Q00534	NK029-1	MmAb	T	T	T	1	3	3	5	6	KPKS-1.2	37	33	32-37
116	CDK6	Cyclin-dependent protein-serine kinase 6	Pan	NP_001250	Q00534	NK029-2	RpAb	T	T	T	1	3	3	7	8	Custom Only	37	33	32-37
117	CDK7	Cyclin-dependent protein-serine kinase 7	Pan	NP_001790	P50613	NK030-1	RpAb	T	T	T	1	3	3	9	10	KPKS-1.2	39	36	34-38
118	CDK7	Cyclin-dependent protein-serine kinase 7	Pan	NP_001790	P50613	NK030-2	MmAb	T	T	T	1	3	4	1	2	KPKS-1.2	39	36	34-38
119	CDK8	Cyclin-dependent protein-serine kinase 8	Pan	NP_001252	P49336	NK031-2	RpAb	T	T	T	1	3	4	3	4	Custom Only	53	54	48-52 (doublet)
120	CDK8	Cyclin-dependent protein-serine kinase 8	Pan	NP_001252	P49336	NK031-3	RpAb	T	T	T	1	3	4	5	6	Custom Only	53	54	48-52 (doublet)
121	CDK8	Cyclin-dependent protein-serine kinase 8	Pan	NP_001252	P49336	NK031-4	RpAb	T	T	T	1	3	4	7	8	Custom Only	53	54	48-52 (doublet)
122	CDK9	Cyclin-dependent protein-serine kinase 9	Pan	NP_001252	P50750	NK032	RpAb	T	T	T	1	3	4	9	10	KPKS-1.2	43	34	33-37
123	KKIALRE (CDK1L)	Cyclin-dependent kinase-like 1	Pan	NP_004187.2	Q00532	NK199	RpAb	T	T	T	1	3	5	1	2	Custom Only	42		
124	Chk1	Checkpoint protein-serine kinase 1	Pan	NP_001265	Q14757	NK034	MmAb	T	T	F	1	3	5	3	4	Custom Only	54	48	47-52
125	Chk2	Checkpoint protein-serine kinase 2	Pan	NP_009125	O96017	NK035	RpAb	T	T	T	1	3	5	5	6	Custom Only	61	60	57-65
126	Chk2	Checkpoint protein-serine kinase 2	T68	NP_009125	O96017	PK119	RpAb	T	T	T	1	3	5	7	8	Custom Only	61	60	57-65
127	c-IAP1	Cellular inhibitor of apoptosis protein 1 (baculoviral IAP repeat-containing protein 3, apoptosis inhibitor 2 (API2))	Pan	NP_001156	Q13490	NN025	RpAb	T	T	T	1	3	5	9	10	Custom Only	68		51-55
128	CK1d	Casein protein-serine kinase 1 delta	Pan	NP_001884	P48730	NK036	GpAb	T	T	T	1	3	6	1	2	KPKS-1.2	47	39	37-43
129	CK1e	Casein protein-serine kinase 1 epsilon	Pan	NP_001885	P49674	NK037	MmAb	T	T	T	1	3	6	3	4	KPKS-1.2	47	39	32-37
130	CK1g	Casein kinase I gamma 1 isoform	Pan	NP_071331	Q8IXA3	NK198	RpAb	T	T	T	1	3	6	5	6	Custom Only	50		40-45
131	CK1g2	Casein protein-serine kinase 1 gamma 2	Pan	NP_001310	P78368	NK040	RpAb	T	T	T	1	3	6	7	8	Custom Only	47	44	40-45
132	CK2a	Casein protein-serine kinase 2 alpha/ alpha prime	Pan	NP_001887	P68400	NK041	RpAb	T	T	T	1	3	6	9	10	KPKS-1.2	45 + 41	34+38.5	32-36 + 34-38 + 36-40
133	Cofilin	Cofilin 1	Pan	NP_005498	P23528	NN026	MmAb	T	T	T	1	3	7	1	2	Custom Only	19		
134	Cofilin 1	Cofilin 1	S3	NP_005498	P23528	PN019	RpAb	T	T	T	1	3	7	3	4	KPSS-12.1	18	15	14-16
135	Cofilin 2	Cofilin 2	S3	NP_068733	Q9Y281	PN020	RpAb	T	T	T	1	3	7	5	6	Custom Only	19	16	14-16
136	Cortactin	Cortactin (amplaxin) (mouse)	Y470	NP_031829	Q60598	PN022	RpAb	T	T	T	1	3	7	7	8	KPSS-12.1	85	80	74-83
137	COT	Osaka thyroid oncogene protein-serine kinase (Tpl2)	Pan	NP_005195	P41279	NK042-1	RpAb	T	T	T	1	3	7	9	10	KPKS-1.2	53	54	50-56
138	COT	Osaka thyroid oncogene protein-serine kinase (Tpl2)	Pan	NP_005195	P41279	NK042-2	RpAb	T	T	T	1	3	8	1	2	Custom Only	53	54	50-56

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139	COX2	Cyclo-oxygenase 2 (prostaglandin G/H synthase 2 precursor)	Pan	NP_000954	P35354	NN027	MmAb	T	T	T	1	3	8	3	4	Custom Only	69	69	68-72
140	CPG16/CaM Kinase VI	Serine/threonine-protein kinase DCAMKL1	Pan	NP_004725	O15075	NK043	MmAb	T	T	T	1	3	8	5	6	Custom Only	82 + 43	82 + 48	78-84 + 44-48
141	CREB1	cAMP response element binding protein 1	S129+S133	NP_004370	P16220	PN023	RpAb	T	T	T	1	3	8	7	8	Custom Only	37	36	42-47
142	CREB1	cAMP response element binding protein 1	S133	NP_004370	P16220	PN024	RpAb	T	T	T	1	3	8	9	10	KPSS-1.3/12.1	37	44	42-47
143	Crystallin aB	Crystallin alpha B (heat-shock 20 kDa like-protein)	Pan	NP_001876	P02511	NN138	RpAb	T	T	T	1	3	9	1	2	Custom Only	20	18	17-19
144	Crystallin aB	Crystallin alpha B (heat-shock 20 kDa like-protein)	Pan			NN149	MmAb				1	3	9	3	4	Custom Only	20	18	17-19
145	Crystallin aB	Crystallin alpha B (heat-shock 20 kDa like-protein)	S19	NP_001876	P02511	PN025	RpAb	T	T	T	1	3	9	5	6	Custom Only	20	18	17-19
146	Crystallin aB	Crystallin alpha B (heat-shock 20 kDa like-protein)	S45	NP_001876	P02511	PN110	RpAb	T	T	T	1	3	9	7	8	Custom Only	20	18	17-19
147	Csk	C-terminus of Src tyrosine kinase	Pan	NP_004374	P41240	NK044	MmAb	T	T	T	1	3	9	9	10	KPKS-1.2	51	44	41-47
148	Cyclin A	Cyclin A1	Pan	NP_003905	P78396	NN028	RpAb	T	T	T	1	3	10	1	2	Custom Only	52	48+52	48-54
149	Cyclin B1	Cyclin B1	Pan	NP_114172	P14635	NN029	MmAb	T	T	T	1	3	10	3	4	Custom Only	48	58	57-62
150	Cyclin D1	Cyclin D1 (PRAD1)	Pan	NP_444284	P24385	NN030-1	RmAb	T	T	F	1	3	10	5	6	Custom Only	34	30	28-34
151	Cyclin D1	Cyclin D1 (PRAD1)		NP_444284	P24385	NN030-2	RpAb				1	3	10	7	8	Custom Only	34	30	28-34
152	Cyclin E	Cyclin E1	Pan	NP_001229	P24864	NN031	MmAb	T	F	F	1	3	10	9	10	Custom Only	47	46	46-50
153	Cyclin G1	Cyclin G1	Pan	NP_004051	P51959	NN032	RpAb	T	T	T	1	4	1	3	4	Custom Only	34	29	27-30
154	CytoC	Cytochrome C	Pan	NP_061820	P99999	NN033	RpAb	T	T	T	1	4	1	5	6	Custom Only	12	11	9-12
155	Dab1	Disabled homolog 1	Y198	NP_066566	Q75553	PN026	RpAb	T	T	T	1	4	1	7	8	Custom Only	60	79	75-85
156	DAPK2	Death-associated protein kinase 2	Pan	NP_055141	Q9UIK4	NK046	RpAb	T	T		1	4	1	9	10	Custom Only	43	38	
157	DAXX	Death-associated protein 6 (BING2)	Pan	NP_001341	Q9UER7	NN034	RpAb	T	T	T	1	4	2	1	2	Custom Only	81	137	122-145
158	DFF45	DNA fragmentation factor alpha (ICAD) 35-kDa subunit	Pan	NP_004392	Q00273	NN035-NN126	MmAb	T		T	1	4	2	3	4	Custom Only	35	32	30-34
	DFF45	DNA fragmentation factor alpha (ICAD) 35-kDa subunit	Pan	NP_004392	Q00273	NN035-NN126	MmAb	T		T	1	4	2	3	4	Custom Only	35	32	30-34
159	DGKZ	Diacylglycerol kinase zeta	Pan	NP_963290	Q13574	NN036	RpAb	T	T	T	1	4	2	5	6	Custom Only	124	119	
160	DNAPK	DNA-activated protein-serine kinase	Pan	NP_008835	P78527	NK048	RpAb	T	T	T	1	4	2	7	8	KPKS-1.2	469	233	215-300
161	Dok2	Docking protein 2 (mouse)	Y142	NP_034201	O60496	PN027	RpAb	T	T	T	1	4	2	9	10	KPSS-12.1	46	46	44-47
162	DRAK1	DAP kinase-related apoptosis-inducing protein-serine kinase 1 (STK17A)	Pan	NP_004751	Q9UEE5	NK049	RpAb	T	T		1	4	3	1	2	Custom Only	47	49	45-55

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163	DRAK2	DAP kinase-related apoptosis-inducing protein-serine kinase 2 (STK17B)	Pan	NP_004217	Q94768	NK050	RpAb	T	T	T	1	4	3	3	4	Custom Only	42	40	40-50
164	eEF2K	Elongation factor-2 protein-serine kinase	Pan	NP_037434	Q00418	NK051	RpAb	T	T	T	1	4	3	5	6	KPKS-1.2	82	103	100-106
165	EGFR	Epidermal growth factor receptor-tyrosine kinase	Pan	NP_005219	P00533	NK052-1	RpAb	T	T	T	1	4	3	7	8	Custom Only	134	171	165-175
166	EGFR	Epidermal growth factor receptor-tyrosine kinase	Pan	NP_005219	P00533	NK052-2	RpAb	T	T	T	1	4	3	9	10	Custom Only	134	171	154-177
167	EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1068	NP_005219	P00533	PK009	RpAb	T	T	T	1	4	4	1	2	Custom Only	134	174	154-177
168	EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1148	NP_005219	P00533	PK010-2	RpAb	T	T	T	1	4	4	3	4	KPSS-11.0	134	174	154-177
169	EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1148	NP_005219	P00533	PK010-3	RpAb	T	T	T	1	4	4	5	6	Custom Only	134	174	154-177
170	EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1173	NP_005219	P00533	PK011	RmAb	T	T	T	1	4	4	7	8	Custom Only	134	174	154-177
171	EGFR	Epidermal growth factor receptor-tyrosine kinase	T678	NP_005219	P00533	PK120	RpAb	T	T	T	1	4	4	9	10	Custom Only	134	174	154-177
172	EGFR	Epidermal growth factor receptor-tyrosine kinase	T693	NP_005219	P00533	PK121	RpAb	T	T	T	1	4	5	1	2	Custom Only	134	174	154-177
173	EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1092	NP_005219	P00533	PK122	RpAb	T	T	T	1	4	5	3	4	Custom Only	134	174	154-177
174	EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1110	NP_005219	P00533	PK123	RpAb	T	T	T	1	4	5	5	6	Custom Only	134	174	154-177
175	EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1197	NP_005219	P00533	PK124	RpAb	T	T	T	1	4	5	7	8	Custom Only	134	174	154-177
176	eIF2a	Eukaryotic translation initiation factor 2 alpha	Pan	NP_004085	P05198	NN038	MmAb	T	T	T	1	4	5	9	10	Custom Only	36	33	32-35
177	eIF2a	Eukaryotic translation initiation factor 2 alpha	S51	NP_004085	P05198	PN028-1	RpAb	T	T	T	1	4	6	1	2	Custom Only	36	33	32-36
178	eIF2a	Eukaryotic translation initiation factor 2 alpha	S51	NP_004085	P05198	PN028-2	RpAb	T	T	T	1	4	6	3	4	Custom Only	36	33	32-36
179	eIF4E	Eukaryotic translation initiation factor 4 (mRNA cap binding protein)	Pan	NP_001959	P06730	NN039	MmAb	T			1	4	6	5	6	Custom Only	25	24	24-26
180	eIF4E	Eukaryotic translation initiation factor 4 (mRNA cap binding protein)	S209	NP_001959	P06730	PN030-1	RpAb	T	T	T	1	4	6	7	8	Custom Only	25	24	24-26
181	eIF4E	Eukaryotic translation initiation factor 4 (mRNA cap binding protein)	S209	NP_001959	P06730	PN030-2	RpAb	T	T	T	1	4	6	9	10	KPSS-12.1	25	24	23-26
182	eIF4G	Eukaryotic translation initiation factor 4 gamma 1	S1107	NP_004944	Q04637	PN031	RpAb	T	T	T	1	4	7	1	2	Custom Only	176	192	204-230
183	eNos	Nitric-oxide synthase, endothelial	T495	NP_000594	P29474	PN097	RmAb	T	T	T	1	4	7	3	4	Custom Only	130	130	120-135
184	EphA1	Ephrin type-A receptor 1 protein-tyrosine kinase	Pan	NP_005223	P21709	NK053	RpAb	T	T	T	1	4	7	5	6	Custom Only	108	106	
185	ErbB2 (HER2)	ErbB2 (Neu) receptor-tyrosine kinase	Pan	NP_004439	P04626	NK054-1	MmAb	T	T	T	1	4	7	7	8	Custom Only	138	182	179-192
186	ErbB2 (HER2)	ErbB2 (Neu) receptor-tyrosine kinase	Pan	NP_004439	P04626	NK054-2	RpAb	T	T	T	1	4	7	9	10	Custom Only	138	182	179-192

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187	ErbB2 (HER2)	ErbB2 (Neu) receptor-tyrosine kinase	Y1248	NP_004439	P04626	PK013-1	RpAb	T	T	T	1	4	8	1	2	Custom Only	138	182	179-192
188	ErbB2 (HER2)	ErbB2 (Neu) receptor-tyrosine kinase	Y877	NP_004439	P04626	PK125	RpAb	T	T	T	1	4	8	3	4	Custom Only	138	182	179-192
189	ErbB2 (HER2)	ErbB2 (Neu) receptor-tyrosine kinase	T686	NP_004439	P04626	PK134	RpAb	T	T	T	1	4	8	5	6	Custom Only	138	182	179-192
190	ErbB2 (HER2)	ErbB2 (Neu) receptor-tyrosine kinase	Y1112	NP_004439	P04626	PK135	RpAb	T	T	T	1	4	8	7	8	Custom Only	138	182	179-192
191	ErbB2 (HER2)	ErbB2 (Neu) receptor-tyrosine kinase	Y1248	NP_004439	P04626	PK013-2	RpAb	T	T	T	1	4	8	9	10	KPSS-11.0	138	182	179-192
192	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	Pan	AAA36142.1	P27361	NK055-NK056-1	RpAb	T	T	T	1	4	9	1	2	KPKS-1.2	43	43	38-43 + 41-44
	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK055-NK056-1	RpAb	T	T	T	1	4	9	1	2	KPKS-1.2	41	39	36-41 + 38-43
193	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	Pan	AAA36142.1	P27361	NK055-NK056-2	RpAb	T	T	T	1	4	9	3	4	Custom Only	43	43	40-43
	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK055-NK056-2	RpAb	T	T	T	1	4	9	3	4	Custom Only	41	39	36-41 + 38-43
194	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	Pan	AAA36142.1	P27361	NK055-NK056-3	RpAb	T	T	T	1	4	9	5	6	Custom Only	43	43	40-44
	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK055-NK056-3	RpAb	T	T	T	1	4	9	5	6	Custom Only	41	39	36-41 + 38-43
195	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	Pan	AAA36142.1	P27361	NK055-NK056-4	RpAb	T	T	T	1	4	9	7	8	Custom Only	43	43	38-43 + 41-44
	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK055-NK056-4	RpAb	T	T	T	1	4	9	7	8	Custom Only	41	39	36-41 + 38-43
196	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	Pan	AAA36142.1	P27361	NK055-NK056-5	RpAb	T	T	T	1	4	9	9	10	Custom Only	43	43	38-43 + 41-44
	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK055-NK056-5	RpAb	T	T	T	1	4	9	9	10	Custom Only	41	39	36-41 + 38-43
197	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	Pan	AAA36142.1	P27361	NK055-NK056-6	RpAb	T	T	T	1	4	10	1	2	Custom Only	43	43	38-43 + 41-44
	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK055-NK056-6	RpAb	T	T	T	1	4	10	1	2	Custom Only	41	39	36-41 + 38-43
198	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	Pan	AAA36142.1	P27361	NK055-NK056-7	RpAb	T	T	T	1	4	10	3	4	Custom Only	43	43	40-43
	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK055-NK056-7	RpAb	T	T	T	1	4	10	3	4	Custom Only	41	39	36-41 + 38-43

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199	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	T202+Y204; T185/Y187	AAA36142.1	P27361	PK014-PK015-2	RpAb	T	T	T	1	4	10	5	6	Custom Only	43	43	40-44
	Erk2	Extracellular regulated protein-serine kinase 2 (p42MAP kinase)	T202+Y204; T185/Y187	AAA36142.1	P27361	PK014-PK015-2	RpAb	T	T	T	1	4	10	5	6	Custom Only	43	41	37-40
200	Erk1	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	T202+Y204; T185/Y187	AAA36142.1	P27361	PK014-PK015-3	RpAb	T	T	T	1	4	10	7	8	KPSS-1.3/10.1/11.0/12.1	43	43	40-43
	Erk2	Extracellular regulated protein-serine kinase 2 (p42MAP kinase)	T202+Y204; T185/Y187	AAA36142.1	P27361	PK014-PK015-3	RpAb	T	T	T	1	4	10	7	8	KPSS-1.3/10.1/11.0/12.1	43	41	38-40
201	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK056-1	RpAb	T	T	T	1	4	10	9	10	KPKS-1.2	41	39	36-41 + 38-43
202	Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan	NP_002736	P28482	NK056-2	RpAb	T	T	T	1	4	11	1	2	Custom Only	41	39	36-41 + 38-43
203	Erk3	Extracellular regulated protein-serine kinase 3	Pan	NP_002739	Q16659	NK057-2	RpAb	T	T	T	1	4	11	3	4	KPKS-1.2	83	50+53.5	51-55 + 53-58
204	Erk4	Extracellular regulated protein-serine kinase 4	Pan	NP_002738	Q13164	NK058	RpAb	T	T	T	1	4	11	5	6	Custom Only	89	63	
205	Erk5	Extracellular regulated protein-serine kinase 5 (Big MAP kinase 1 (BMK1))	Pan	NP_620602	Q13164	NK206-1	RpAb	T	T	T	1	4	11	7	8	Custom Only	89	110	105-120
206	Erk5	Extracellular regulated protein-serine kinase 5 (Big MAP kinase 1 (BMK1))	Pan	NP_620602	Q13164	NK206-2	RpAb	T	T	T	1	4	11	9	10	Custom Only	89	110	105-120
207	Erk5	Extracellular regulated protein-serine kinase 5 (Big MAP kinase 1 (BMK1))	T218+Y220	NP_620602	Q13164	PK016	RpAb	T	T	T	2	1	1	3	4	KPSS-11.0	89	110	105-120
208	ERP57	ER protein 57 kDa (protein disulfide isomerase-associated 3; 58 kDa glucose regulated protein)	Pan	NP_005304	P30101	NN040	MmAb	T	F	F	2	1	1	5	6	Custom Only	57	49	48-51
209	ERP72	ER protein 72 kDa (protein disulfide isomerase-associated 4)	Pan	NP_004902	P13667	NN041	RpAb	T	T	T	2	1	1	7	8	Custom Only	73	76	72-78
210	FAK	Focal adhesion protein-tyrosine kinase	Pan	NP_005598	Q05397	NK060	RpAb	T	T	T	2	1	1	9	10	KPKS-1.2	119	116	112-126
211	FAK	Focal adhesion protein-tyrosine kinase	Y397	NP_005598	Q05397	PK017	RpAb	T	T	T	2	1	2	1	2	KPSS-11.0	119	113	115-124
212	FAK	Focal adhesion protein-tyrosine kinase	Y576	NP_005598	Q05397	PK018-1	RpAb	T	T	T	2	1	2	3	4	Custom Only	119	114	115-124
213	FAK	Focal adhesion protein-tyrosine kinase	Y576	NP_005598	Q05397	PK018-2	RpAb	T	T	T	2	1	2	5	6	Custom Only	119	114	115-124
214	FAK	Focal adhesion protein-tyrosine kinase	Y577	NP_005598	Q05397	PK019-1	RpAb	T	T	T	2	1	2	7	8	Custom Only	119	113	115-124
215	FAK	Focal adhesion protein-tyrosine kinase	S722	NP_005598	Q05397	PK020-2	RpAb	T	T	T	2	1	2	9	10	Custom Only	119	115	115-124

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216	FAK	Focal adhesion protein-tyrosine kinase	S722	NP_005598	Q05397	PK020-3	RpAb	T	T	T	2	1	3	1	2	KPSS11	119	115	115-124
217	FAK	Focal adhesion protein-tyrosine kinase	S722	NP_005598	Q05397	PK020-4	RpAb	T	T	T	2	1	3	3	4	Custom Only	119	115	115-124
218	FAK	Focal adhesion protein-tyrosine kinase	S732	NP_005598	Q05397	PK021	RpAb	T	T	T	2	1	3	5	6	Custom Only	119	125	115-124
219	FAK	Focal adhesion protein-tyrosine kinase	S843	NP_005598	Q05397	PK022-2	RpAb	T	T	T	2	1	3	7	8	KPSS-11.0	119	113	115-124
220	FAK	Focal adhesion protein-tyrosine kinase	S910	NP_005598	Q05397	PK024	RpAb	T	T	T	2	1	3	9	10	KPSS-11.0	119	114	115-124
221	FAS	Tumor necrosis factor superfamily member 6 (Apo1, CD95)	Pan	NP_003789	P25445	NN042	RpAb	T	T	T	2	1	4	1	2	Custom Only	38	45	44-47
222	FasL	Tumor necrosis factor ligand, member 6	Pan	NP_000630	P48023	NN043	MmAb	T	T	T	2	1	4	3	4	Custom Only	31	31	29-32
223	Fes	Fes/Fps protein-tyrosine kinase	Pan	NP_001996	P07332	NK061	RpAb	T	T	T	2	1	4	5	6	Custom Only	93	96	
224	FGFR1	Fibroblast growth factor receptor-tyrosine kinase 1	Pan	P11362	P11362	NK062	RpAb	T	T	T	2	1	4	7	8	Custom Only	92	95	96-100
225	FGFR2	Fibroblast growth factor receptor-tyrosine kinase 2 (BEK)	Pan	P21802	P21802	NK063	RpAb	T	T	T	2	1	4	9	10	Custom Only	92	94	87-93
226	FKBP52	FK506-binding protein 4	Pan	NP_002005	Q02790	NN127	MmAb	T	T	T	2	1	5	1	2	Custom Only	52		
227	FKHRL1	Forkhead-like transcription factor 1 (FOXO3A)	T32	NP_001446	Q43524	PN032	RpAb	T	F	T	2	1	5	3	4	KPSS-12.1	71	99	80-90
228	FLT4	Vascular endothelial growth factor receptor-protein-tyrosine kinase 3 (VEGFR3)	Pan	NP_002011	P35916	NK064	RpAb	T	T	T	2	1	5	5	6	Custom Only	146	90	83-93
229	Fos	Fos-c FBJ murine osteosarcoma oncoprotein-related transcription factor	Pan	NP_005243	P01100	NN044	RpAb	T	T	T	2	1	5	7	8	Custom Only	41	43	53-63
230	Fos	Fos-c FBJ murine osteosarcoma oncoprotein-related transcription factor	T232	NP_005243	P01100	PN033-1	RpAb	T	T	T	2	1	5	9	10	Custom Only	41	57	56-61
231	Fyn	Fyn proto-oncogene-encoded protein-tyrosine kinase	Pan	NP_002028	P06241	NK065	MmAb	T	T	T	2	1	6	1	2	KPKS-1.2	61	48	43-48 + 45-50
232	GAP-43	Growth associated protein 43 (Neurogranin)	S41	NP_002036	P17677	PN098	RpAb	T	T	T	2	1	6	3	4	Custom Only	43	43	43-53
233	GCK	Germinal centre protein-serine kinase	Pan	NP_004570	Q12851	NK066	GpAb	T	T	T	2	1	6	5	6	KPKS-1.2	92	87	80-89
234	GFAP	Glial fibrillary acidic protein	S8	NP_002046	P14136	PN034	MmAb	T	T	T	2	1	6	7	8	Custom Only	50	50	
235	GNB2L1	Guanine nucleotide-binding protein beta (receptor for activated C kinase 1 (RACK1))	Pan	NP_006089	P63244	NN045	RpAb	T	T	T	2	1	6	9	10	Custom Only	35	26	
236	GRK2 (BARK1)	G protein-coupled receptor-serine kinase 2	Pan	NP_001610	P25098	NK067	RpAb	T	T	T	2	1	7	1	2	KPKS-1.2	80	74	71-79
237	GRK2 (BARK1)	G protein-coupled receptor-serine kinase 2	S670	NP_001610	P25098	PK025	RpAb	T	T	T	2	1	7	3	4	KPSS-11.0	80	77+65	70-80 + 82-83
238	GRK3 (BARK2)	G protein-coupled receptor-serine kinase 3	Pan	NP_005151	P35626	NK068	RpAb	T	T	T	2	1	7	5	6	Custom Only	80	92	85-95

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239	GroEL	GroEL homolog (may correspond to Hsp60)	Pan	NP_002147	P10809	NN046	RpAb	T	T	T	2	1	7	7	8	Custom Only	61	50	48-54
240	Grp75	Glucose regulated protein 75	Pan	NP_004125	P38646	NN047	MmAb	T	T	T	2	1	7	9	10	Custom Only	74	68	66-71
241	Grp78	Glucose regulated protein 78	Pan	NP_005338	P11021	NN048	RpAb	T	T	T	2	1	8	1	2	Custom Only	72	73	69-73
242	Grp94	Glucose regulated protein 94 (endoplasmic)	Pan	NP_003290	P14625	NN049-1	RpAb	T	T	T	2	1	8	3	4	Custom Only	92	95	94-100
243	Grp94	Glucose regulated protein 94 (endoplasmic)	Pan	NP_003290	P14625	NN049-2	RpAb	T	T	T	2	1	8	5	6	Custom Only	94	95	94-100
244	GSK3a	Glycogen synthase-serine kinase 3 alpha	Pan	NP_063937	P49840	NK069-NK070-1	MmAb	T	T	T	2	1	8	7	8	KPKS-1.2	51	45	40-45
	GSK3b	Glycogen synthase-serine kinase 3 beta	Pan	NP_002084		NK069-NK070-1	MmAb	T	T	T	2	1	8	7	8	KPKS-1.2	47	40	37-41
245	GSK3a	Glycogen synthase-serine kinase 3 alpha	Pan	NP_063937	P49840	NK069-NK070-2	MmAb	T	T	T	2	1	8	9	10	KPKS-1.2	51	45	40-45
	GSK3b	Glycogen synthase-serine kinase 3 beta	Pan	NP_002084		NK069-NK070-2	MmAb	T	T	T	2	1	8	9	10	KPKS-1.2	47	40	37-41
246	GSK3a	Glycogen synthase-serine kinase 3 alpha	S21/S9	NP_063937	P49840	PK026-PK027-1	RpAb	T	T	T	2	1	9	1	2	KPSS-1.3/10.1	51	45	44-47
	GSK3b	Glycogen synthase-serine kinase 3 beta	S21/S9	NP_002084	P49841	PK026-PK027-1	RpAb	T	T	T	2	1	9	1	2	KPSS-1.3/10.1	47	40	39-43
247	GSK3a	Glycogen synthase-serine kinase 3 alpha	Y279/Y216	NP_063937	P49840	PK028-PK029-1	RpAb	T	T	T	2	1	9	3	4	KOSS1.3/10.1/Custom Only	51	45	43-46 + 49-53
	GSK3b	Glycogen synthase-serine kinase 3 beta	Y279/Y216	NP_002084	P49841	PK028-PK029-1	RpAb	T	T	T	2	1	9	3	4	KOSS1.3/10.1/Custom Only	47	40	34-37 + 40-43
248	GSK3a	Glycogen synthase-serine kinase 3 alpha	Y279/Y216	NP_063937	P49840	PK028-PK029-2	RpAb	T	T	T	2	1	9	5	6	KPSS-1.3/10.1	51	45	44-48 + 49-53
	GSK3b	Glycogen synthase-serine kinase 3 beta	Y279/Y216	NP_002084	P49841	PK028-PK029-2	RpAb	T	T	T	2	1	9	5	6	KPSS-1.3/10.1	47	40	34-37 + 39-42
249	GSK3b	Glycogen synthase-serine kinase 3 beta	Pan	NP_002084	P49841	NK194-NK195-1	RpAb	T	T	T	2	1	9	7	8	KPSS-1.3/10.1	47	40	34-37 + 39-42
250	GSK3b	Glycogen synthase-serine kinase 3 beta	Pan	NP_002084	P49841	NK194-NK195-3	RpAb	T	T	T	2	1	9	9	10	Custom Only	47	40	34-37 + 39-42
251	GSK3b	Glycogen synthase-serine kinase 3	Pan	NP_002084	P49841	NK194-NK195-4	RpAb	T	T	T	2	1	10	1	2	Custom Only	47	40	34-37 + 39-42
252	GSK3b	Glycogen synthase-serine kinase 3	Pan	NP_002084	P49841	NK194-NK195-5	RpAb	T	T	T	2	1	10	3	4	Custom Only	47	40	34-37 + 39-42
253	Haspin	Haploid germ cell-specific nuclear protein-serine kinase	Pan	NP_114171	Q8TF76	NK071	RpAb	T	T	T	2	1	10	5	6	Custom Only	88		
254	hHR23B	UV excision repair protein RAD23 homolog B	Pan	NP_002865	P54727	NN050	MmAb	T	T	F	2	1	10	7	8	Custom Only	43	60	58-62
255	Hip	Hsp70/Hsc70 interacting protein (ST13)	Pan	NP_003923	P50502	NN051	RpAb	T	T	T	2	1	10	9	10	Custom Only	41	46	45-47
256	Histone H1	Histone H1 phosphorylated	phospho CDK1 sites	NP_005316	Q02539	PN035	RpAb	T	T	T	2	2	1	3	4	Custom Only	22	30	28-33
257	Histone H2A.X	Histone H2A variant X	S139	NP_002096	P16104	PN036	MmAb	T	T	T	2	2	1	5	6	Custom Only	15	14	12--14

Ab No.	Target Short Name	Full Target Protein Name	Pan or Phospho Site-specific	Refseq	Swissprot Link	Antibody Codes	Ab Type	React. Human	React. Mouse	React. Rat	Meta Row	Meta Col.	Row	Col. 1	Col. 2	Kinetworks Screen	Predicted MW Swissprot	Observed MW Kinetworks	Target Bin Size
258	Histone H2B	Histone H2B	S14	NP_778225	P33778	PN037	RpAb	T	T	T	2	2	1	7	8	Custom Only	14	14	12--14
259	Histone H3	Histone H3.3	S10	NP_003521	P84243	PN038	RpAb	T	T	T	2	2	1	9	10	Custom Only	15	14	12--14
260	Histone H3	Histone H3.3	S28	NP_003521	P84243	PN039	RpAb	T	T	T	2	2	2	1	2	Custom Only	15	14	12--14
261	Histone H3	Histone H3.3	T11	NP_003521	P84243	PN100	RpAb	T	T	T	2	2	2	3	4	Custom Only	15	14	12--14
262	Histone H3	Histone H3.3	T3	NP_003521	P84243	PN101	RpAb	T	T	T	2	2	2	5	6	Custom Only	15	14	12--14
263	HO1	Heme oxygenase 1	Pan	NP_002124	P09601	NN052	RpAb	T	T	T	2	2	2	7	8	Custom Only	33	24+31.5	24-28
264	HO2	Heme oxygenase 2	Pan	NP_002125	P30519	NN053	RpAb	T	T	T	2	2	2	9	10	Custom Only	36	31	29-33
265	Hpk1	Hematopoietic progenitor protein-serine kinase 1	Pan	NP_009112	Q92918	NK072	GpAb	T	T	T	2	2	3	1	2	KPKS-1.2	91	91	83-95
266	Hsc70	Heat shock 70 kDa protein 8	Pan	NP_006588	P11142	NN054-1	MmAb	T	T	T	2	2	3	3	4	Custom Only	71	64	63-66
267	Hsc70	Heat shock 70 kDa protein 8	Pan	NP_006588	P11142	NN054-2	RpAb	T			2	2	3	5	6	Custom Only	71	64	63-66
268	HSF4	Heat shock transcription factor 4	Pan	NP_001529	Q9ULV5	NN055	MmAb	T	T	F	2	2	3	7	8	Custom Only	53	44	42-46
269	Hsp105	Heat shock 105 kDa protein	Pan	NP_006635	Q92598	NN062	RpAb	T	T	T	2	2	3	9	10	Custom Only	97	116	111-122
270	Hsp25	Heat shock 27 kDa protein beta 1 (HspB1)	Pan	NP_001531	P04792	NN056	RpAb	T	T	T	2	2	4	1	2	Custom Only	23	22	20-24
271	Hsp27	Heat shock 27 kDa protein beta 1 (HspB1)	S15	NP_001531	P04792	PN040-1	RpAb	T	F	T	2	2	4	3	4	KPSS-12.1	23	23	22-23
272	Hsp27	Heat shock 27 kDa protein beta 1 (HspB1)	S15	NP_001531	P04792	PN040-2	RpAb	T	F	T	2	2	4	5	6	Custom Only	23	23	22-25
273	Hsp27	Heat shock 27 kDa protein beta 1 (HspB1)	S78	NP_001531	P04792	PN041	RpAb	T	F	T	2	2	4	7	8	KPSS-12.1	23	23	21-22
274	Hsp27	Heat shock 27 kDa protein beta 1 (HspB1)	S82	NP_001531	P04792	PN042-1	RpAb	T	T	T	2	2	4	9	10	Custom Only	23	22	22-24
275	Hsp27	Heat shock 27 kDa protein beta 1 (HspB1)	S82	NP_001531	P04792	PN042-2	RpAb	T	T	T	2	2	5	1	2	KPSS-12.1	23	22	22-24
276	Hsp25	Heat shock 27 kDa protein beta 1 (HspB1)	S86	NP_038588	P14602	PN042-3	RpAb	T	T	T	2	2	5	3	4	Custom Only	23	23	21-24
277	Hsp40	DnaJ homolog, subfamily B member 1	Pan	NP_006136	P25685	NN057-1	MmAb	T	T	T	2	2	5	5	6	Custom Only	38	34	33-37
278	Hsp40	DnaJ homolog, subfamily B member 1	Pan	NP_006136	P25685	NN057-2	RpAb	T			2	2	5	7	8	Custom Only	38	34	33-37
279	Hsp40	DnaJ homolog, subfamily B member 1	Pan	NP_006136	P25685	NN057-3	RpAb	T	T	T	2	2	5	9	10	Custom Only	38	34	33-37
280	Hsp47	Heat shock 47 kDa protein (collagen-binding protein 1, colligin 1)	Pan	NP_001226	P29043	NN058	MmAb	T	T	T	2	2	6	1	2	Custom Only	46	41	39-43
281	Hsp60	Heat shock 60 kDa protein 1 (chaperonin, CPN60)	Pan	NP_002147	P10809	NN059-1	MmAb	T	T	T	2	2	6	3	4	Custom Only	61	50	49-53
282	Hsp60 (Myobact-Hsp65)	Heat shock 60 kDa protein 1 (chaperonin, CPN60)	Pan	NP_002147	P10809	NN059-2	MmAb	T	T	T	2	2	6	5	6	Custom Only	61	50	49-53

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283	Hsp60	Heat shock 60 kDa protein 1 (chaperonin, CPN60)	Pan	NP_002147	P10809	NN059-3	MmAb	T	T	T	2	2	6	7	8	Custom Only	61	50	49-53
284	Hsp70	Heat shock 70 kDa protein 1	Pan	NP_005336	P08107	NN060-1	MmAb	T	T	T	2	2	6	9	10	Custom Only	70	61	60-65
285	Hsp70	Heat shock 70 kDa protein 1	Pan	NP_005336	P08107	NN060-2	MmAb	T	T	T	2	2	7	1	2	Custom Only	70	61	60-65
286	Hsp70	Heat shock 70 kDa protein 1	Pan	NP_005336	P08107	NN060-3	RpAb	T	T	T	2	2	7	3	4	Custom Only	70	61	60-65
287	Hsp70	Heat shock 70 kDa protein 1	Pan	NP_005336	P08107	NN060-4	RpAb	T	T	T	2	2	7	5	6	Custom Only	70	61	60-65
288	Hsp90	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-1	MmAb	T	T	T	2	2	7	7	8	Custom Only	85	84	80-86
289	Hsp90a/b	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-10	MmAb	T	T	T	2	2	7	9	10	Custom Only	85	84	80-86
290	Hsp90	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-2	MmAb	T		T	2	2	8	1	2	Custom Only	85	84	80-86
291	Hsp90	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-3	MmAb				2	2	8	3	4	Custom Only	85	84	80-86
292	Hsp90	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-4	MmAb				2	2	8	5	6	Custom Only	85	84	80-86
293	Hsp90a/b	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-5	MmAb	T	T	T	2	2	8	7	8	Custom Only	85	84	80-86
294	Hsp90a/b	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-6	MmAb	T	T	T	2	2	8	9	10	Custom Only	85	84	80-86
295	Hsp90a/b	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-7	MmAb	T	T	T	2	2	9	1	2	Custom Only	85	84	80-86
296	Hsp90a/b	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-8	MmAb	T	T	T	2	2	9	3	4	Custom Only	85	84	80-86
297	Hsp90a/b	Heat shock 90 kDa protein alpha/beta	Pan	NP_005339	P07900	NN061-9	MmAb	T	T	T	2	2	9	5	6	Custom Only	85	84	80-86
298	Hsp90a	Heat shock 90 kDa protein alpha	Pan	NP_005339	P07900	NN128-1	MmAb	T			2	2	9	7	8	Custom Only	85	84	80-86
299	Hsp90a	Heat shock 90 kDa protein alpha	Pan	NP_005339	P07900	NN128-2	MmAb	T	T	T	2	2	9	9	10	Custom Only	85	84	80-86
300	Hsp90a	Heat shock 90 kDa protein alpha	Pan	NP_005339	P07900	NN128-3	MmAb	T	T	T	2	2	10	1	2	Custom Only	85	84	80-86
301	Hsp90a	Heat shock 90 kDa protein alpha	Pan	NP_005339	P07900	NN128-4	MmAb	T	T	T	2	2	10	3	4	Custom Only	85	84	80-86
302	Hsp90a	Heat shock 90 kDa protein alpha	Pan	NP_005339	P07900	NN128-5	MmAb	T	T	T	2	2	10	5	6	Custom Only	85	84	80-86
303	Hsp90a	Heat shock 90 kDa protein alpha	Pan	NP_005339	P07900	NN128-6	RpAb	T	T	T	2	2	10	7	8	Custom Only	85	84	80-86
304	Hsp90b	Heat shock 90 kDa protein alpha	Pan	NP_005339	P07900	NN128-7	RpAb	T	T	T	2	2	10	9	10	Custom Only	85	84	80-86
305	Hsp90a	Heat shock 90 kDa protein alpha	Pan	NP_005339	P07900	NN128-8	RpAb	T	T	T	2	2	11	1	2	Custom Only	85	84	80-86
306	Hsp90b	Heat shock 90 kDa protein beta	Pan	NP_031381	P08238	NN129-1	MmAb	T			2	2	11	3	4	Custom Only	85	84	80-86
307	Hsp90b	Heat shock 90 kDa protein beta	Pan	NP_031381	P08238	NN129-3	RpAb	T	T	T	2	2	11	5	6	Custom Only	85	84	80-86
308	HspBP1	Hsp70 binding protein 1	Pan	NP_036399	Q95351	NN063	MmAb	F	F	T	2	2	11	7	8	Custom Only	39		37-41

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309	Huntingtin	Huntington's disease protein	S421	NP_002102	P42858	PN103	RpAb	T	T	T	2	2	11	9	10	KPSS-12.1	350	350	190-210
310	I1PP2A (PHAPI)	Acidic leucine-rich nuclear phosphoprotein 32 family member A	Pan	NP_006296	P39687	NN130	RpAb	T	T	T	2	3	1	3	4	Custom Only	29		
311	I2PP2A (PHAPII)	Protein SET	Pan	NP_003002	Q01105	NN131	RpAb	T	T	T	2	3	1	5	6	Custom Only	32 + 34		
312	ICK	Intestinal cell protein-serine kinase (MAK-related kinase (MRK)	Pan	NP_057597	Q9UPZ9	NK073	RpAb	T	T	T	2	3	1	7	8	Custom Only	71	92	70-75
313	IGF1R	Insulin-like growth factor receptor protein-tyrosine kinase	Pan	NP_000866	P08069	NK074	RpAb	T	T	T	2	3	1	9	10	Custom Only	155	166	130-160
314	IkBα	Inhibitor of NF-kappa-B alpha (MAD3)	Pan	NP_065390	P25963	NN064	RpAb	T	T	T	2	3	2	1	2	Custom Only	36	36	35-45
315	IκBβ	Inhibitor of NF-kappa-B beta (thyroid receptor interacting protein 9)	Pan	NP_002494	Q15653	NN065	RpAb	T	T	T	2	3	2	3	4	Custom Only	38	45	44-54
316	IKKα	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	Pan	NP_001269	Q15111	NK075-1	RpAb	T	T	T	2	3	2	5	6	Custom Only	85	81	80-90
317	IKKα	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	Pan	NP_001269	Q15111	NK075-2	MmAb	T	T	T	2	3	2	7	8	Custom Only	85	81	80-90
318	IKKα	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	Pan	NP_001269	Q15111	NK075-3	RpAb	T	T	T	2	3	2	9	10	KPKS-1.2	85	81	80-90
319	IKKα	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	Pan	NP_001269	Q15111	NK075-4	RpAb	T			2	3	3	1	2	Custom Only	85	81	80-90
320	IKKα	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	S180/S181	NP_001269	Q15111	PK030-PK031	RpAb	T	T	T	2	3	3	3	4	Custom Only	85	80	80-86
	IKKβ	Inhibitor of NF-kappa-B protein-serine kinase beta	S180/S181	NP_001547	Q15111	PK030-PK031	RpAb	T	T	T	2	3	3	3	4	Custom Only	87	90	88-94
321	IKKβ	Inhibitor of NF-kappa-B protein-serine kinase beta	Pan	NP_001547	Q14920	NK076-1	RpAb	T	T	T	2	3	3	5	6	KPKS-1.2	87	87	83-90
322	IKKβ	Inhibitor of NF-kappa-B protein-serine kinase beta	Pan	NP_001547	Q14920	NK076-2	RpAb	T	T	T	2	3	3	7	8	Custom Only	87	87	81-91
323	IKKβ	Inhibitor of NF-kappa-B protein-serine kinase beta	Pan	NP_001547	Q14920	NK076-3	RpAb	T			2	3	3	9	10	Custom Only	87	87	81-91
324	IKKγ/NEMO	I-kappa-B kinase gamma/NF-kappa-B essential modulator	Pan	NP_003630	Q9Y6K9	NN149	MmAb	T			2	3	4	1	2	Custom Only	48		
325	ILK1	Integrin-linked protein-serine kinase 1	Pan	NP_034692	Q13418	NK078-1	RpAb	T	T	T	2	3	4	3	4	Custom Only	51	44	
326	ILK1	Integrin-linked protein-serine kinase 1	Pan	NP_034692	Q13418	NK078-2	RpAb	T	T	T	2	3	4	5	6	Custom Only	51	44	45-55
327	ILK1	Integrin-linked protein-serine kinase 1	Pan	NP_034692	Q13418	NK078-3	RpAb				2	3	4	7	8	Custom Only	51	44	
328	Integrin α4	Integrin alpha 4 (VLA4)	S988	NP_000876	P13612	PN043	RpAb	T	T	T	2	3	4	9	10	Custom Only	115	154	146-159
329	Integrin β1	Integrin beta 1 (fibronectin receptor beta subunit, CD29 antigen)	S785	NP_002202	P05556	PN044	RpAb	T	T	T	2	3	5	1	2	Custom Only	88	146	120-135
330	Integrin β1	Integrin beta 1 (fibronectin receptor beta subunit, CD29 antigen)	T783	NP_002202	P05556	PN105	RpAb	T	T	T	2	3	5	3	4	Custom Only	88	146	120-135
331	Insulin Receptor β	Insulin receptor beta chain	Pan	NP_000199	P06213	NK079	MmAb	T			2	3	5	5	6	Custom Only	95		

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332	IR (INSR)	Insulin receptor	Y999	NP_000199	P06213	PK032	RpAb	T	T	T	2	3	5	7	8	KPSS-11.0	156	83	82-88
333	IR (INSR)	Insulin receptor	Y972	NP_000199	P06213	PK136		T	T	T	2	3	5	9	10	Custom Only	156	83	82-88
334	IR/IGF1R (INSR)	Insulin receptor / Insulin-like growth factor 1 receptor	Y1189/Y1190	NP_000866	P06213	PK033	RpAb	T	T	T	2	3	6	1	2	KPSS-11.0	156/ 155	95	86-90
335	IRAK1	Interleukin 1 receptor-associated kinase 1 (Pelle-like protein kinase)	Pan	NP_001560	P51617	NK080-1	RpAb	T	T	T	2	3	6	3	4	Custom Only	77	77	70-80
336	IRAK1	Interleukin 1 receptor-associated kinase 1 (Pelle-like protein kinase)		NP_001560	P51617	NK080-2					2	3	6	5	6	Custom Only	77	77	70-80
337	IRAK2	Interleukin 1 receptor-associated kinase 2	Pan	NP_001561	Q43187	NK081-1	RpAb	T	T	T	2	3	6	7	8	Custom Only	65	77	60-70
338	IRAK2	Interleukin 1 receptor-associated kinase 2	Pan	NP_001561	Q43187	NK081-2		T	T	T	2	3	6	9	10	Custom Only	65	77	60-70
339	IRAK3	Interleukin 1 receptor-associated kinase 3	Pan	NP_009130	Q9Y616	NK082	RpAb	T	T	T	2	3	7	1	2	Custom Only	68	57	60-70
340	IRAK4	Interleukin 1 receptor-associated kinase 4	Pan	NP_057207	Q9NWZ3	NK083-1	RpAb	T	T	T	2	3	7	3	4	Custom Only	52	50	47-57
341	IRAK4	Interleukin 1 receptor-associated kinase 4	Pan	NP_057207	Q9NWZ3	NK083-2	RpAb	T	T	T	2	3	7	5	6	Custom Only	52	50	
342	IRS1	Insulin receptor substrate 1	Y612	NP_005535	P35568	PN045	RpAb	T	T	T	2	3	7	7	8	Custom Only	132	181	161-191
343	IRS1	Insulin receptor substrate 1	Y1179	NP_005535	P35568	PN046-2					2	3	7	9	10	Custom Only	132	181	161-191
344	IRS1	Insulin receptor substrate 1	S312	NP_005535	P35568	PN117	RpAb	T	T	T	2	3	8	1	2	Custom Only	132	181	161-191
345	IRS1	Insulin receptor substrate 1	S639	NP_005535	P35568	PN118	RpAb	T	T	T	2	3	8	3	4	Custom Only	132	181	161-191
346	JAK1	Janus protein-tyrosine kinase 1	Pan	NP_002218	P23458	NK084-1	RpAb	T	T	T	2	3	8	5	6	Custom Only	132	116	
347	JAK1	Janus protein-tyrosine kinase 1	Pan	NP_002218	P23458	NK084-2	RpAb	T	T	T	2	3	8	7	8	KPKS-1.2	132	116	115-124
348	JAK1	Janus protein-tyrosine kinase 1	Y1022	NP_002218	P23458	PK126	RpAb				2	3	8	9	10	Custom Only	115-124		
349	JAK2	Janus protein-tyrosine kinase 2	Pan	NP_004963	Q60674	NK085	RpAb	T	T	T	2	3	9	1	2	KPKS-1.2	131	110	105-124
350	JAK3	Janus protein-tyrosine kinase 3	Pan	NP_000206	P52333	NK086	MmAb	T	T	T	2	3	9	3	4	Custom Only	125	103	101-105
351	JIK (TAO3)	STE20-like protein-serine kinase	Pan	NP_057365	Q9UHG7	NK087	RpAb	T	T	T	2	3	9	5	6	Custom Only	106	97	90-107
352	JNK	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK))	T183/Y185	NP_002741	P45983	PK035-1	RpAb	T	T	T	2	3	9	7	8	KPSS-1.3/11.0	44 + 48 + 53	48+44+39+37	46-49, 44-45, 38-42, 37-40
353	JNK	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK))	T183/Y185	NP_002741	P45983	PK035-2	RpAb	T	T	T	2	3	9	9	10	Custom Only	44 + 48 + 53	48+44+39+37	36-40 + 44-49
354	JNK	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK))	T183/Y185	NP_002741	P45983	PK035-3	RpAb	T	T	T	2	3	10	1	2	Custom Only	44 + 48 + 53	48+44+39+37	44-54 + 50-60

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355	JNK	Jun N-terminus protein-serine kinases (stress-activated protein kinase (SAPK)) 1/2/3	Pan	NP_002741	P45983	NK088-1	RpAb	T	T	T	2	3	10	3	4	KPKS-1.2	44+48+53	39+44	36-42 + 43-49
356	JNK2	Jun N-terminus protein-serine kinases (stress-activated protein kinase (SAPK)) 1/2/3	Pan	NP_002741	P45983	NK088-2					2	3	10	5	6	Custom Only	44+48+53	39+44	36-42 + 43-49
357	JNK2	Jun N-terminus protein-serine kinases (stress-activated protein kinase (SAPK)) 2	Pan	NP_002744	P45984	NK189	RpAb	T	T	T	2	3	10	7	8	Custom Only	44+48+53	39+44	41-49 + 50-60
358	JNK2/3	Jun N-terminus protein-serine kinase (stress-activated protein kinase 2/3(SAPKa/b))	Pan	NP_002743.3	P45984	NK196	RpAb				2	3	10	9	10	Custom Only	48		36-42 + 43-49
359	JNK3	Jun N-terminus protein-serine kinase (stress-activated protein kinase 3(SAPKb))	Pan	NP_002744.1	P53779	NK197	RpAb				2	4	1	3	4	Custom Only	53		36-42 + 43-49
360	Jun	Jun proto-oncogene-encoded AP1 transcription factor	Pan	NP_002219	P05412	NN066	MmAb	T			2	4	1	5	6	Custom Only	39		
361	Jun	Jun proto-oncogene-encoded AP1 transcription factor	S63	NP_002219	P05412	PN047	RpAb	T	T	T	2	4	1	7	8	Custom Only	36	40+39+38	38-42
362	Jun	Jun proto-oncogene-encoded AP1 transcription factor	S73	NP_002219	P05412	PN048-1	RpAb	T	T	T	2	4	1	9	10	KPSS-1.3/12.1	36	43+40+38	43-44, 41-43, 39-41, 37-39
363	Jun	Jun proto-oncogene-encoded AP1 transcription factor	S73	NP_002219	P05412	PN048-2	RpAb	T	T	T	2	4	2	1	2	Custom Only	36	43+40+38	43-44, 41-43, 39-41, 37-39
364	Jun	Jun proto-oncogene-encoded AP1 transcription factor	S73	NP_002219	P05412	PN048-3	RpAb	T	T	T	2	4	2	3	4	Custom Only	36	43+40+38	43-44, 41-43, 39-41, 37-39
365	KAP	Cyclin-dependent kinase associated phosphatase (CDK inhibitor 3, CIP2)	Pan	NP_005183	Q16667	NP004	RpAb	T	T	T	2	4	2	5	6	KPPS-1.2	24	33	30-34
366	KHS	Kinase homologous to SPS1/STE20 (MAP kinase kinase protein-serine kinase 5 (MEKKK5))	Pan	NP_006566	Q9Y4K4	NK089	GpAb	T	T	T	2	4	2	7	8	Custom Only	95	101	99-103
367	Kit	Kit/Steel factor receptor-tyrosine kinase	Y703	P10721	P10721	PK036	RpAb	T	T	F	2	4	2	9	10	KPSS-11.0	110	141	133-145
368	Kit	Kit/Steel factor receptor-tyrosine kinase	Y730	P10721	P10721	PK037	RpAb	T	T	T	2	4	3	1	2	Custom Only	110	134 + 187	133-145
369	Kit	Kit/Steel factor receptor-tyrosine kinase	Y936	P10721	P10721	PK038	RpAb	T	T	F	2	4	3	3	4	Custom Only	110	183	133-145
370	Ksr1	Protein-serine kinase suppressor of Ras 1	Pan	AAC50354.1	Q8IVT5	NK090-1	RpAb	T	T	T	2	4	3	5	6	KPKS-1.2	72	92	90-97
371	Ksr1	Protein-serine kinase suppressor of Ras 1	Pan	AAC50354.1	Q8IVT5	NK090-2					2	4	3	7	8	Custom Only	72	92	90-97
372	LAR	LCA antigen-related (LAR) receptor tyrosine phosphatase	Pan	NP_002831	P10586	NP005	MmAb	T	T	T	2	4	3	9	10	KPPS-1.2	212	147	144-152
373	LATS1	Large tumor suppressor 1 protein-serine kinase (WARTS)	Pan	NP_004681	Q95835	NK091	RpAb	T	T	T	2	4	4	1	2	Custom Only	127	109	120-130

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374	Lck	Lymphocyte-specific protein-tyrosine kinase	Pan	NP_005347	P06239	NK092-1	RpAb	T	T	T	2	4	4	3	4	Custom Only	58	45	51-61
375	Lck	Lymphocyte-specific protein-tyrosine kinase	Pan	NP_005347	P06239	NK092-2	MmAb	T	T	T	2	4	4	5	6	KPKS-1.2	58	45	41-47
376	Lck	Lymphocyte-specific protein-tyrosine kinase	S157	NP_005347	P06239	PK039	RpAb	T	T	T	2	4	4	7	8	Custom Only	58	46 + 54	44-48
377	Lck	Lymphocyte-specific protein-tyrosine kinase	Y191	NP_005347	P06239	PK040	RpAb	T	T	T	2	4	4	9	10	Custom Only	58	46	44-48
378	Lck	Lymphocyte-specific protein-tyrosine kinase	Y504	NP_005347	P06239	PK041	RpAb	T	T	F	2	4	5	1	2	Custom Only	58	46	44-48
379	LIMK1	LIM domain kinase 1	Pan	NP_002305	P53667	NK093	MmAb	T	T	T	2	4	5	3	4	Custom Only	73		
380	LIMK1	LIM domain kinase 1	Y508/T505	NP_002305	P53667	PK042-PK118	RpAb	T	T	T	2	4	5	5	6	Custom Only	73 / 72		67-77
	LIMK2	LIM domain kinase 2	Y508/T505	NP_057952	P53671	PK042-PK118					2	4	5	5	6	Custom Only			60-70
381	LOK	Lymphocyte-oriented protein-serine kinase	Pan	NP_005981	O94804	NK094	RpAb	T	T		2	4	5	7	8	Custom Only	112	120	118-122
382	Lyn	Yes-related protein-tyrosine kinase	Pan	NP_002341	P07948	NK095	MmAb	T	T	T	2	4	5	9	10	KPKS-1.2	58	47	44-48
383	Lyn	Yes-related protein-tyrosine kinase	Y507	NP_002341	P07948	PK043	RpAb	T	T	T	2	4	6	1	2	KPSS-11.0	58	46	44-46 + 46-48 + 48-50
384	MAK	Male germ cell-associated protein-serine kinase	Pan	NP_005897	P20794	NK096	RpAb	T	T	T	2	4	6	3	4	Custom Only	71	85	
385	MAPKAPK2	Mitogen-activated protein kinase-activated protein kinase 2	Pan	NP_116584	P49137	NK097	GpAb	T	T	T	2	4	6	5	6	Custom Only	46	43	41-45
386	MAPKAPK2	Mitogen-activated protein kinase-activated protein kinase 2	T222	NP_004750	P49137	PK044	RpAb	T	T	T	2	4	6	7	8	Custom Only	46	51	49-54
387	MAPKAPK2a	Mitogen-activated protein kinase-activated protein kinase 2 alpha	T334	NP_004750	P49137	PN049-PN112-1	RpAb	T	T	T	2	4	6	9	10	Custom Only	46	45	50-55
	MAPKAPK2b	Mitogen-activated protein kinase-activated protein kinase 2 beta	T334	NP_004750	P49137	PN049-PN112-1	RpAb	T	T	T	2	4	6	9	10	Custom Only	60	53	39-45
388	MAPKAPK2a	Mitogen-activated protein kinase-activated protein kinase 2 alpha	T334	NP_004750	P49137	PN049-PN112-2	RpAb	T	T	T	2	4	7	1	2	Custom Only	49	45	50-55
	MAPKAPK2b	Mitogen-activated protein kinase-activated protein kinase 2 beta	T334	NP_004750	P49137	PN049-PN112-2	RpAb	T	T	T	2	4	7	1	2	Custom Only	60	53	39-45
389	MARCKS	Myristoylated alanine-rich protein kinase C substrate	S158+S162	NP_002347	P29966	PN050-1	RpAb	T	T	T	2	4	7	3	4	KPSS-12.1	31	88+83	85-89 + 90-95
390	MARK	MAP/microtubule affinity-regulating protein-serine kinase 1	Pan	NP_061120	Q9P0L2	NK098	RpAb	T	T	T	2	4	7	5	6	Custom Only	89	108	
391	Mcl1	Myeloid cell leukemia differentiation protein 1	Pan	NP_068779	Q07820	NN067	RpAb	T	T	T	2	4	7	7	8	Custom Only	37	38	36-40
392	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	Pan	NP_002746	Q02750	NK099-1	MmAb	T	T	T	2	4	7	9	10	KPKS-1.2	43	40	37-43

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393	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	Pan	NP_002746	Q02750	NK099-2	RpAb	T	T	T	2	4	8	1	2	Custom Only	40-43		
394	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	Pan	NP_002746	Q02750	NK099-3	RpAb	T	T	T	2	4	8	3	4	Custom Only	40-43		
395	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	Pan	NP_002746	Q02750	NK099-4	RpAb	T	T	T	2	4	8	5	6	Custom Only	40-43		
396	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	Pan	NP_002746	Q02750	NK099-5	RpAb	T	T	T	2	4	8	7	8	Custom Only	37-43		
397	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	T291	NP_002746	Q02750	PK046-1	RpAb	T	T	T	2	4	8	9	10	KPSS-10.1	43	42	40-43
398	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	T291	NP_002746	Q02750	PK046-2	RpAb	T	T	T	2	4	9	1	2	Custom Only	43	42	40-43
399	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	T291	NP_002746	Q02750	PK046-3	RpAb	T	T	T	2	4	9	3	4	Custom Only	43	42	40-43
400	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	S297	NP_002746	Q02750	PK047-2	RpAb	T	T	T	2	4	9	5	6	KPSS-10.1	43	42	40-43
401	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	T385	NP_002746	Q02750	PK048-1	RpAb	T	T	T	2	4	9	7	8	KPSS-10.1	43	42	40-43
402	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	T385	NP_002746	Q02750	PK048-2	RpAb	T	T	T	2	4	9	9	10	Custom Only	43	42	40-43
403	MEK1 (MAP2K1)	MAPK/ERK protein-serine kinase 1 (MKK1)	T385	NP_002746	Q02750	PK048-3	RpAb	T	T	T	2	4	10	1	2	Custom Only	43	42	40-43
404	MEK1/2 (MAP2K1/2)	MAPK/ERK protein-serine kinase 1/2 (MKK1/2)	S217+S221, S4	NP_002746	Q02750	PK045-PN007	RpAb	T	T	T	2	4	10	3	4	KPSS-1.3/10.1	43	42	40-43
405	MEK2 (MAP2K2)	MAPK/ERK protein-serine kinase 2 (MKK2)	Pan	AAH00471.1	P36507	NK100-1	MmAb	T	T	T	2	4	10	5	6	KPKS-1.2	44	41	37-43
406	MEK2 (MAP2K2)	MAPK/ERK protein-serine kinase 2 (MKK2)	Pan	AAH00471.1	P36507	NK100-2	RpAb	T	T	T	2	4	10	7	8	Custom Only	44	41	
407	MEK2 (MAP2K2)	MAPK/ERK protein-serine kinase 2 (MKK2)	Pan	AAH00471.1	P36507	NK100-3	RpAb	T	T	T	2	4	10	9	10	Custom Only	44	42	40-43
408	MEK2 (MAP2K2)	MAPK/ERK protein-serine kinase 2 (MKK2) (human)	T394	AAH00471.1	P36507	PK049-2	RpAb	T	F	F	2	4	11	1	2	KPSS-10.1	44	42	40-43
409	MEK2 (MAP2K2)	MAPK/ERK protein-serine kinase 2 (MKK2)	T394	AAH00471.1	P36507	PK049-3					2	4	11	3	4	Custom Only	44	41	
410	MEK2 (MAP2K2)	MAPK/ERK protein-serine kinase 2 (MKK2) (mouse)	T394	NP_075627	P36507	PK050	RpAb	F	T	T	2	4	11	5	6	KPSS-10.1	44	42	40-43
411	MEK3 (MAP2K3)	MAPK/ERK protein-serine kinase 3 (MKK3)	Pan	NP_659732	P46734	NK101-1	RpAb	T	T	T	2	4	11	7	8	Custom Only	36	34	33-37
412	MEK3 (MAP2K3)	MAPK/ERK protein-serine kinase 3 (MKK3)	Pan	NP_659732	P46734	NK101-2	RpAb	T	T	T	2	4	11	9	10	Custom Only	36	34	33-37
413	MEK3 (MAP2K3)	MAPK/ERK protein-serine kinase 3 (MKK3)	S189	NP_659732	P46734	PK127	RpAb	T	T	T	3	1	1	3	4	Custom Only	36	34	33-37
414	MEK3/6 (MAP2K3/6)	MAPK/ERK protein-serine kinase 3/6 (MKK3/6)	S189/S207	NP_002747	P46734	PK051-1	RpAb	T	T	T	3	1	1	5	6	Custom Only	36	35	34-39
415	MEK3/6 (MAP2K3/6)	MAPK/ERK protein-serine kinase 3/6 (MKK3/6)	S189/S207	NP_002747	P46734	PK051-2	RpAb	T	T	T	3	1	1	7	8	Custom Only	36	35	34-39
416	MEK3/6 (MAP2K3/6)	MAPK/ERK protein-serine kinase 3/6 (MKK3/6)	S189/S208			PK051-3	RmAb				3	1	1	9	10	KPSS-1.3	36	35	34-39
417	MEK3b (MAP2K3)	MAPK/ERK protein-serine kinase 3 beta isoform (MKK3 beta)	Pan	NP_659731	P46734	NK102	MmAb	T	T	T	3	1	2	1	2	Custom Only	39		

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418	MEK4 (MAP2K4)	MAPK/ERK protein-serine kinase 4 (MKK4)	Pan	NP_003001	P45985	NK103-1	RpAb	T	T	T	3	1	2	3	4	KPKS-1.2	44	38	34-40
419	MEK4 (MAP2K4)	MAPK/ERK protein-serine kinase 4 (MKK4)	Pan	NP_003001	P45985	NK103-2	RpAb	T	T	T	3	1	2	5	6	Custom Only	44	38	34-40
420	MEK4 (MAP2K4)	MAPK/ERK protein-serine kinase 4 (MKK4)	Pan	NP_003001	P45985	NK103-3	MmAb	T	T	T	3	1	2	7	8	Custom Only	44	38	34-40
421	MEK4 (MAP2K4)	MAPK/ERK protein-serine kinase 4 (MKK4)	S257+T261	NP_003001	P45985	PK052	RpAb	T	T	T	3	1	2	9	10	Custom Only	44	41	37-47
422	MEK4 (MAP2K4)	MAPK/ERK protein-serine kinase 4 (MKK4)	S80	NP_003001	P45985	PK128	RpAb				3	1	3	1	2	Custom Only	44	38	34-40
423	MEK5 (MAP2K5)	MAPK/ERK protein-serine kinase 5 (MKK5)	Pan	NP_660143	Q13163	NK104-1	GpAb	T	T	T	3	1	3	3	4	Custom Only	49	54	52-56
424	MEK5 (MAP2K5)	MAPK/ERK protein-serine kinase 5 (MKK5)	Pan	NP_660143	Q13163	NK104-2	RpAb	T	T	T	3	1	3	5	6	Custom Only	49	54	52-56
425	MEK6 (MAP2K6)	MAPK/ERK protein-serine kinase 6 (MKK6)	Pan	NP_002749	P52564	NK105-1	RpAb	T	T	T	3	1	3	7	8	KPKS-1.2	37+ 31	32	31-36
426	MEK6 (MAP2K6)	MAPK/ERK protein-serine kinase 6 (MKK6)	Pan	NP_002749	P52564	NK105-2	RpAb	T	T	T	3	1	3	9	10	Custom Only	37+ 31	32	31-36
427	MEK6 (MAP2K6)	MAPK/ERK protein-serine kinase 6 (MKK6)	S207	NP_002749	P52564	PK129	RpAb	T	T	T	3	1	4	1	2	Custom Only	37+ 31	32	31-36
428	MEK7 (MAP2K7)	MAPK/ERK protein-serine kinase 7 (MKK7)	Pan	NP_005034	Q14733	NK106-2					3	1	4	3	4	Custom Only	47	40	37-41
429	MEKK1 (MAP3K1)	MAPK/ERK kinase kinase 1	Pan	XP_042066	Q13233	NK107-1	RpAb	T	T	T	3	1	4	5	6	Custom Only	164	98	140-160
430	MEKK1 (MAP3K1)	MAPK/ERK kinase kinase 1	Pan	XP_042066	Q13233	NK107-2	RpAb	T	T	T	3	1	4	7	8	Custom Only	164	98	140-160
431	MEKK1 (MAP3K1)	MAPK/ERK kinase kinase 1	Pan	XP_042066	Q13233	NK107-3	RpAb	T	T	T	3	1	4	9	10	Custom Only	164	98	140-160
432	MEKK1 (MAP3K1)	MAPK/ERK kinase kinase 1	Pan	XP_042066	Q13233	NK107-4					3	1	5	1	2	Custom Only	164	98	140-160
433	MEKK2 (MAP3K2)	MAPK/ERK kinase kinase 2	Pan	NP_006600	Q9Y2U5	NK108	RpAb	T	T	T	3	1	5	3	4	Custom Only	70	86	
434	MEKK4 (MAP3K4)	MAPK/ERK kinase kinase 4	Pan	NP_005913	Q9Y6R4	NK109	RpAb	T	T	T	3	1	5	5	6	Custom Only	182	214	160-180
435	Met	Hepatocyte growth factor (HGF) receptor-tyrosine kinase	Pan	NP_000236	P08581	NK110	RpAb	T	T	T	3	1	5	7	8	Custom Only	156	142	137-141
436	Met	Hepatocyte growth factor (HGF) receptor-tyrosine kinase	Y1003	NP_000236	P08581	PK054-2					3	1	5	9	10	Custom Only	156	142	137-141
437	Met	Hepatocyte growth factor (HGF) receptor-tyrosine kinase	Y1230+Y1234+Y1235	NP_000236	P08581	PK055	RpAb	T	T	T	3	1	6	1	2	Custom Only	156	158	154-178
438	MKP1	MAP kinase phosphatase 1 (CL100, VH1)	Pan	NP_004408	P28562	NP006	RpAb	T	T	T	3	1	6	3	4	KPPS-1.2	39	38	38-42
439	MKP2	MAP kinase phosphatase 2 (VH2)	Pan	NP_001385	Q13115	NP007	MmAb	T	T	T	3	1	6	5	6	KPPS-1.2	43	40	38-43
440	MLC	Myosin regulatory light chain 2, sm	S18	NP_291024	P19105	PN051-1	RpAb	T	T	T	3	1	6	7	8	Custom Only	20	20	17-20
441	MLC	Myosin regulatory light chain 2, sm	S19	NP_291024	P19105	PN051-2	RpAb	T	T	T	3	1	6	9	10	Custom Only	20	20	17-20
442	MLK3	Mixed-lineage protein-serine kinase 3	Pan	NP_002410	Q16584	NK205					3	1	7	1	2	Custom Only	93	133	133-140

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443	MLK3	Mixed-lineage protein-serine kinase 3	T277+S281	NP_002410	Q16584	PK056	RpAb	T	T	T	3	1	7	3	4	Custom Only	93	133	133-140
444	mMOB1	Preimplantation protein 3	Pan	NP_056202	Q9Y3A3	NN132	RpAb	T	T	T	3	1	7	5	6	Custom Only	26		21-24
445	Mn SOD	Manganese superoxide dismutase (SOD2)	Pan	NP_000627	P04179	NN068	RpAb	T	T	T	3	1	7	7	8	Custom Only	25	19	18-22
446	Mnk1	MAP kinase-interacting protein-serine kinase 1 (calmodulin-activated)	T209+T214	NP_003675	Q9BUB5	PK057	RpAb	T	T	T	3	1	7	9	10	Custom Only	47	48	45-48
447	Mnk2	MAP kinase-interacting protein-serine kinase 2 (calmodulin-activated)	Pan	NP_060042	Q9HQB9	NK111	GpAb	T	F	F	3	1	8	1	2	KPKS-1.2	47	53	51-56
448	Mos	Moloney sarcoma oncogene-encoded protein-serine kinase	Pan	NP_005363	P00540	NK112	RpAb	T	T	T	3	1	8	3	4	KPKS-1.2	38	33	31-36
449	MSH2	DNA mismatch repair protein mutS homolog2, colon cancer, nonpolyposis type 1	Pan	NP_000242	P43246	NN069	MmAb	T	T	T	3	1	8	5	6	Custom Only	105	100	91-102
450	Msk1	Mitogen & stress-activated protein-serine kinase 1	S376	NP_004746	Q75582	PK058	RpAb	T	T	T	3	1	8	7	8	KPSS-1.3	90	71+78	66-73 + 74-76
451	MST1	Mammalian STE20-like protein-serine kinase 1 (KRS2)	Pan	NP_006273	Q13043	NK113-1	RpAb	T	T	T	3	1	8	9	10	Custom Only	56	58	49-59
452	MST1	Mammalian STE20-like protein-serine kinase 1 (KRS2)	Pan	NP_006273	Q13043	NK113-2	MmAb	T	T	T	3	1	9	1	2	KPKS-1.2	56	58	56-61
453	Krs2	Mammalian STE20-like protein-serine kinase 1 (KRS2)	Pan	NP_006273	Q13043	NK113-3	GpAb	T	T	T	3	1	9	3	4	Custom Only	56	58	57-61
454	MST2	Mammalian STE20-like protein-serine kinase 2 (KRS1)	Pan	NP_006272	Q13188	NK114	RpAb	T	T	T	3	1	9	5	6	Custom Only	56	52	47-50
455	MST3	Mammalian STE20-like protein-serine kinase 3	Pan	NP_003567	Q9Y6E0	NK115	MmAb	T	T	T	3	1	9	7	8	Custom Only	49		
456	mTOR (FRAP)	Mammalian target of rapamycin	Pan	NP_004949	P42345	NK116	RpAb	T	T	T	3	1	9	9	10	Custom Only	289	197	193-209
457	mTOR (FRAP)	Mammalian target of rapamycin (FRAP)	S2448	NP_004949	P42345	PK116	RmAb	T	T	T	3	1	10	1	2	KPSS-10.1	289	199	193-209
458	MYPT1	Myosin phosphatase target 1	T696	NP_446342	Q14974	PN052	RpAb	T	T	T	3	1	10	3	4	Custom Only	115	141	119-140
459	Nek2	NIMA (never-in-mitosis)-related protein-serine kinase 2	Pan	NP_002488	P51955	NK117-1	RpAb	T	T	T	3	1	10	5	6	Custom Only	52	46+53	48-58
460	Nek2	NIMA (never-in-mitosis)-related protein-serine kinase 2	Pan	NP_002488	P51955	NK117-2	RpAb	T	T	T	3	1	10	7	8	Custom Only	52	46+53	48-58
461	Nek2	NIMA (never-in-mitosis)-related protein-serine kinase 2	Pan	NP_002488	P51955	NK117-3	GpAb	T	T	T	3	1	10	9	10	Custom Only	52	46+53	48-58
462	Nek4	NIMA (never-in-mitosis)-related protein-serine kinase 4	Pan	NP_003148	P51957	NK118	RpAb	T	T	T	3	2	1	3	4	Custom Only	95	102	
463	Nek7	NIMA (never-in-mitosis)-related protein-serine kinase 7	Pan	NP_598001	Q8TDX7	NK119	RpAb	T	T	T	3	2	1	5	6	Custom Only	35	29	
464	NFkappaB p50	NF-kappa-B p50 nuclear transcription factor	Pan	NP_003989	P19838	NN070	RpAb	T	T	T	3	2	1	7	8	Custom Only	~48	121.5+46	45-55 + 100-110
465	NFkappaB p65	NF-kappa-B p65 nuclear transcription factor	Pan	NP_003989	Q04206	NN071	RpAb	T	T	T	3	2	1	9	10	Custom Only	~65	64	60-70
466	NFkappaB p65	NF-kappa-B p65 nuclear transcription factor	S276	NP_003989	Q04206	PN053	RpAb	T	T	T	3	2	2	1	2	Custom Only	64	64	60-70

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467	NIK	NF-kappa beta-inducing kinase	Pan	NP_003945.2	Q99558	NK207	GpAb				3	2	2	3	4	Custom Only	104	104	
468	Nip1	Bcl2/adenovirus E1B 19kD-interacting protein 1	Pan	NP_0011196	Q12981	NN072	MmAb	T	T	T	3	2	2	5	6	Custom Only	31	24	22-26
469	NMDAR2B	N-methyl-D-aspartate (NMDA) glutamate receptor 2B subunit	Y1474	NP_000825	Q13224	PN054	RpAb	T	T	T	3	2	2	7	8	KPSS-12.1	166	166	117-132 + 137-162
470	NME6	Nucleotide diphosphate kinase 6 (nm23-H6)	Pan	NP_005784	Q75414	NN073	RpAb	T	T	F	3	2	2	9	10	Custom Only	21	16	
471	NME7	Nucleotide diphosphate kinase 7 (nm23-H7)	Pan	NP_037462	Q9Y5B8	NN074	RpAb	T	T	T	3	2	3	1	2	Custom Only	42	45	
472	NR1	N-methyl-D-aspartate (NMDA) glutamate receptor 1 subunit zeta	S896	NP_000823	Q05586	PN055	RpAb	T	T	T	3	2	3	3	4	KPSS-1.3/12.1	105	109	106-120
473	Nrf2	Nuclear factor erythroid 2-related factor 2	Pan	NP_006155.2	Q16236	NN140-1	RpAB				3	2	3	5	6	Custom Only	68		
474	Nrf2	Nuclear factor erythroid 2-related factor 2	Pan	NP_006155.2	Q16236	NN140-2	RpAB				3	2	3	7	8	Custom Only	68		
475	NT5E	Ecto-5'-nucleotidase (CD73 antigen)	Pan	NP_002517	P21589	NN075	RpAb	T	T	T	3	2	3	9	10	Custom Only	63	67	68-72
476	p107	Retinoblastoma (Rb) protein-related p107 (PRB1)	Pan	P28749	P28749	NN083	RpAb	T	T	T	3	2	4	1	2	Custom Only	128	107	
477	p16 INK4	p16 INK4a cyclin-dependent kinase inhibitor (MTS1)	Pan	NP_478104	P42771	NN076	MmAb	T	T	T	3	2	4	3	4	Custom Only	17	14	12--16
478	p18 INK4c	p18 INK4c cyclin-dependent kinase inhibitor	Pan	NP_523240	P42773	NN077	RpAb	T	T	T	3	2	4	5	6	Custom Only	18	14	13-17
479	p21 CDK11	cyclin-dependent kinase inhibitor 1 (MDA6)	Pan	NP_000380	P38936	NN078	RpAb	T	T	T	3	2	4	7	8	Custom Only	18	16	15-18
480	p27 Kip1	p27 cyclin-dependent kinase inhibitor 1B	Pan	NP_004055	P46527	NN080	RpAb	T	T	T	3	2	4	9	10	Custom Only	22	25	23-27
481	p27 Kip1	p27 cyclin-dependent kinase inhibitor 1B	S10	NP_004055	P46527	PN056	RpAb	T	T	T	3	2	5	1	2	KPSS-10.1	22	26	21-25
482	p35	CDK5 regulatory subunit 1, p35	Pan	NP_003876	Q15078	NN081-NN120	RpAb	T	T	T	3	2	5	3	4	Custom Only	34	30	28-35
	p25	CDK5 regulatory subunit 1, p25	Pan	NP_003876	Q15078	NN081-NN120	RpAb	T	T	T	3	2	5	3	4	Custom Only	25		18-22
483	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	T180+Y182	NP_001306	Q16539	PK060-1	RpAb	T	T	T	3	2	5	5	6	KPSS-1.3/11.0	41	40+38+36	36-39 + 40-43
484	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	T180+Y182	NP_001306	Q16539	PK060-2	RpAb	T	T	T	3	2	5	7	8	Custom Only	41	40+38+36	36-39 + 40-43
485	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	T180+Y182	NP_001306	Q16539	PK060-3	RpAb	T	T	T	3	2	5	9	10	KPSS-1.3/11.0	41	40+38+36	36-39 + 40-43
486	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	T180+Y182	NP_001306	Q16539	PK060-4	RpAb	T	T	T	3	2	6	1	2	Custom Only	41	40+38+36	36-39 + 40-43
487	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-1	RpAb	T	T	T	3	2	6	3	4	Custom Only	41	38	
488	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-10	RpAb				3	2	6	5	6	Custom Only	41	38	36-41
489	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-11					3	2	6	7	8	Custom Only	41	38	36-41
490	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-2	RpAb	T	T	T	3	2	6	9	10	Custom Only	41	38	33-43

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491	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-3	RpAb	T	T	T	3	2	7	1	2	KPKS-1.2	41	38	36-41
492	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-4	MmAb	T			3	2	7	3	4	Custom Only	41	38	36-41
493	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-5	RpAb	T	T	T	3	2	7	5	6	Custom Only	41	38	36-41
494	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-6	RpAb	T	T	T	3	2	7	7	8	Custom Only	41	38	36-41
495	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-7	MmAb				3	2	7	9	10	Custom Only	41	38	36-41
496	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-8	RpAb				3	2	8	1	2	Custom Only	41	38	36-41
497	p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan	NP_001306	Q16539	NK120-9	RpAb				3	2	8	3	4	Custom Only	41	38	36-41
498	p38d MAPK	Mitogen-activated protein-serine kinase p38 delta (MAPK13)	Pan	NP_002745	Q15264	NK121	RpAb	T	T	T	3	2	8	5	6	Custom Only	42	39	35-40
499	p38g MAPK (Erk6)	Mitogen-activated protein-serine kinase p38 gamma (MAPK12)	Pan	NP_002960	P53778	NK059-1	RpAb	T	T	T	3	2	8	7	8	KPKS-1.2	42	46	38-40
500	p38g MAPK (Erk6)	Mitogen-activated protein-serine kinase p38 gamma (MAPK12)	Pan	NP_002960	P53778	NK059-2	RpAb	T	T	T	3	2	8	9	10	Custom Only	42	46	38-40
501	p53	Tumor suppressor protein p53 (antigenNY-CO-13)	Pan	NP_000537	P04637	NN082	MmAb	T	F	T	3	2	9	1	2	Custom Only	44	49	49-54
502	p53	Tumor suppressor protein p53 (antigenNY-CO-13)	S392	NP_000537	P04637	PN057-1	MmAb	T	T	F	3	2	9	3	4	Custom Only	44	49	46-49
503	p53	Tumor suppressor protein p53 (antigenNY-CO-13)	S392	NP_000537	P04637	PN057-2	RpAb	T	T	F	3	2	9	5	6	KPSS-10.1	44	49	46-49
504	p53	Tumor suppressor protein p53 (antigenNY-CO-13)	S392	NP_000537	P04637	PN057-3	RpAb	T	T	F	3	2	9	7	8	Custom Only	44	49	48-58
505	p73	Tumor suppressor protein p73	Pan	NP_005418	Q15350	NN123	MmAb	T	T	T	3	2	9	9	10	Custom Only	73		
506	PAC1	Dual specificity MAP kinase protein phosphatase	Pan	NP_004409	Q05923	NP008	GpAb	F	T	F	3	2	10	1	2	KPPS-1.2	34	40	41-47
507	PAC1	Protein kinase C + casein kinase substrate in neurons protein 1	Pan	NP_065855	Q9BY11	NN084	RpAb	T	T	T	3	2	10	3	4	Custom Only	51		
508	PAK1	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	Pan	NP_002567	Q13153	NK122-1	RpAb	T	T	T	3	2	10	5	6	KPKS-1.2	61	64	63-69
509	PAK1	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	Pan	NP_002567	Q13153	NK122-2	RpAb	T	T	T	3	2	10	7	8	Custom Only	61	64	63-69
510	PAK1	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	Pan	NP_002567	Q13153	NK122-3					3	2	10	9	10	Custom Only	61	64	63-69
511	PAK1	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	T212	NP_002567	Q13153	PK130	RpAb	T	T	T	3	2	11	1	2	Custom Only	61	64	63-69
512	PAK1/2/3	p21-activated kinase 1/2/3 (serine/threonine-protein kinase PAK 1/2/3)	S144/S141/S154	NP_002567	Q13153	PK061	RpAb	T	T	T	3	2	11	3	4	KPSS-11.0	61/ 58 / 61	58 / 53	51-60

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513	PAK1/2/3	p21-activated kinase 1/2/3 (serine/threonine-protein kinase PAK 1/2/3)	423/402/42	NP_002567	Q13153	PK131	RpAb	T	T	T	3	2	11	5	6	Custom Only	61/ 58 / 61	58 / 53	51-60
514	PAK2	p21-activated kinase 2 (gamma) (serine/threonine-protein kinase PAK 2)	Pan	NP_002568.2	Q13177	NK200	RpAb				3	2	11	7	8	Custom Only	58		51-60
515	PAK3	p21-activated kinase 3 (beta) (serine/threonine-protein kinase PAK 3)	Pan	NP_002569	Q75914	NK123	GpAb	T	T	T	3	2	11	9	10	KPKS-1.2	61	60	58-63
516	PAK5	p21-activated kinase 5 (serine/threonine-protein kinase PAK 7)	Pan	NP_817127	Q9P286	NK190	RpAb	T	T	T	3	3	1	3	4	Custom Only	80	80	
517	PAK6	p21-activated kinase 6 (serine/threonine-protein kinase PAK 6)	Pan	NP_064553	Q9NQJ5	NK124	RpAb	T	T	T	3	3	1	5	6	Custom Only	75	88	85-88
518	PARP1	Poly [ADP-ribose] polymerase 1 (ADPRT)	Pan	NP_001609	P09874	NN085-1	RpAb	T	T	T	3	3	1	7	8	Custom Only	113	21+88+111.5	
519	PARP1	Poly [ADP-ribose] polymerase 1 (ADPRT)	Pan	NP_001609	P09874	NN085-2	RpAb	T	T	T	3	3	1	9	10	Custom Only	113	21+88+111.5	22-24 + 87-89 + 114-116
520	Pax2	Paired box protein 2	S394	Q02962	Q02962	PN058	RpAb	T	T	T	3	3	2	1	2	KPSS-12.1	45	37	36-38 + 37-43
521	Paxillin	Paxillin 1	Pan	NP_002850	P49023	NN086	MmAb	T			3	3	2	3	4	Custom Only	68		
522	Paxillin 1	Paxillin 1	Y31	NP_002850	P49023	PN059	RpAb	T	T	T	3	3	2	5	6	KPSS-12.1	65	70	66-70
523	Paxillin 1	Paxillin 1	Y118	NP_002850	P49023	PN060-1	RpAb	T	T	T	3	3	2	7	8	KPSS-12.1	65	69	66-70
524	Paxillin 1	Paxillin 1	Y118	NP_002850	P49023	PN060-2	RpAb	T	T	T	3	3	2	9	10	Custom Only	65	69	
525	PCK2	Phosphoenolpyruvate carboxykinase	Pan	NP_004554	Q16822	NN113	RpAb	T	T	T	3	3	3	1	2	Custom Only	68	68	
526	PCNA	Proliferating cell nuclear antigen	Pan	NP_002583	P12004	NN087	MmAb	T	T	T	3	3	3	3	4	Custom Only	29	33	32-35
527	PCK1 (PCTAIRE1)	PCTAIRE-1 protein-serine kinase	Pan	NP_148978	Q00536	NK125	RbAb	T	T	T	3	3	3	5	6	Custom Only	56	48	
528	PDGFRa	Platelet-derived growth factor receptor kinase alpha	Y742	NP_006197	P16234	PK062	RpAb	T	T	T	3	3	3	7	8	Custom Only	123	176	165-190
529	PDGFRa	Platelet-derived growth factor receptor kinase alpha	Y754	NP_006197	P16234	PK063	RpAb	T	T	T	3	3	3	9	10	Custom Only	123	180	165-190
530	PDGFRa/b	Platelet-derived growth factor receptor kinase alpha/beta	Y572+Y574/Y579+Y581	NP_006197	P16234	PK064-2	RpAb	T	T	T	3	3	4	1	2	Custom Only	123 / 124	180	165-190
531	PDGFRb	Platelet-derived growth factor receptor kinase beta	Y716	NP_032835	P09619	PK065	RpAb	T	T	T	3	3	4	3	4	Custom Only	123 / 124	180	183-211
532	PDI	Protein disulfide-isomerase	Pan	NP_000909.2	P07237	NN141-1	RpAb				3	3	4	5	6	Custom Only	57		
533	PDI	Protein disulfide-isomerase	Pan	NP_000909.2	P07237	NN141-2	RpAb				3	3	4	7	8	Custom Only	57		
534	PDK1	3-phosphoinositide-dependent protein-serine kinase 1	Pan	NP_002604	O15530	NK126-1	RbAb	T	T	T	3	3	4	9	10	Custom Only	63	59	

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535	PDK1	3-phosphoinositide-dependent protein-serine kinase 1	Pan	NP_002604	Q15530	NK126-2	GpAb	T	T	T	3	3	5	1	2	KPKS-1.2	63	59	48-55
536	PDK1	3-Phosphoinositide-dependent protein-serine kinase 1	S244	NP_002604	Q15530	PK066	RpAb	T	T	T	3	3	5	3	4	KPSS-10.1	63	56/59	58-63
537	PED15 (PEA15)	Phosphoprotein-enriched in diabetes/astrocytes 15	S116	NP_003759	Q15121	PN061	RpAb	T	T	T	3	3	5	5	6	Custom Only	15	12	11--15
538	PERP	p53-induced protein PIGPC1	Pan	NP_071404	Q9H230	NN088	RpAb	T	T	T	3	3	5	7	8	Custom Only	21	30	26-30
539	PI3K	Phosphatidylinositol 3-kinase regulatory subunit alpha	Pan	NP_852664	P27986	NN089	MmAb	T			3	3	5	9	10	Custom Only	85		
540	PI3K p110 delta	Phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta isoform	Pan	NP_005017	O00329	NK191	RpAb	T	T	T	3	3	6	1	2	Custom Only	120	120	100-110
541	PI3KR4	Phosphoinositide-3-kinase, regulatory subunit 4	Pan	NP_055417	Q99570	NN114	RpAb	T	T	T	3	3	6	3	4	Custom Only	150	150	140-160
542	PI4KCB	phosphatidylinositol 4-kinase, catalytic, beta polypeptide	Pan	NP_002642	Q5VWC1	NK192	RpAb	T	T	T	3	3	6	5	6	Custom Only	90	90	
543	PIP5K2a	Phosphatidylinositol 4-phosphatase 5-kinase type 2 alpha	Pan	CAH72211	P48426	NN091	RpAb	T	T	T	3	3	6	7	8	Custom Only	46	44	
544	PKA Ca/b	cAMP-dependent protein-serine kinase catalytic subunit alpha/beta	Pan	NP_002721	P17612	NK127-1	MmAb	T	T	T	3	3	6	9	10	KPKS-1.2	40/ 40	38	35-40
545	PKA Ca/b	cAMP-dependent protein-serine kinase catalytic subunit alpha/beta	Pan	NP_002721	P17612	NK127-2	RpAb	T	T	T	3	3	7	1	2	Custom Only	40/ 40	38	35-40
546	PKA Ca/b	cAMP-dependent protein-serine kinase catalytic subunit alpha/beta	T197	NP_002721	P17612	PK067	RpAb	T	T	T	3	3	7	3	4	KPSS-11.0	40	39	38-40
547	PKA Cb	cAMP-dependent protein-serine kinase catalytic subunit beta	S338	NP_002722	P22694	PK068	RpAb	T	T	T	3	3	7	5	6	KPSS-11.0	40	39	38-40
548	PKA R1a (PKR1)	cAMP-dependent protein-serine kinase type I-alpha regulatory chain	Pan	NP_002725	P10644	NN116	RpAb	T	T	T	3	3	7	7	8	Custom Only	43	43	
549	PKA R2a (PKR2)	cAMP-dependent protein-serine kinase regulatory type 2 subunit alpha	Pan	NP_004148	P13861	NK128	RpAb	T	T	T	3	3	7	9	10	Custom Only	45	46	45-48
550	PKA R2a (PKR2)	cAMP-dependent protein-serine kinase regulatory type 2 subunit alpha	S98	NP_523671	P13861	PK069	RpAb	T	T	T	3	3	8	1	2	Custom Only	45	46	45-48
551	PKA R2b	cAMP-dependent protein-serine kinase regulatory type 2 subunit beta	S114	NP_004148	P31323	PK070	RpAb	T	T	T	3	3	8	3	4	Custom Only	46	38	37-42
552	PKBa (Akt1)	Protein-serine kinase B alpha	Pan	NP_005154	P31749	NK129	MmAb	T	T	T	3	3	8	5	6	KPKS-1.2	56	58	56-60 + 58-63
553	PKBa (Akt1)	Protein-serine kinase B alpha	T308	NP_005154	P31749	PK071-1	RpAb	T	T	T	3	3	8	7	8	Custom Only	56	56/60	57-59
554	PKBa (Akt1)	Protein-serine kinase B alpha	T308	NP_005154	P31749	PK071-2	RpAb	T	T	T	3	3	8	9	10	KPSS-1.3/10.1	56	56/60	57-63
555	PKBa (Akt1)	Protein-serine kinase B alpha	S473	NP_005154	P31749	PK072-1	RpAb	T	T	T	3	3	9	1	2	Custom Only	56	56/59	56-61

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556	PKBa (Akt1)	Protein-serine kinase B alpha	S473	NP_005154	P31749	PK072-3	RpAb	T	T	T	3	3	9	3	4	Custom Only	56	56/59	55-58
557	PKBa (Akt1)	Protein-serine kinase B alpha	S473	NP_005154	P31749	PK072-4	RpAb	T	T	T	3	3	9	5	6	KPSS-1.3/10.1	56	56/59	55-58
558	PKBb (Akt2)	Protein-serine kinase B beta	Pan	NP_001617	P31751	NK130-1	RpAb	T	T	T	3	3	9	7	8	Custom Only	56	56	55-65
559	PKBb (Akt2)	Protein-serine kinase B beta	Pan	NP_001617	P31751	NK130-2	RpAb	T	T	T	3	3	9	9	10	Custom Only	56	56	55-65
560	PKBb (Akt2)	Protein-serine kinase B beta	Pan	NP_001617	P31751	NK130-3	RpAb	T	T	T	3	3	10	1	2	Custom Only	56	56	55-65
561	PKBb (Akt2)	Protein-serine kinase B beta	Pan	NP_001617	P31751	NK130-5	RpAb				3	3	10	3	4	Custom Only	56	56	55-65
562	PKBb (Akt2)	Protein-serine kinase B beta	Pan	NP_001617	P31751	NK130-6					3	3	10	5	6	Custom Only	56	56	55-65
563	PKBg (Akt3)	Protein-serine kinase B gamma	Pan	NP_005456	Q9Y243	NK131-1	RpAb	T	T	T	3	3	10	7	8	Custom Only	56	57	50-60
564	PKBg (Akt3)	Protein-serine kinase B gamma	Pan	NP_005456	Q9Y243	NK131-2	RpAb	T	T	T	3	3	10	9	10	Custom Only	56	57	55-65
565	PKC	Protein-serine kinase C alpha	Pan	NP_002728	P17252	NK201	RpAb				3	4	1	3	4	Custom Only	77	79	73-82
566	PKCa	Protein-serine kinase C alpha	Pan	NP_002728	P17252	NK132	MmAb	T	T	T	3	4	1	5	6	KPKS-1.2	77	79	73-82
567	PKCa	Protein-serine kinase C alpha	S657	NP_002728	P17252	PK073	RpAb	T	T	T	3	4	1	7	8	KPSS-1.3/11.0	77	79	77-84
568	PKCa/b2	Protein-serine kinase C alpha/beta 2	T638/T641	NP_002728	P17252	PK074	RpAb	T	T	T	3	4	1	9	10	KPSS-1.3/11.0	77 / 77	78/80	77-84
569	PKCb1	Protein-serine kinase C beta 1	Pan	NP_002729	P05771	NK133-1	RpAb	T	T	T	3	4	2	1	2	KPKS-1.2	77	79	74-82
570	PKCb1	Protein-serine kinase C beta 1	Pan	NP_002729	P05771	NK133-2	MmAb	T	T	T	3	4	2	3	4	Custom Only	77	79	74-82
571	PKCb1/2	Protein-serine kinase C beta 1/2	T500	NP_997700	P05771	PK075-1	RpAb	T	T	T	3	4	2	5	6	KPSS-11.0	77 / 77	79	76-83
572	PKCb1/2	Protein-serine kinase C beta 1/2	T500	NP_997700	P05771	PK075-2	RpAb	T	T	T	3	4	2	7	8	KPSS-11.0	77 / 77	79	76-83
573	PKCb2	Protein-serine kinase C beta 2	Pan	AAA60095	P05771-2	NK134	RpAb	T	T	T	3	4	2	9	10	Custom Only	77	75	75-80
574	PKCb2	Protein-serine kinase C beta 2	T641	NP_002729	P05771	PK076-2	RpAb	T	T	T	3	4	3	1	2	KPSS-11.0	77	79	75-82
575	PKCb2	Protein-serine kinase C beta 2	T641	AAA60095	P05771-2	PK076-3					3	4	3	3	4	Custom Only	77	75	75-80
576	PKCd	Protein-serine kinase C delta	Pan	NP_006245	Q05655	NK135	RpAb	T	T	T	3	4	3	5	6	KPKS-1.2	77	72	70-74
577	PKCd	Protein-serine kinase C delta	Y313	NP_006245	Q05655	PK077-1	RpAb	T	T	T	3	4	3	7	8	KPSS-11.0	77	74	74-80
578	PKCd	Protein-serine kinase C delta	Y313	NP_006245	Q05655	PK077-2	RpAb	T	T	T	3	4	3	9	10	Custom Only	77	74	74-80
579	PKCd	Protein-serine kinase C delta	T507	NP_006245	Q05655	PK078	RpAb	T	T	T	3	4	4	1	2	KPSS-1.3	77	70+74	74-80
580	PKCd	Protein-serine kinase C delta	S645	NP_006245	Q05655	PK079	RpAb	T	T	T	3	4	4	3	4	Custom Only	77	74	74-80
581	PKCd	Protein-serine kinase C delta	S664	NP_006245	Q05655	PK080	RpAb	T	T	T	3	4	4	5	6	KPSS-11.0	77	74	74-80
582	PKCe	Protein-serine kinase C epsilon	Pan	NP_005391	Q02156	NK136	RpAb	T	T	T	3	4	4	7	8	KPKS-1.2	84	93	88-95 + 93-101
583	PKCe	Protein-serine kinase C epsilon	S729	NP_005391	Q02156	PK081-1	RpAb	T	T	T	3	4	4	9	10	KPSS-1.3/11.0	84	91	88-96

Ab No.	Target Short Name	Full Target Protein Name	Pan or Phospho Site-specific	Refseq	Swissprot Link	Antibody Codes	Ab Type	React. Human	React. Mouse	React. Rat	Meta Row	Meta Col.	Row	Col. 1	Col. 2	Kinetworks Screen	Predicted MW Swissprot	Observed MW Kinetworks	Target Bin Size
584	PKCg	Protein-serine kinase C gamma	Pan	NP_002730	P05129	NK137	RpAb	T	T	T	3	4	5	1	2	KPKS-1.2	78	79	72-80
585	PKCg	Protein-serine kinase C gamma	T514	NP_002730	P05129	PK082-1	RpAb	T	T	T	3	4	5	3	4	Custom Only	78	78/81	74-80
586	PKCg	Protein-serine kinase C gamma	T514	NP_002730	P05129	PK082-2	RpAb	T	T	T	3	4	5	5	6	KPSS-11.0	78	78/81	76-80
587	PKCg	Protein-serine kinase C gamma	T655	NP_002730	P05129	PK083	RpAb	T	T	T	3	4	5	7	8	KPSS-11.0	78	78/81	76-80
588	PKCg	Protein-serine kinase C gamma	T674	NP_002730.1	P05129	PK084	RpAb	T	T	T	3	4	5	9	10	KPSS-11.0	78	78/81	71-79
589	PKCh	Protein-serine kinase C eta	S674	NP_006246	P24723	PK086	RpAb	T	T	T	3	4	6	1	2	KPSS-11.0	78	79	76-84
590	PKCl/i	Protein-serine kinase C lambda/iota	Pan	NP_002731	P41743	NK138	RpAb	T	T	T	3	4	6	3	4	KPKS-1.2	67	60	74-80
591	PKCl/i	Protein-serine kinase C lambda/iota	T555	NP_002731	P41743	PK087	RpAb	T	T	T	3	4	6	5	6	Custom Only	67	79	75-80
592	PKCm (PKD)	Protein-serine kinase C mu (Protein kinase D)	Pan	NP_002733	Q15139	NK142	RpAb	T	T	T	3	4	6	7	8	KPKS-1.2	102	113	106-112 + 110-117
593	PKCm (PKD)	Protein-serine kinase C mu (Protein kinase D)	S738+S742	NP_002733	Q15139	PK092	RpAb	T	T	T	3	4	6	9	10	KPSS-11.0	102	122	129-137
594	PKCm (PKD)	Protein-serine kinase C mu (Protein kinase D)	S910	NP_002733	Q15139	PK093-1	RpAb	T	T	T	3	4	7	1	2	Custom Only	102	122	116-130
595	PKCm (PKD)	Protein-serine kinase C mu (Protein kinase D)	S910	NP_002733	Q15139	PK093-2	RpAb	T	T	T	3	4	7	3	4	KPSS-11.0	102	122	129-137
596	PKC-nu (PKN3)	Protein-serine kinase C nu	Pan	NP_005804	O94806	NK139	RpAb	T	T	T	3	4	7	5	6	Custom Only	100	84	79-84
597	PKCq	Protein-serine kinase C theta	Pan	NP_006248	Q04759	NK140	MmAb	T	T	T	3	4	7	7	8	KPKS-1.2	82	75	69-76
598	PKCq	Protein-serine kinase C theta	T538	NP_006248	Q04759	PK088	RpAb	T	T	T	3	4	7	9	10	Custom Only	82	74	72-76
599	PKCz	Protein-serine kinase C zeta	Pan	NP_002735	Q05513	NK141	RpAb	T	T	T	3	4	8	1	2	KPKS-1.2	68	79	74-84 + 79-86
600	PKCz/l	Protein-serine kinase C zeta/lambda	T410/T403	NP_002735	Q05513	PK091	RpAb	T	T	T	3	4	8	3	4	KPSS-11.0	68 / 67	79	76-83
601	PKG1	Protein-serine kinase G1 (cGMP-dependent protein kinase)	Pan	NP_006249	Q13976	NK143	RpAb	T	T	T	3	4	8	5	6	KPKS-1.2	76 + 79	69	69-74
602	PKG1a	cGMP-dependent protein kinase 1	Pan	NP_006249	Q13976	NK202	RpAb				3	4	8	7	8	Custom Only	78	69	69-74
603	PKG1b	cGMP-dependent protein kinase 1	Pan	NP_006249.1	P14619	NK203	RpAb				3	4	8	9	10	Custom Only	78		69-74
604	PKM2	Pyruvate kinase, isozymes M1/M2	Pan	NP_872270	P14618	NN115	RpAb	T	T	T	3	4	9	1	2	Custom Only	58	58	
605	PKR1	Double stranded RNA dependent protein-serine kinase	Pan	NP_002750	P19525	NK144-1	MmAb	T	T	T	3	4	9	3	4	KPKS-1.2	62	76+70	75-76
606	PKR1	Double-stranded RNA-dependent protein-serine kinase	T451	NP_002750	P19525	PK094-2	RpAb	T	T		3	4	9	5	6	KPSS-1.3/11.0	62	76+69	65-71 + 73-76
607	PKR1	Double-stranded RNA-dependent protein-serine kinase	T446	NP_002750	P19525	PK132	RpAb	T	T	T	3	4	9	7	8	Custom Only	62	76+70	75-76
608	PLCg1	1-phosphatidylinositol-4,5-bisphosphatase	Y783	NP_877963.1	P19174	NN144	RpAb				3	4	9	9	10	Custom Only	150		
609	PLCg2	1-phosphatidylinositol-4,5-bisphosphatase	Y753	NP_002652.2	P16885	NN143	RpAb				3	4	10	1	2	Custom Only	150		

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610	PIK1	Polo-like protein-serine kinase 1	Pan	NP_005021	P53350	NK145	MmAb	T	T	T	3	4	10	3	4	Custom Only	68	51	49-55
611	PIK1	Polo-like protein-serine kinase 1	T210	NP_005021	P53350	PK117	RpAb	T	T	T	3	4	10	5	6	Custom Only	68	68	63-73
612	PIK2 (SNK)	Polo-like protein kinase 2 (serum - inducible kinase (SNK))	Pan	NP_006613	Q9NYY3	NK146	RpAb	T	T	T	3	4	10	7	8	Custom Only	78	69	66-70
613	PIK3 (CNK)	Polo-like protein kinase 3 (cytokine- inducible kinase (CNK))	Pan	NP_004064	Q9H4B4	NK147	RpAb	T	T	T	3	4	10	9	10	Custom Only	72	69	67-70
614	PP1/Ca (PP1a)	Protein-serine phosphatase 1 - catalytic subunit - alpha isoform	Pan	NP_002699	P62136	NP009-1	RpAb	T	T	T	3	4	11	1	2	KPPS-1.2	38	34	31-36
615	PP1/Ca (PP1a)	Protein-serine phosphatase 1 - catalytic subunit - alpha isoform	Pan	NP_002699	P62136	NP009-2	RpAb	T	T	T	3	4	11	3	4	Custom Only	38		
616	PP1/Ca (PP1a)	Protein-serine phosphatase 1 - catalytic subunit - alpha isoform	T320	NP_002699	P62136	PP001	RpAb	T	T	T	3	4	11	5	6	Custom Only	38	35	31-36
617	PP1/Cb (PP1b)	Protein-serine phosphatase 1 - catalytic subunit - beta isoform	Pan	NP_002700	P62140	NP010-1	RpAb	T	T	T	3	4	11	7	8	KPPS-1.2	37	34	30-35
618	PP1/Cb (PP1b)	Protein-serine phosphatase 1 - catalytic subunit - beta isoform	Pan	NP_002700	P62140	NP010-2	RpAb	T	T	T	3	4	11	9	10	Custom Only	37		
619	PP1/Cg (PP1g1)	Protein-serine phosphatase 1 - catalytic subunit - gamma isoform	Pan	NP_002701	P36873	NP011	RpAb	T	T	T	4	1	1	3	4	KPPS-1.2	37	33	29-34
620	PP2A B' (B56)	Protein-serine phosphatase 2A - B regulatory subunit - B56 alpha isoform	Pan		Q15172	NP033	RpAb	T	T	T	4	1	1	5	6	KPPS-1.3	56		
621	PP2A/Aa/b	Protein-serine phosphatase 2A - A regulatory subunit - alpha and beta isoforms	Pan	NP_002707	P30153	NP012-1	RpAb	T	T	T	4	1	1	7	8	KPPS-1.2	65	50	48-56
622	PP2A/Aa/b	Protein-serine phosphatase 2A - A regulatory subunit - alpha and beta isoforms	Pan	NP_002707	P30153	NP012-2	RpAb	T	T	T	4	1	1	9	10	Custom Only	65	50	48-56
623	PP2A/Bb	Protein-serine phosphatase 2A - B regulatory subunit - beta isoform	Pan		Q00005	NP035	RpAb	T	T	T	4	1	2	1	2	Custom Only	52		
624	PP2A/Bg2	Protein-serine phosphatase 2A - B regulatory subunit - gamma isoform	Pan		Q9Y2T4	NP032	RpAb	T	T	T	4	1	2	3	4	KPPS-1.3	56		
625	PP2A/Ca	Protein-serine phosphatase 2A - catalytic subunit alpha isoform	Pan	NP_002706	P67775	NP013-NP014	MmAb	T	T	T	4	1	2	5	6	KPPS-1.2	36	33	31-35
	PP2A/Ca	Protein-serine phosphatase 2A - catalytic subunit beta isoform	Pan	NP_004147	P62714	NP013-NP014	MmAb	T	T	T	4	1	2	5	6	KPPS-1.2	36	31	29-33
626	PP2B/Aa	Protein-serine phosphatase 2B - catalytic subunit - alpha isoform	Pan	NP_000935	Q08209	NP015	RpAb	T	T	T	4	1	2	7	8	KPPS-1.2	59	55	52-59
627	PP2Cab	Protein-serine phosphatase 2C - catalytic subunit - alpha isoform	Pan	NP_066283	P35813	NP016-NP031	RpAb	T	T	T	4	1	2	9	10	KPPS-1.2	42	44	43-45
	PP2Cab	Protein-serine phosphatase 2C - catalytic subunit - beta isoform	Pan	NP_808907	Q75688	NP016-NP031	RpAb	T	T	T	4	1	2	9	10	KPPS-1.2	52	48	46-50
628	PP2Cd	Protein-serine phosphatase 2C - catalytic subunit - delta isoform	Pan	NP_110395	Q15297	NP018	MmAb	T	T	T	4	1	3	1	2	KPPS-1.2	67	41.5+45.5	40-47
629	PP4/A'2	Protein-serine phosphatase 4 - regulatory subunit (PPX/A'2)	Pan	NP_005125	Q8TF05	NP019	RmAb	T	T	T	4	1	3	3	4	KPPS-1.2	107	116	107-125

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630	PP4C	Protein-serine phosphatase X - catalytic subunit (PPX/C)	Pan	NP_002711	P60510	NP020-1	RpAb	T	T	T	4	1	3	5	6	KPPS-1.2	35	33	30-34
631	PP4C (X/C)	Protein-serine phosphatase X - catalytic subunit (PPX/C)	Pan	NP_002711	P60510	NP020-2	RpAb	T	T	T	4	1	3	7	8	Custom Only	35	33	30-34
632	PP5C/PPT	Protein-serine phosphatase 5 - catalytic subunit (PPT)	Pan	NP_006238	P53041	NP021-1	MmAb	T	T	T	4	1	3	9	10	KPPS-1.2	57	50	47-53
633	PP5C/PPT	Protein-serine phosphatase 5 - catalytic subunit (PPT)	Pan	NP_006238	P53041	NP021-2	RpAb	T			4	1	4	1	2	Custom Only	57	50	47-53
634	PP6C (V/C)	Protein-serine phosphatase 6 - catalytic subunit (PPVC)	Pan	NP_002712	Q00743	NP022-1	RpAb	T	T	T	4	1	4	3	4	KPPS-1.2	35	28+30.5	26-30 + 29-33
635	PP6C (V/C)	Protein-serine phosphatase 6 - catalytic subunit (PPVC)	Pan	NP_002712	Q00743	NP022-2	RpAb	T	T	T	4	1	4	5	6	Custom Only	35	28+30.5	26-30 + 29-33
636	PRAS40	Proline-rich Akt substrate 40 kDa (Akt1S1)	T246	NP_115751	Q96B36	PN062	RpAb	T	T	T	4	1	4	7	8	KPSS-12.1	27	44	40-45
637	PRK1 (PKN1)	Protein kinase C-related protein-serine kinase 1	Pan	NP_002732	Q16512	NK148	GpAb	T	T	T	4	1	4	9	10	Custom Only	104	143	107-129
638	PRK1 (PKN1)	Protein kinase C-related protein-serine kinase 1	T774/T816	NP_002732	Q16512	PK095- PK096	RpAb	T	T	T	4	1	5	1	2	KPSS-11.0	104	126	107-120
	PRK2 (PKN2)	Protein kinase C-related protein-serine kinase 2	T774/T816	NP_006247	Q16512	PK095- PK096	RpAb	T	T	T	4	1	5	1	2	KPSS-11.0	112	135	120-135
639	PRK2 (PKN2)	Protein kinase C-related protein-serine kinase 2	Pan	NP_006247	Q16513	NK149	RpAb	T	T	T	4	1	5	3	4	Custom Only	112	150	144-154
640	PRKAB1	5'-AMP-activated protein kinase (AMPK), beta-1 regulatory subunit	Pan	NP_006244	Q9Y478	NK150	RpAb	T	T	T	4	1	5	5	6	Custom Only	30	22	25-30
641	PRKWINK4	Putative protein-serine kinase WNK4	Pan	NP_115763	Q96J92	NK151	RpAb	T	T	T	4	1	5	7	8	Custom Only	135		
642	Progesterone Receptor	Progesterone receptor	S294	NP_000917	P06401	PN104	MmAb	T	T	T	4	1	5	9	10	Custom Only	100	100	-95 + 110-1
643	PRP4K (PRP4)	Protein-serine kinase PRP4 homolog	Pan	NP_003904	Q13523	NK152	RpAb	T	T	T	4	1	6	1	2	Custom Only	117	120	
644	PSD-95	Disks large homolog 4	Pan	NP_001356.1	P78352	NN142	MmAb				4	1	6	3	4	Custom Only	100		
645	PSTAIR		Pan			NK204	RpAb				4	1	6	5	6	Custom Only	25		
646	PTEN	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and protein phosphatase and tensin homolog deleted on chromosome 10	Pan	NP_000305	P60484	NP023	MmAb	T	T	T	4	1	6	7	8	KPPS-1.2	47	54	53-59
647	PTEN	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and protein phosphatase and tensin homolog deleted on chromosome 10	S380+S382+S385	NP_000305	P60484	PP003	RpAb	T	T	T	4	1	6	9	10	KPSS-10.1	47	55	52-56
648	PTP1B	Protein-tyrosine phosphatase 1B	Pan	NP_002818	P18031	NP024	MmAb	T	T	T	4	1	7	1	2	KPPS-1.2	50	44	42-45
649	PTP1C	Protein-tyrosine phosphatase 1C (SHP1, SHPTP1)	Pan	NP_002822	P29350	NP025	MmAb	T	T	T	4	1	7	3	4	KPPS-1.2	68	56	51-61
650	PTP1D/SHP2	Protein-tyrosine phosphatase 1D (SHP2, SHPTP2, Syp, PTP2C)	Pan	NP_002825	Q06124	NP026-1	MmAb	T	T	T	4	1	7	5	6	KPPS-1.2	68	67	61-72

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651	PTP1D/SHP2	Protein-tyrosine phosphatase 1D (SHP2, SHPTP2, Syp, PTP2C)	Pan	NP_002825	Q06124	NP026-2	RpAb	T			4	1	7	7	8	Custom Only	68	67	61-72
652	PTP1D/SHP2	Protein-tyrosine phosphatase non-receptor type 21	Pan		Q16825	NP036	RpAb	T			4	1	7	9	10	Custom Only	133		
653	PyDK2 (PDHK2)	Pyruvate dehydrogenase kinase isoform 2	Pan	NP_002602	Q15119	NK153	RpAb	T	T	T	4	1	8	1	2	Custom Only	46	43	
654	PyDK2 (PDHK2)	Pyruvate dehydrogenase kinase isoform 2	Pan	NP_002602	Q15119	NK153	RpAb	T	T	T	4	1	8	3	4	Custom Only	46	43	
655	Pyk2	Protein-tyrosine kinase 2	Pan	NP_004094	Q14289	NK154	GpAb	T	T	T	4	1	8	5	6	KPKS-1.2	116	103	110-113
656	PYK2	Protein-tyrosine kinase 2	Y579	NP_004094	Q14289	PK097-3					4	1	8	7	8	Custom Only	116	103	110-113
657	Pyk2	Protein-tyrosine kinase 2	Y579	NP_775268	Q14289	PK097-2	RpAb	T	T	T	4	1	8	9	10	KPSS-11.0	116	122	124-128
658	Rab5	Ras-related protein Rab-5A		NP_004153.2	P20339	NN150	RpAb				4	1	9	1	2	Custom Only	24		
659	Rac1	Ras-related C3 botulinum toxin substrate 1	Pan	NP_001782	P60953	NN092-1	MmAb	T	T	T	4	1	9	3	4	Custom Only	21	21	20-22
660	Rac1	Ras-related C3 botulinum toxin substrate 1	Pan	NP_001782	P60953	NN092-2					4	1	9	5	6	Custom Only	21	21	20-22
661	Rac1/cdc42	Ras-related C3 botulinum toxin substrate 1	S71	NP_008839	P60953	PN063-2	RpAb	T	T	T	4	1	9	7	8	KPSS-12.1	21	21	20-22
662	Rad17	Rad17 homolog	S645	NP_579921	O75943	PN064	RpAb	T	T		4	1	9	9	10	KPSS-12.1	77	58+64+68	47-50 + 55-57 + 58-60 + 62-68
663	Raf1	Raf1 proto-oncogene-encoded protein-serine kinase	Pan	NP_002871	P04049	NK155-1	RpAb	T	T	T	4	1	10	1	2	KPKS-1.2	73	68+75.5	65-73 + 69-78
664	Raf1	Raf1 proto-oncogene-encoded protein-serine kinase	Pan	NP_002871	P04049	NK155-2	RpAb	T	T	T	4	1	10	3	4	Custom Only	73	68+75.5	65-73 + 69-78
665	Raf1	Raf1 proto-oncogene-encoded protein-serine kinase	S259	NP_002871	P04049	PK098	RpAb	T	T	T	4	1	10	5	6	KPSS-1.3/10.1	84	63+68	60-62 + 63-70
666	RafA (Araf)	A-Raf proto-oncogene serine/threo	Pan	NP_001645.1	P10398	NK205	RpAb	T	T	T	4	1	10	7	8	Custom Only	68		
667	RafB (Braf)	RafB proto-oncogene-encoded protein-serine kinase	Pan	NP_004324	P15056	NK156-1	RpAb	T	T	T	4	1	10	9	10	KPKS-1.2	84	88	93-98
668	RafB (Braf)	RafB proto-oncogene-encoded protein-serine kinase	Pan	NP_004324	P15056	NK156-2	RpAb				4	2	1	3	4	Custom Only	84	88	93-98
669	Rb	Retinoblastoma-associated protein 1	Pan	NP_000312	P06400	NN093	MmAb	T	T	T	4	2	1	5	6	Custom Only	106	95	93-106
670	Rb	Retinoblastoma-associated protein 1	T356	NP_000312	P06400	PN065	RpAb	T	T	T	4	2	1	7	8	KPSS-10.1	106	127	113-130
671	Rb	Retinoblastoma-associated protein 1	S612	NP_000312	P06400	PN066	RpAb	T	T	T	4	2	1	9	10	KPSS-10.1	106	127	113-130
672	Rb	Retinoblastoma-associated protein 1	S780	NP_000312	P06400	PN067	RpAb	T	T	T	4	2	2	1	2	KPSS-1.3/10.1	106	127	113-130
673	Rb	Retinoblastoma-associated protein 1	S807	NP_000312	P06400	PN068	RpAb	T	T	T	4	2	2	3	4	KPSS-10.1	106	127	113-130
674	Rb	Retinoblastoma-associated protein 1	S807+S811	NP_000312	P06400	PN069	RpAb	T	T	T	4	2	2	5	6	KPSS-1.3/10.1	106	127	113-130

Ab No.	Target Short Name	Full Target Protein Name	Pan or Phospho Site-specific	Refseq	Swiss-prot Link	Antibody Codes	Ab Type	React. Human	React. Mouse	React. Rat	Meta Row	Meta Col.	Row	Col. 1	Col. 2	Kinetworks Screen	Predicted MW Swissprot	Observed MW Kinetworks	Target Bin Size
675	Rb	Retinoblastoma-associated protein 1	T821	NP_000312	P06400	PN070	RpAb	T	T	T	4	2	2	7	8	KPSS-10.1	106	127	113-130
676	Rb	Retinoblastoma-associated protein 1	T826	NP_000312	P06400	PN071	RpAb	T	T	T	4	2	2	9	10	KPSS-10.1	106	127	113-130
677	Rb	Retinoblastoma-associated protein 1	S608	NP_000312	P06400	PN113	MmAb	T	T		4	2	3	1	2	Custom Only	106	127	113-130
678	Ret	Ret receptor-tyrosine kinase	S696	NP_065681	P07949	PN072	RpAb	T	T	T	4	2	3	3	4	Custom Only	124	186	165-175
679	RIP2/RICK	Receptor-interacting serine/threonine-protein kinase 2 (RIPK2)	Pan	NP_003812	Q43353	NK157	MmAb	T			4	2	3	5	6	Custom Only	61		
680	RIPK	Receptor-interacting protein-serine kinase 1	Pan	NP_003795	Q13546	NK158	MmAb	T	T	T	4	2	3	7	8	Custom Only	76	90	
681	ROKa (ROCK2)	RhoA protein-serine kinase alpha	Pan	NP_004841	Q75116	NK159-1	MmAb	T	T	T	4	2	3	9	10	KPKS-1.2	161	155	149-163
682	ROKa (ROCK2)	RhoA protein-serine kinase alpha	Pan	NP_004841	Q75116	NK159-2	RpAb	T	T	T	4	2	4	1	2	Custom Only	161	155	149-163
683	ROKb (ROCK1)	RhoA protein-serine kinase beta	Pan	NP_005397	Q13464	NK160	MmAb	T	T	T	4	2	4	3	4	Custom Only	158		
684	RONa	Macrophage-stimulating protein receptor alpha chain	Pan	NP_002438	Q04912	NK161	MmAb	T			4	2	4	5	6	Custom Only	40		
685	ROR2 (RON2)	ROR2 neurotrophic receptor-tyrosine kinase	Pan	NP_004551	Q01974	NK162	RpAb	T	T		4	2	4	7	8	Custom Only	105	109	
686	ROS	Orosomucoid 1 receptor-tyrosine kinase	Pan	NP_002935	P08922	NK163	RpAb	T	T	T	4	2	4	9	10	Custom Only	264	220	240-270
687	RSK1	Ribosomal S6 protein-serine kinase 1	Pan	NP_002944	Q15418	NK164-1	RpAb	T	T	T	4	2	5	1	2	KPKS-1.2	83	79	72-84 + 79-88
688	RSK1	Ribosomal S6 protein-serine kinase 1	Pan	NP_002944	Q15418	NK164-2					4	2	5	3	4	Custom Only	83	79	72-84 + 79-88
689	RSK1	Ribosomal S6 protein-serine kinase 1	S363	NP_002944	Q15418	PK137					4	2	5	5	6	Custom Only	83	79	72-84 + 79-88
690	RSK1/2	Ribosomal S6 protein-serine kinase 1/2	S221/S227	NP_002944	Q15418	PK099	RpAb	T	T	T	4	2	5	7	8	KPSS-10.1	83 / 84	89+78+70	75-78 + 79-83 + 87-90 + 91-93
691	RSK1/2	Ribosomal S6 protein-serine kinase 1/2	S363/S369	NP_002944	Q15418	PK100-2	RpAb	T	T	T	4	2	5	9	10	KPSS-10.1	83 / 84	89+78+70	75-78 + 79-83 + 87-90 + 91-93
692	RSK1/2	Ribosomal S6 protein-serine kinase 1/2	S380/S386	NP_002944	Q15418	PK101-1	RpAb	T	T	T	4	2	6	1	2	Custom Only	83 / 84	89+78+70	83-89 + 87-90
693	RSK1/2	Ribosomal S6 protein-serine kinase 1/2	S380/S386	NP_002944	Q15418	PK101-2	RpAb	T	T	T	4	2	6	3	4	KPSS-10.1	83 / 84	89+78+70	75-78 + 79-83 + 87-90 + 91-93
694	RSK1/2/3	Ribosomal S6 protein-serine kinase 1/2/3	T573/T577	NP_002944	Q15418	PK102	RpAb	T	T	T	4	2	6	5	6	Custom Only	83 / 84	89+78+70	84-88 + 87-90
695	RSK1/3	Ribosomal S6 protein-serine kinase 1/3	T359+S363/T356+S360	NP_002944	Q15418	PK103	RpAb	T	T	T	4	2	6	7	8	KPSS-1.3	83 / 84	89+78+70	79-83 + 87-90
696	RSK2	Ribosomal S6 protein-serine kinase 2	Pan	NP_004577	P51812	NK165	RpAb	T	T	T	4	2	6	9	10	KPKS-1.2	84	74	69-78 + 75-83

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697	RSK4	Ribosomal S6 protein-serine kinase 4 (alpha 6)	Pan	NP_055311	Q9UK32	NK166	RpAb	T	T	T	4	2	7	1	2	Custom Only	84	89	88-92
698	RYK	RYK tyrosine-protein kinase	Pan	P34925	P34925	NK167	RpAb	T	T	T	4	2	7	3	4	Custom Only	68	61	56-60
699	S6	40S ribosomal protein S6	S235	NP_001001	P62753	PN073	RpAb	T	T	T	4	2	7	5	6	KPSS-10.1	29	38	24-27
700	S6Ka (p70 S6Ka)	p70 ribosomal protein-serine S6 kinase alpha	Pan	NP_003152	P23443	NK168-NK169-1	MmAb	T	T	T	4	2	7	7	8	KPKS-1.2	56	69	60-72
701	S6Ka (p70/p85 S6Ka)	p70/p85 ribosomal protein-serine S6 kinase alpha	Pan	NP_003152	P23443	NK168-NK169-2	RpAb				4	2	7	9	10	Custom Only	56+85	69+80	(60-72) + (78-83)
	S6Kb (p70 S6Kb)	p70 ribosomal protein-serine S6 kinase beta	Pan	NP_003943	Q9UBS0	NK168-NK169-2	MmAb	T	T	T							53	58	57-61
702	S6Ka (p70/p85 S6Ka)	p70/p85 ribosomal protein-serine S6 kinase alpha	T229	NP_003152	P23443	PK104	RpAb	T	T	T	4	2	8	1	2	KPSS-10.1	56+85	69+80	(60-72) + (78-83)
703	S6Ka (p70/p85 S6Ka)	p70/p85 ribosomal protein-serine S6 kinase alpha	T421+S424	NP_003152	P23443	PK105	RpAb	T	T	T	4	2	8	3	4	KPSS-10.1	56+85	69+80	(60-72) + (78-83)
704	S6Ka (p70/p85 S6Ka)	p70/p85 ribosomal protein-serine S6 kinase alpha	T389	NP_003152	P23443	PK106	RpAb	T	T	T	4	2	8	5	6	KPSS-1.3	56+85	69+80	(60-72) + (78-83)
705	S6Kb (p70 S6Kb)	p70 ribosomal protein-serine S6 kinase beta	Pan	NP_003943	Q9UBS0	NK169	RpAb	T	T	T	4	2	8	7	8	Custom Only	53	58	48-52
706	SG2NA	Striatin-3	Pan		Q13033	NN133	RpAb	T	T	T	4	2	8	9	10	Custom Only	87		
707	SGK3	Serum/glucocorticoid regulated kinase 3	Pan	NP_037389.4	Q96BR1	NK170	RpAb	T	T	T	4	2	9	1	2	Custom Only	49	64	51-57
708	Shc1	SH2 domain-containing transforming protein 1	Y349+Y350	NP_003020	P29353	PN074-2	RpAb	T	T		4	2	9	3	4	KPSS12.1	63	68+49	45-48 + 47-52 + 64-71
709	Shc	SH2 domain-containing transforming protein 1	Y239	NP_003020	P29353	PN124					4	2	9	5	6	Custom Only	63	68+49	45-48 + 47-52 + 64-71
710	SHP2	Protein-tyrosine phosphatase 1D (SHPTP2, Syp, PTP2C)	S576	NP_002825	Q06124	PP004	RpAb	T	T	T	4	2	9	7	8	Custom Only	68	48+70	65-75
711	SIRPa	Tyrosine-protein phosphatase non-receptor tyrosine phosphatase 11		NP_001035111	P78324	NN148					4	2	9	9	10	Custom Only	55		
712	SLK	STE20-like protein-serine kinase	Pan	NP_055535	Q9H2G2	NK171	RpAb	T	T	T	4	2	10	1	2	Custom Only	143	137	136-140
713	Smac/DIABLO	Second mitochondria-derived activator of caspase	Pan	NP_620308	Q9NR28	NN095	RpAb	T	T	T	4	2	10	3	4	Custom Only	27	19	20-24
714	Smad1/5/9	SMA- and mothers against decapentaplegic homologs 1/5/9	S463+S465/S463+S465/S465+S467	NP_005891	Q15797	PN075	RpAb	T	T	T	4	2	10	5	6	KPSS-1.3	52 / 52 / 52	65	61-65
715	Smad2	SMA- and mothers against decapentaplegic homolog 2	S465+S467	IP_00100365	Q15796	PN076	RpAb	T	T	T	4	2	10	7	8	Custom Only	52	53	53-63
716	Smad2/3	SMA- and mothers against decapentaplegic homolog 2/3	Pan	NP_005892	Q15796	NN096	MmAb	T			4	2	10	9	10	Custom Only	58		

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717	SMC1	Structural maintenance of chromos	S957	NP_006297.2	Q14683	PN125					4	2	11	1	2	Custom Only	143		
718	SOCS2	Suppressor of cytokine signaling 2		NP_003868.1	Q14508	NN145					4	2	11	3	4	Custom Only	22		
719	SOCS4	Suppressor of cytokine signalling 4 (SOCS7)	Pan	NP_543143	Q8WXH5	NN097	RpAb	T	T	T	4	2	11	5	6	Custom Only	51	54	52-58
720	SOD (Cu/Zn)	Superoxide dismutase 1	Pan	NP_000445	Q6ND84	NN098	RpAb	T	T	T	4	2	11	7	8	Custom Only	16	16	12--17
721	SOD (Mn)	Superoxide dismutase [Mn], mitochondrial IPrecursor]	Pan	NP_000627.2	P04179	NN151	RpAb				4	2	11	9	10	Custom Only	25		
722	SODD	Silencer of death domains (Bcl2 associated athanogene 4 (BAG4))	Pan	NP_004865	Q95429	NN099	RpAb	T	T	T	4	3	1	3	4	Custom Only	50	75	64-77
723	SOX9	SRY (sex determining region Y)-box 9 (campomelic dysplasia, autosomal sex-reversal)	S181	NP_000337	P48436	PN077	RpAb	T	T	T	4	3	1	5	6	KPSS-12.1	56	48	45-48
724	SPHK1	Sphingosine kinase 1	Pan	NP_892010	Q9NYA1	NN100	RpAb	T	T	T	4	3	1	7	8	Custom Only	43	43	
725	SPHK2	Sphingosine kinase 2	Pan	NP_064511	Q9NRA0	NN101	RpAb	T	T	T	4	3	1	9	10	Custom Only	69	55	
726	Src	Src proto-oncogene-encoded protein-tyrosine kinase	Pan	NP_005408	P12931	NK172-1	MmAb	T	T	T	4	3	2	1	2	KPKS-1.2	60	48	45-50
727	Src	Src proto-oncogene-encoded protein-tyrosine kinase	Pan	NP_005408	P12931	NK172-2	RpAb				4	3	2	3	4	Custom Only	60	48	45-50
728	Src	Src proto-oncogene-encoded protein-tyrosine kinase	Y418	NP_005408	P12931	PK107	RpAb	T	T	T	4	3	2	5	6	KPSS-1.3/10.1	60	48	45-50
729	Src	Src proto-oncogene-encoded protein-tyrosine kinase	Y529	NP_005408	P12931	PK108	RpAb	T	T	T	4	3	2	7	8	KPSS-1.3/10.1	60	48	45-50
730	STAT1	Signal transducer and activator of transcription 1	S727	NP_009330	P42224	PN078	RpAb	T	T	T	4	3	2	9	10	Custom Only	87	83	78-85 + 87-90
731	STAT1	Signal transducer and activator of transcription 1	Y701	NP_009330	P42224	PN079	RpAb	T	T	T	4	3	3	1	2	KPSS-1.3	87	86	78-85 + 87-90
732	STAT1a	Signal transducer and activator of transcription 1 alpha	Pan	NP_009330	P42224	NN102-NN124	RpAb	T	T	T	4	3	3	3	4	Custom Only	87	88	86-96
	STAT1b	Signal transducer and activator of transcription 1 beta	Pan	NP_009330	P42224	NN102-NN124	RpAb	T	T	T	4	3	3	3	4	Custom Only			79-89
733	STAT1a/b	Signal transducer and activator of transcription 1 alpha	Pan	NP_009330	P42224	NN139	RpAb				4	3	3	5	6	Custom Only	87	86	78-85 + 87-90
734	STAT2	Signal transducer and activator of transcription 2	Pan	NP_005410	P52630	NN103	RpAb	T	T	T	4	3	3	7	8	Custom Only	98	113	79-88
735	STAT2	Signal transducer and activator of transcription 2	Y690	NP_005410	P52630	PN080	RpAb	T	T	T	4	3	3	9	10	Custom Only	98	113	79-88
736	STAT3	Signal transducer and activator of transcription 3 (acute phase response factor)	Pan	NP_003141	P40763	NN104	RpAb	T	T	T	4	3	4	1	2	Custom Only	88	81	87-97
737	STAT3	Signal transducer and activator of transcription 3	S727	NP_003141	P40763	PN081-2	RpAb	T	T	T	4	3	4	3	4	KPSS-1.3/12.1	88	81	79-88
738	STAT3	Signal transducer and activator of transcription 3	Y705	NP_003141	P40763	PN082	RmAb	T	T	T	4	3	4	5	6	KPSS-12.1	88	81	78-84
739	STAT4	Signal transducer and activator of transcription 4 (acute phase response factor)	Pan	NP_003142	Q14765	NN117	RpAb	T	T	T	4	3	4	7	8	Custom Only	86	86	

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740	STAT5A	Signal transducer and activator of transcription 5A	Pan	NP_003143	P42229	NN105	RpAb	T	T	T	4	3	4	9	10	Custom Only	91	93	91-97
741	STAT5A	Signal transducer and activator of transcription 5A	Y694	NP_003143	P42229	PN083	RpAb	T	T	T	4	3	5	1	2	KPSS-1.3	91	93	91-97
742	STAT5A	Signal transducer and activator of transcription 5A	S780	NP_003143	P42229	PN119	RpAb	T	T	T	4	3	5	3	4	Custom Only	91	93	91-97
743	STAT5B	Signal transducer and activator of transcription 5B	Pan	NP_036580	P51692	NN106	RpAb	T	T	T	4	3	5	5	6	Custom Only	90	86	
744	STAT6	Signal transducer and activator of transcription 6	Pan	NP_003144	P42226	NN107	RpAb	T	T	T	4	3	5	7	8	Custom Only	94	85	
745	STI1	Stress induced phosphoprotein 1 (Hsc70/Hsp90 organizing protein (Hop))	Pan	NP_006810	P31948	NN108	MmAb	T	T	T	4	3	5	9	10	Custom Only	63	59	57-61
746	STK33	FLJ35932 protein-serine kinase	Pan	NP_112168	Q8NEF5	NK173	RpAb	T	T	T	4	3	6	1	2	Custom Only	58	49	
747	Striatin	Striatin	Pan	NP_003153.2	O43815	NN134	RpAb	T	T	T	4	3	6	3	4	Custom Only	86,80		
748	Syk	Spleen protein-tyrosine kinase	Pan	NP_003168	P43405	NK174	MmAb	T	T	T	4	3	6	5	6	KPKS-1.2	72	71	65-68
749	Synapsin 1	Synapsin 1 isoform Ia	S9	NP_008881	P17600	PN084	RpAb	T	T	T	4	3	6	7	8	KPSS-12.1	74	73	76-79
750	Synapsin 1	Synapsin 1 isoform Ia	S603	NP_008881	P17600	PN111	RpAb	T	T	T	4	3	6	9	10	Custom Only	74	73	73-83
751	TAK1	TGF-beta-activated protein-serine kinase 1	Pan	NP_663306	O43318	NK175-1	RpAb	T	T	T	4	3	7	1	2	Custom Only	67	69	66-69 + 74-77
752	TAK1	TGF-beta-activated protein-serine kinase 1	Pan	NP_663306	O43318	NK175-2	RpAb	T	T	T	4	3	7	3	4	Custom Only	67	69	65-75
753	TAK1	TGF-beta-activated protein-serine kinase 1	Pan	NP_663306	O43318	NK175-3	RpAb				4	3	7	5	6	Custom Only	67	69	65-75
754	TAK1	TGF-beta-activated protein-serine kinase 1	Pan	NP_663306	O43318	NK175-4	RpAb				4	3	7	7	8	Custom Only	67	69	65-75
755	TAK1	TGF-beta-activated protein-serine kinase 1	Pan	NP_663306	O43318	NK175-5					4	3	7	9	10	Custom Only	67	69	65-75
756	Tau	Microtubule-associated protein tau	S515	NP_005901	P10636	PN085	RpAb	T	T	T	4	3	8	1	2	KPSS-12.1	79	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
757	Tau	Microtubule-associated protein tau	S515+S518	NP_005901	P10636	PN086	RpAb	T	T	T	4	3	8	3	4	KPSS-12.1	79	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
758	Tau	Microtubule-associated protein tau	S530	NP_005901	P10636	PN088	RpAb	T	T	T	4	3	8	5	6	Custom Only	79	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
759	Tau	Microtubule-associated protein tau	S578	NP_005901	P10636	PN089	RpAb	T	T	T	4	3	8	7	8	Custom Only	79	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70

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760	Tau	Microtubule-associated protein tau	S712	NP_005901	P10636	PN090	RpAb	T	T	T	4	3	8	9	10	KPSS-12.1	79	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
761	Tau	Microtubule-associated protein tau	S716	NP_005901	P10636	PN091	RpAb	T	T	T	4	3	9	1	2	Custom Only	79	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
762	Tau	Microtubule-associated protein tau	S720	NP_005901	P10636	PN092	RpAb	T	T	T	4	3	9	3	4	Custom Only	79	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
763	Tau	Microtubule-associated protein tau	S202	NP_005901	P10636	PN106	RpAb	T	T	T	4	3	9	5	6	Custom Only	79	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
764	Tau	Microtubule-associated protein tau	S422	NP_005901	P10636	PN107	RpAb	T	T	T	4	3	9	7	8	Custom Only	78	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
765	Tau	Microtubule-associated protein tau	T181	NP_005901	P10636	PN120	RpAb	T	T	T	4	3	9	9	10	Custom Only	78	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
766	Tau	Microtubule-associated protein tau	T205	NP_005901	P10636	PN121	RpAb				4	3	10	1	2	Custom Only	78	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
767	Tau	Microtubule-associated protein tau	T231	NP_005901	P10636	PN122	RpAb				4	3	10	3	4	Custom Only	78	Multiple bands between 40-75 kDa	44-46 + 46-50 + 55-56 + 59-62 + 63-70
768	TBK1	Tank-binding protein 1	Pan	NP_037386	Q9UHD2	NN109-1	MmAb	T	T	T	4	3	10	5	6	Custom Only	84	80	75-85
769	TBK1	Tank-binding protein 1	Pan	NP_037386	Q9UHD2	NN109-2	RpAb	T	T	T	4	3	10	7	8	Custom Only	84	80	75-79
770	TEK (TIE2)	Angiopoietin-1 receptor-tyrosine kinase	Pan	NP_444515	Q02763	NK176	RpAb	T	T	T	4	3	10	9	10	Custom Only	126	147	120-130
771	Tlk1	Tousled-like protein-serine kinase 1	Pan	NP_036422	Q9UKI8	NK177	RpAb	T	T	T	4	4	1	3	4	Custom Only	89	82	
772	TPIPb	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase TPTE2	Pan		Q6XPS3	NP034	RpAb	T			4	4	1	5	6	Custom Only	61		

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773	TRADD	Tumor necrosis factor receptor type 1 associated DEATH domain protein	Pan	NP_003789	Q15628	NN110	MmAb	T	T	F	4	4	1	7	8	Custom Only	34	40	37-42
774	Trail	Tumor necrosis factor-related apoptosis-inducing ligand	Pan	NP_003801	P50591	NN111	RpAb	T	T	T	4	4	1	9	10	Custom Only	33		
775	TrkA	Nerve growth factor (NGF) receptor-tyrosine kinase	Pan	NP_002520	P04629	NK178	RpAb	T	T	T	4	4	2	1	2	Custom Only	87 + 88	87	80-90
776	TrkB	BDNF/NT3/4/5 receptor- tyrosine kinase	Pan	NP_006171	Q16620	NK179	RpAb	T	T	T	4	4	2	3	4	Custom Only	92	93	85-95
777	TTK	Dual specificity protein kinase	Pan	AAA61239.1	P33981	NK180	RpAb	T	T	T	4	4	2	5	6	Custom Only	95	105	
778	Tyk2	Protein-tyrosine kinase 2 (Jak-related)	Pan	NP_003322	P29597	NK181	RpAb	T	T	T	4	4	2	7	8	Custom Only	134	144	141-145
779	Tyro10 (DDR2)	Neurotrophic receptor-tyrosine kinase of discoidin domain receptor family, member 2 precursor	Pan	NP_006173	Q16832	NK183-1	RpAb	T	T	T	4	4	2	9	10	Custom Only	97	111	88-92
780	Tyro10 (DDR2)	Neurotrophic receptor-tyrosine kinase of discoidin domain receptor family, member 2 precursor	Pan	NP_006173	Q16832	NK183-2	RpAb	T	T	T	4	4	3	1	2	Custom Only	97	111	88-92
781	Tyro3	Tyrosine-protein kinase receptor TYRO3	Pan	NP_006284	Q06418	NK182	MmAb	F	T	T	4	4	3	3	4	Custom Only	97		
782	Tyrosine Hydroxylase	Tyrosine hydroxylase isoform a	S71	NP_954986	P07101	PN093	RpAb	T	T	T	4	4	3	5	6	Custom Only	59	68	55-60
783	Tyrosine Hydroxylase	Tyrosine hydroxylase isoform a	S19	NP_954986	P07101	PN109	RpAb	T	T	T	4	4	3	7	8	Custom Only	59	68	55-65
784	VEGFR2 (KDR)	Vascular endothelial growth factor receptor-tyrosine kinase 2 (Flk1)	Y1054	NP_002244	P35968	PK110	RpAb	T	T	T	4	4	3	9	10	Custom Only	152	226	195-205
785	VEGFR2 (KDR)	Vascular endothelial growth factor receptor-tyrosine kinase 2 (Flk1)	Y1054+Y1059	NP_002244	P35968	PK111-2	RpAb	T	T	T	4	4	4	1	2	Custom Only	152	226	195-205
786	VEGFR2 (KDR)	Vascular endothelial growth factor receptor-tyrosine kinase 2 (Flk1)	Y1214	NP_002244	P35968	PK133	RpAb				4	4	4	3	4	Custom Only	152	226	195-205
787	VHR	Dual specificity protein phosphatase 3	Pan	NP_004081	P51452	NP030	MmAb	T	F	T	4	4	4	5	6	KPPS-1.2	20	18	16-20
788	Vimentin	Vimentin	S33	NP_003371	P08670	PN094	MmAb	T	T	T	4	4	4	7	8	Custom Only	54	54	52-55
789	Vinculin	Vinculin	Y821	NP_003364	P18206	PN095	RpAb	T	T	T	4	4	4	9	10	Custom Only	124	112	105-120
790	Vrk1	Vaccinia related protein-serine kinase 1	Pan	NP_003375	Q99986	NK184	RpAb	T	T	T	4	4	5	1	2	Custom Only	45	45	
791	Wee1	Wee1 protein-tyrosine kinase	Pan	NP_003381	P30291	NK185	RpAb	T	T	T	4	4	5	3	4	Custom Only	72	72	69-78
792	Wip1	Protein phosphatase 1D		NP_003611.1	O15297	NP037					4	4	5	5	6	Custom Only	67		
793	XIAP	X-linked inhibitor of apoptosis protein (baculoviral IAP repeat-containing 4)	Pan	NP_001158	P98170	NN112	RpAb	T	T	T	4	4	5	7	8	Custom Only	57	48	45-51

Ab No.	Target Short Name	Full Target Protein Name	Pan or Phospho Site-specific	Refseq	Swiss-prot Link	Antibody Codes	Ab Type	React. Human	React. Mouse	React. Rat	Meta Row	Meta Col.	Row	Col. 1	Col. 2	Kinetworks Screen	Predicted MW Swissprot	Observed MW Kinetworks	Target Bin Size
794	Yes	Yamaguchi sarcoma proto-oncogene-encoded tyrosine kinase	Pan	NP_005424	P07947	NK186	MmAb	T	T	T	4	4	5	9	10	KPKS-1.2	61	54	52-57
795	ZAP70	Zeta-chain (TCR) associated protein-tyrosine kinase, 70 kDa	Pan	NP_003168	P43403	NK187	MmAb	T	T	T	4	4	6	1	2	KPKS-1.2	70	78	61-65
796	ZAP70	Zeta-chain (TCR) associated protein-tyrosine kinase, 70 kDa	Y292	NP_001070	P43403	PK112	RpAb	T	T	T	4	4	6	3	4	Custom Only	70	71	61-65
797	ZAP70	Zeta-chain (TCR) associated protein-tyrosine kinase, 70 kDa	Y315+Y319	NP_001070	P43403	PK113	RpAb	T	T	T	4	4	6	5	6	Custom Only	70	71	61-65
798	ZAP70/Syk	Zeta-chain (TCR) associated protein-tyrosine kinase, 70 kDa/Spleen protein-tyrosine kinase	Y319/Y352	NP_001070	P43403	PK109	RpAb	T	T	T	4	4	6	7	8	Custom Only	70	71	61-65
799	ZIPK	ZIP kinase (death associated protein-serine kinase 3 (DAPK3))	Pan	NP_001339	O43293	NK188-1	RpAb	T	T	T	4	4	6	9	10	Custom Only	53	46	47-57
800	ZIPK	ZIP kinase (death associated protein-serine kinase 3 (DAPK3))	Pan	NP_001339	O43293	NK188-2	RpAb	T	T	T	4	4	7	1	2	KPKS-1.2	53	46	41-46 + 44-49

October 20, 2008 Release



KINEXUS SERVICE ORDER FORM

Form: **KX-SOF-02**

KINEXUS ORDER NUMBER

CUSTOMER INFORMATION REPEAT CUSTOMER OR NEW CUSTOMER

Dr. Mr. Ms.

Name of Authorized Representative or Principal Investigator

Title/Position

Company Name or Institute

Department

Street Address

City

State or Province

Country

Zip or Postal Code

Email Address

(Area Code)

Telephone Number

(Area Code)

Facsimile Number

Contact Person (if different from Authorized Representative)

Email Address

(Area Code)

Telephone Number

KINEX™ REPORTS

RESULTS SENT BY EMAIL TO: AUTHORIZED REPRESENTATIVE/INVESTIGATOR AND/OR CONTACT PERSON

BILLING INFORMATION

Kinex™ Antibody Microarray Services offered for the detection with up to 500 pan- and/or 300 phospho-site-specific antibodies for cell signalling proteins in two (2) samples in duplicate measurements:

PRICE PER SAMPLE ON EACH MICROARRAY - Refer to Section C of the Sample Identification Forms:

All prices in U.S. Funds

NOTE: EACH MICROARRAY ORDERED INCLUDES THE ANALYSIS OF TWO (2) SAMPLES

Sample Analysis Options

No. of KAM-1.2FN 800 Ab microarrays (2 non-confidential samples) @ US \$1770 per microarray	\$ _____
No. of KAM-1.2EN 500 Pan-Ab microarrays (2 non-confidential samples) @ US \$1180 per microarray	+ \$ _____
No. of KAM-1.2PN 300 Phospho-Ab microarrays (2 non-confidential samples) @ US \$1180 per microarray	+ \$ _____
No. of KAM-1.2FC 800 Ab microarrays (2 full confidential samples) @ US \$2998 per microarray	+ \$ _____
No. of KAM-1.2EC 500 Pan-Ab microarrays (2 full confidential samples) @ US \$1998 per microarray	+ \$ _____
No. of KAM-1.2PC 300 Phospho-Ab microarrays (2 full confidential samples) @ US \$1998 per microarray	+ \$ _____
No. of KAM-1.2FP 800 Ab microarrays (1 non-confidential & 1 full confidential sample) @ US \$2384 per microarray	+ \$ _____
No. of KAM-1.2EP 500 Pan-Ab microarrays (1 non-confidential & 1 full confidential sample) @ US \$1589 per microarray	+ \$ _____
No. of KAM-1.2PP 300 Phospho-Ab microarrays (1 non-confidential & 1 full confidential sample) @ US \$1589 per microarray	+ \$ _____

Total number of samples submitted: _____ **Subtotal = \$** _____

Total number of Kinex™ antibody microarrays ordered: _____

Quotation or Reference Number: _____ - \$ _____

TOTAL COST FOR THIS ORDER = \$ _____

FOR CANADIAN CUSTOMERS ONLY:

Add an additional 5% to the above total for GST (No. 893907329 RT0001): + \$ _____ = \$ _____
TOTAL AMOUNT PAYABLE IN U.S FUNDS

PAYMENT METHOD

PURCHASE ORDER ACCEPTED FROM COMPANIES AND INSTITUTES WITH APPROVED CREDIT. P.O. NUMBER: _____

VISA OR MASTERCARD

Print Cardholder Name

Visa Number

Expires (M/Y)

Cardholder Signature

BILLING INFORMATION SEND INVOICE TO CUSTOMER AT ABOVE ADDRESS OR SEND INVOICE TO ACCOUNTS PAYABLE CONTACT:

Dr. Mr. Ms.

Accounts Payable Contact Name

Company Name or Institute

Street Address

City

State or Province

Country

Zip or Postal Code

(Area Code)

Telephone Number

AUTHORIZATION

CUSTOMER HAS READ THE KINEXUS SERVICE AGREEMENT AND AGREES TO BE BOUND BY THE TERMS AND CONDITIONS:

Print Name of Authorized Representative or Principal Investigator

Authorized Signature

Date (m/d/y)

How did you originally hear about the Kinex™ Services?

Direct Mail

Email

Web Site

Advertisement

Referral

Conference or Trade Show

Other



KINEXUS

Form: **KXS-SIF-02**

KINEX™ STANDARD SCREEN SERVICE IDENTIFICATION FORM

Subject to terms of the Kinexus Service Agreement

KINEXUS ORDER NUMBER

NAME: _____ **COMPANY/INSTITUTE:** _____
(Authorized Representative or Principal Investigator)

STANDARD KINEX™ SCREENING SERVICE REQUESTED: (WITH CLIENT LYSATES AND KINEXUS ANTIBODY MICROARRAY)

Use this form to order one or more of the nine Standard Kinex™ KAM-1.2. antibody microarray services currently offered by Kinexus. Please check the appropriate tick boxes. If you need assistance completing this form, please contact a technical service representative by calling toll free in North America 1-866-KINEXUS (866-546-3987) or by email at info@kinexus.ca.

STANDARD SERVICE REQUESTED: KAM-1.2 Standard Antibody Microarrays (500 pan-specific and/or 300 phospho-site-specific antibodies) and Two (2) Samples per Microarray <i>100 µg protein for each cell or tissue lysate sample is required</i>	KINEXUS ID NUMBER <i>(Bar Code Identification Number)</i> For Kinexus Internal Use Only.	A. CLIENT SCREEN ID NAME: Customer ID: _____ <i>Provide ID name of your choice for your reference and for use in Box A of the "Client-Supplied Non-confidential Sample Description" (KX-NSDF-01) and "Client-Supplied Confidential Sample Description" (KX-CSDF-01) forms.</i>
B. KINEX™ SCREEN SELECTION: <i>Kinexus currently offers nine (1) Standard Kinex™ screening services. Check with the Kinexus website at www.kinexus.ca for new releases.</i> <input type="checkbox"/> KAM-1.2FN 800 Pan & phospho-specific Ab microarray (2 non-confidential samples) <input type="checkbox"/> KAM-1.2EN 500 Pan-specific Ab microarray (2 non-confidential samples) <input type="checkbox"/> KAM-1.2PN 300 Phospho-Ab microarray (2 non-confidential samples) <input type="checkbox"/> KAM-1.2FC 800 Pan & phospho-specific Ab microarray (2 full confidential samples) <input type="checkbox"/> KAM-1.2EC 500 Pan-specific Ab microarray (2 full confidential samples) <input type="checkbox"/> KAM-1.2PC 300 Phospho-Ab microarray (2 full confidential samples) <input type="checkbox"/> KAM-1.2FP 800 Ab microarray (1 non-confidential & 1 full confidential sample) <input type="checkbox"/> KAM-1.2EP 500 Pan-Ab microarray (1 non-confidential & 1 full confidential sample) <input type="checkbox"/> KAM-1.2PP 300 Phospho-Ab microarray (1 non-confidential & 1 full confidential sample)		C. SAMPLE IDENTIFICATION: <i>For each client supplied sample, please complete a "Client-Supplied Non-confidential Sample Description Form" (KX-NSDF-01) or a "Client-Supplied Confidential Sample Description Form" (KX-CSDF-01). There should be 2 completed Sample Description Forms per Client Screen ID Name.</i> D. PRICING: <input type="checkbox"/> KAM-1.2FN 2 non-confidential samples = \$1770. <input type="checkbox"/> KAM-1.2EN 2 non-confidential samples = \$1180 <input type="checkbox"/> KAM-1.2PN 2 non-confidential samples = \$1180 <input type="checkbox"/> KAM-1.2FC 2 full confidential samples = \$2998 <input type="checkbox"/> KAM-1.2EC 2 full confidential samples = \$1998 <input type="checkbox"/> KAM-1.2PC 2 full confidential samples = \$1998 <input type="checkbox"/> KAM-1.2FP 1 non-confid. + 1 confid. sample = \$2384 <input type="checkbox"/> KAM-1.2EP 1 non-confid. + 1 confid. sample = \$1589 <input type="checkbox"/> KAM-1.2PP 1 non-confid. + 1 confid. sample = \$1589 Use this pricing information for completion and submission of Service Order Form KX-SOF-02.

Name of person completing this form

Signature

Date (m/d/y)



KINEXUS

Form: KX-NSDF-02

CLIENT SUPPLIED
NON-CONFIDENTIAL SAMPLE DESCRIPTION FORM

Subject to terms of the Kinexus Service Agreement

KINEXUS ORDER NUMBER

NAME: COMPANY/INSTITUTE: (Authorized Representative or Principal Investigator)

Non-Confidential Services Requested and Sample Details:

Please refer to the Kinex™ Sample Preparation Protocol for details on preparing your samples. Clients are required to complete all Sections A-K to qualify for the non-confidential pricing levels of US\$590-885 per sample or US\$1180-1770 per Kinex™ microarray.

Form sections A through K containing fields for client information, species, tissues, cell state, fractionation, perturbations, and treatments.

I hereby certify that all the sample information provided in this order is correct and accurate to the best of my knowledge. To qualify for the non-confidential pricing level, I agree that all Sections A-K must be completed in full otherwise the confidential pricing level will be applied.

Name of person completing this form Signature Date (m/d/y)



KINEXUS

Form: KX-CSDf-02

CLIENT SUPPLIED
CONFIDENTIAL SAMPLE DESCRIPTION FORM

Subject to terms of the Kinexus Service Agreement

KINEXUS ORDER NUMBER

NAME: COMPANY/INSTITUTE: (Authorized Representative or Principal Investigator)

Confidential Service Requested and Sample Details:

Please refer to the "Kinex™ Sample Preparation Protocol" for details on preparing your samples. Clients are required to complete Sections A-C for a confidential analysis with the Kinex™ antibody microarray services.

Form section 1: A. CLIENT SCREEN ID NAME + KINEX™ SCREEN NAME; B. SAMPLE IDENTIFICATION; C. SPECIES; KINEXUS ID NUMBER

Form section 2: A. CLIENT SCREEN ID NAME + KINEX™ SCREEN NAME; B. SAMPLE IDENTIFICATION; C. SPECIES; KINEXUS ID NUMBER

Form section 3: A. CLIENT SCREEN ID NAME + KINEX™ SCREEN NAME; B. SAMPLE IDENTIFICATION; C. SPECIES; KINEXUS ID NUMBER

I hereby certify that all the sample information provided in this order is correct and accurate to the best of my knowledge. I further acknowledge that I may be contacted by a Kinexus representative for additional information if any section is unclear.

Name of person completing this form Signature Date (m/d/y)

COMMERCIAL INVOICE

DATE OF EXPORTATION	EXPORT REFERENCES (Not required)
SHIPPER/EXPORTER	CONSIGNEE Kinexus Bioinformatics Corporation 8755 Ash Street, Suite 1 Vancouver, B.C. Canada V6P 6T3 Telephone: (604) 323-2547 Facsimile: (604) 323-2548 Email: info@kinexus.ca
COUNTRY OF EXPORT	TERMS OF SALE Not for resale, sample for analysis
COUNTRY OF ORIGIN	PURPOSE Research and development
COUNTRY OF ULTIMATE DESTINATION Canada	EXPORTING CARRIER
INTERNATIONAL AIR WAYBILL NUMBER	

NO. OF PKGS	TYPE OF PACKAGING	QUANTITY OF SAMPLES	COMPLETE AND ACCURATE COMMODITY DESCRIPTION	UNIT VALUE
	<input type="checkbox"/> FedEx Letter <input type="checkbox"/> FedEx Pak <input type="checkbox"/> Box <input type="checkbox"/> Other	<i>Total number of 1.5 ml Eppendorf tubes:</i>	Non hazardous, non infectious protein for research and development diagnostic purposes. Samples are not for resale and there is no commercial value. Samples are packaged on Dry Ice, Class 9, UN 1845, Group 3 (____ X ____ kgs).	\$1.00 <i>per sample</i>
TOTAL NO. OF PACKAGES		TOTAL WEIGHT OF PACKAGES		TOTAL DECLARED VALUE
				\$

These commodities were exported from the Country indicated above in accordance with the Export Administration Regulations and are licensed for the ultimate designation shown. It is hereby certified that this commercial invoice shows the actual price of the goods described, that no other invoice has been or will be issued for these goods, and that all particulars are true and correct.

SIGNATURE AND STATUS OF AUTHORIZED PERSON

Print Name	Title
Authorized Signature	Date (month/day/year)

INCLUDE THREE (3) COPIES OF THIS INVOICE WITH YOUR SHIPMENT



KINEXUS SERVICES AGREEMENT

SERVICE AGREEMENT NO.

This Agreement is entered into effective as of the Effective Date by and between Kinexus Bioinformatics Corporation (“**Kinexus**”), a Canadian corporation with a principal place of business at Suite 1, 8755 Ash Street, Vancouver, British Columbia, Canada, V6P 6T3 **AND** the corporation or other entity (“**Customer**”) having the following name and business or institution address: _____

RECITALS

WHEREAS Kinexus is a bioinformatics company employing proprietary Kinex™ and Kinetworks™ Technologies (as defined below) to create and interpret data to map cell signalling networks and compile databases of this knowledge, identified as KiNET databases;

WHEREAS Kinexus holds trade secrets and exclusive rights to patents for proprietary methods of mapping the expression and phosphorylation state of cell signalling proteins and their substrates, as identified by the trade-mark Kinex™ and Kinetworks™;

WHEREAS the Customer wishes to have Kinexus apply its Kinex™ and Kinetworks™ Technologies to analyze a Sample or Samples for the expression and regulation of cell signalling proteins; and

WHEREAS Kinexus is willing to apply its Kinex™ and Kinetworks™ Technologies to analyze the expression and regulation of cell signalling proteins in the Customer's Samples under the terms and conditions set forth herein.

THEREFORE, in consideration of the premises and covenants and agreements contained herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, Kinexus and Customer agree as follows:

1. DEFINITIONS

- 1.1 "Academic Collaborator" means a principal investigator, employed at a university or other not-for-profit academic research institution.
- 1.2 "Affiliate" means any corporation or other entity that directly or indirectly controls, is controlled by or is under common control with a party to this Agreement. A corporation or other entity shall be regarded as in control of another corporation or entity if it owns or directly or indirectly controls more than fifty percent (50%) of the outstanding voting stock or other ownership interest of the other corporation or entity.
- 1.3 "Antibody" means the immunoglobulin reagent that permits detection of a target protein or phosphorylation site.

- 1.4 “Client Supplied Non-Confidential Sample Description Form” and the “Client Supplied Confidential Sample Description Form” means the Kinexus forms when applicable to be completed by the Customer to provide Kinexus with Sample information and attached to this Agreement in the Appendix, which may be amended from time to time as updated on the Kinexus website.
- 1.5 “Client Supplied Antibody Description Form” means the Kinexus form when applicable to be completed by the Customer to provide Kinexus with antibody information and attached to this Agreement in the Appendix, which may be amended from time to time as updated on the Kinexus website.
- 1.6 “Confidential Information” means any information or data received by a party (the “Receiving Party”) from the other party (the “Disclosing Party”) in connection with the performance of this Agreement that, if disclosed in writing, is marked or otherwise identified by the Disclosing Party as confidential or, if disclosed orally is identified in writing by the Disclosing Party as confidential within ten (10) days following the disclosure. All Kinex™ and Kinetworks™ Technologies and all KiNET Databases shall be deemed to have been identified by Kinexus as Confidential Information of Kinexus. Confidential Information shall not include any information or data that the Receiving Party can demonstrate:
- (a) was generally available to the public before its disclosure to the Receiving Party or became generally available to the public after its disclosure to the Receiving Party, provided that such information or data did not become generally available to the public by means of an unauthorized act or omission of the Receiving Party;
 - (b) was already in the possession of the Receiving Party before its disclosure under this Agreement, as demonstrated by Receiving Party’s written records, provided that such information or data was not obtained directly or indirectly from the Disclosing Party under an obligation of confidentiality;
 - (c) was disclosed to the Receiving Party, whether before or after its disclosure under this Agreement, by a Third Party, provided that such information or data was not obtained directly or indirectly from the Disclosing Party under an obligation of confidentiality; or
 - (d) was independently developed or discovered by employees or agents of the Receiving Party without any use of Confidential Information of the Disclosing Party as demonstrated by Receiving Party’s written records.
- 1.7 “Contact” means the contact person of the Customer that is designated on the Service Order Form, who is deemed to have the authority to deliver Samples, Service Order Forms Service Identification Forms, Sample Description Forms, and Antibody Description Forms to Kinexus, on behalf of the Customer, under this Agreement.
- 1.8 “Corporate Partner” means any Third Party which enters into an agreement with Customer or its Affiliates involving the grant to such Third Party of rights for the development or commercialization of a product that was discovered, identified, selected, characterized or determined to have therapeutic or diagnostic use through use of the Kinex™ or Kinetworks™ Report provided to the Customer pursuant to this Agreement.
- 1.9 “Custom Kinetworks™ Analysis” means a proteomics service provided by Kinexus that utilizes a set of antibodies that are selected by the Customer from a list of antibodies available from Kinexus or antibodies that are supplied by the Customer.
- 1.10 “Effective Date” means the date of the last signature on this Agreement.
- 1.11 “Field of Use” means use by Kinexus and its Affiliates and Academic Collaborators of data from the Kinex™ or Kinetworks™ Report for research and commercial purposes relating to the creation and interpretation of

knowledge about cell signalling proteins, mapping cell signalling networks, improving Kinex™ and Kinetworks™ Technology, and the compilation of databases (KiNET) that may become accessible to Third Parties on-line over the Internet.

- 1.12 "KiNET Databases" means Kinexus' proprietary databases including but not limited to information about cell signalling proteins and their relationships, antibodies to cell signalling proteins and all intellectual property, know-how, data, and other information relating thereto or derived from the databases, together with all bioinformatics software and scanning tools used by Kinexus, and periodic updates thereof. Portions of KiNET may become available to Third Parties on-line over the Internet.
- 1.13 "Kinex™ or Kinetworks™ Analyses" means proteomics services provided by Kinexus that utilize a set of antibodies or cell/tissue lysates to generate information about the expression and regulation of proteins.
- 1.14 "Kinex™ or Kinetworks™ Report" means the underlying raw data and the report provided to Customer hereunder consisting of qualitative and semi-quantitative analyses of the expression and phosphorylation states of proteins in the Sample including, but not limited to:
- (a) Kinex™ Antibody Microarray Report:
 - (i) TIFF file of a coloured overlay featuring the detected signals for target signalling proteins in the two samples submitted for analysis on each microarray;
 - (ii) Semi-quantitative analyses of the intensity of the enhanced fluorescent signal of each target protein detected in each sample submitted for analysis with each microarray; and
 - (iii) A report comparing the changes in quantity of the targeted proteins for each control and experimental sample submitted for analysis for each microarray array.
 - (b) Kinex™ Reverse Lysate Microarray Report:
 - (i) TIFF file of image of the scanned Kinex™ reverse lysate microarray probed with the requested antibody from Kinexus or antibody submitted by the Customer; and
 - (ii) semi-quantitative analyses of the intensity of the enhanced fluorescent signal of each cell or tissue lysate spot detected on the microarray with the probing antibody.
 - (c) Kinex™ Kinase Substrate Profiling Report:
 - (i) Semi-quantitative analyses of the intensity of the enhanced fluorescent signal on an antibody microarray of each phospho-protein detected with and without the addition of a protein kinase in a sample submitted for analysis;
 - (ii) TIFF files of immunoblot images that features the detected signalling proteins visualized with selected phospho-site antibodies in a follow up custom analysis by Western blotting; and
 - (iii) A report comparing the trace quantity of the targeted proteins from each immunoblot probed with the selected phospho-site antibodies.
 - (d) Kinetworks™ Immunoblot Report:
 - (i) TIFF files of immunoblots that features the target signalling proteins detected in each Kinetworks™ screen;

- (ii) semi-quantitative analyses of the intensity of the enhanced chemiluminescent signal of each target protein in a Kinetworks™ screen for each sample submitted; and
- (iii) A report comparing the trace quantity of the targeted proteins from each Kinetworks™ screen against all relevant samples.

1.15 "Kinex™ or Kinetworks™ Sample Preparation Protocol" means the Sample preparation protocol available from the Kinexus website, which may be amended from time to time as updated on this website.

1.16 "Kinex™ or Kinetworks™ Technology" means all inventions, discoveries, technology, improvements, know-how, trade secrets, technical information, data, or other information, relating to:

- (a) some or all of the Kinexus Patents; and
- (b) the proprietary methods that are used by Kinexus to analyze and detect the presence, expression, and phosphorylation state of signal transduction proteins to map cell signalling networks;

heretofore or hereafter discovered, conceived, made, developed and/or reduced to practice solely or jointly by employees or others acting on behalf of Kinexus or its Affiliates, or owned in whole or in part by or licensed to Kinexus or its Affiliates.

1.17 "Kinexus Patents" means any Canadian, United States and foreign patent applications heretofore or hereafter owned in whole or in part by or licensed to Kinexus, relating to the Kinex™ and Kinetworks™ Technology or the KiNET Databases.

1.18 "Sample" means the cell or tissue specimen or purified protein extract provided to Kinexus by the Customer, which the Customer has prepared and shipped in accordance with the Kinex™ or Kinetworks™ Sample Preparation Protocol.

1.19 "Service Identification Form" means the Kinexus form required to be completed by the Customer to describe the specific Kinexus service and confidentiality level associated with each Sample submitted for analysis and attached to this Agreement in the Appendix, which may be amended from time to time as updated on the Kinexus website.

1.20 "Service Order Form" means the Kinexus form required to be completed by the Customer to provide Kinexus with the Customer contact and billing information and attached to this Agreement in the Appendix, which may be amended from time to time as updated on the Kinexus website.

1.21 "Third Party" means any entity other than Kinexus, Kinexus' Affiliates, Customer and Customer's Affiliates.

2. REQUEST FOR AND DELIVERY OF KINEX™ OR KINETWORKS™ REPORT

2.1 Request for Kinex™ or Kinetworks™ Report. From time to time, over the Term of this Agreement (as defined in Section 6.1 herein), by delivery to Kinexus of a Service Order Form, Service Identification Form, and Samples and other forms described herein as appropriate, the Customer hereby requests and authorizes Kinexus to perform the requested services and deliver a Kinex™ or Kinetworks™ Report to the Customer, pursuant to the terms and conditions in this Agreement.

2.2 Representation and Warranty. Customer represents and warrants that: (a) it has all right and authority to provide the Sample to Kinexus for analysis under the terms and conditions of this Agreement, (b) it collected

the Sample lawfully and with all necessary consents and approvals, and (c) that the collection, use and disclosure of the Sample by Kinexus pursuant to this Agreement will not violate the rights of any Third Party.

- 2.3 Delivery Conditions for Customer Sample. Customer shall be responsible for making shipping arrangements to deliver Samples to Kinexus. Customer shall also be responsible for complying with all applicable laws and regulations (including but not limited to customs requirements and relevant handling procedures and protocols) and obtaining any and all permits, forms or permissions that may be required by all regulatory authorities to ship and deliver the Sample; to Kinexus and for Kinexus to accept delivery of the Sample.
- 2.4 Processing and Delivery of Kinex™ or Kinetworks™ Report. Subject to the terms of this Agreement, Kinexus shall use some or all of the proprietary Kinex™ or Kinetworks™ Technology to analyze each Sample, and deliver a Kinex™ or Kinetworks™ Report to the Customer for each Sample, as requested on the Service Order Form and Service Identification Form.
- 2.5 Kinex™ or Kinetworks™ Sample Preparation Protocol. Kinexus shall not deliver a Kinex™ or Kinetworks™ Report on any Sample that Kinexus, in its sole discretion, believes has not been prepared in accordance with the Kinex™ or Kinetworks™ Sample Preparation Protocol. Under such a circumstance, the Sample will be destroyed by Kinexus after ten (10) days notification by e-mail to the Customer or at the request of the Customer prior to the scheduled destruction of the Sample, it will be returned to the Customer provided that the Customer agrees to reimburse Kinexus for the courier costs for its delivery.

3. PAYMENTS

- 3.1 Payments for Kinex™ and Kinetworks™ services. For each type of requested proteomics service under this Agreement, Customer shall pay to Kinexus a fee per screen in accordance with the Kinexus Service Order Form and the Service Identification Form for the requested service (see examples in Appendix), which may be amended from time to time as updated on Kinexus' website. The category of pricing depends on the level of requested confidentiality for analysis:
 - (a) Non-Confidential Analysis. If the Samples are provided by the Customer, then all of the Sample information on the Client Supplied **Non-Confidential** Sample Description Form (see example in Appendix) is completed and **is not** designated as Confidential Information on the Service Identification Form. (This includes completion of Service Requested, Sample Identification, Confidentiality and Pricing, Species, Organ, Tissue, Cell, Cell State, Fractionation, Perturbation, and Treatment.) If the Antibodies are supplied by the Customer, then all of the Antibody information on the Client Supplied Antibody Description Form (see example in Appendix) must be completed and **is not** designated as Confidential Information on the Service Identification Form.
 - (b) Confidential Analysis. If the Samples are provided by the Customer, then all of the Sample information on the Client Supplied **Confidential** Sample Description Form (see example in Appendix) must be completed and **is** designated as Confidential Information on the Service Identification Form. (Required information includes Service Requested, Sample Identification, Confidentiality and Pricing, and Species.)

Customer shall issue a purchase order or provide a charge account at the time the Customer sample arrives at Kinexus' offices at Suite 1, 8755 Ash Street, Vancouver, British Columbia, Canada, V6P 6T3. Kinexus will invoice Customer when the Kinex™ or Kinetworks™ Report is complete and delivered to Customer. Payment terms are net 30 days from date of invoice. Notwithstanding the above schedule of fees, the fee charged by Kinexus for any Kinex™ or Kinetworks™ Report may change from time to time upon notice by Kinexus in the most recent version of the Service Order Form available on the Kinexus website or otherwise.

3.2 Interest on Late Payments. Any overdue payments by Customer to Kinexus under this Agreement shall bear interest, to the extent permitted by applicable law at 18% per annum, calculated on the total number of days payment is delinquent; provided, however, that interest shall not accrue pursuant to this Section 3.2 on any amounts payable under this Agreement with respect to which payment is disputed in good faith; provided, further that interest shall accrue pursuant to this Section 3.2 once such dispute has been resolved if payment is not made promptly thereafter.

4. INTELLECTUAL PROPERTY RIGHTS

- 4.1 Ownership of the Kinex™ or Kinetworks™ Technology and KiNET Databases. Kinexus has and retains all rights and interest to the Kinex™ and Kinetworks™ Technology and the KiNET Databases.
- 4.2 Ownership of Sample Information. Customer owns all rights to the Sample information provided to Kinexus. Customer grants Kinexus a non-exclusive, royalty-free fully paid up worldwide perpetual license to use, copy, publish, compile, display, communicate, modify, translate and otherwise exploit (and authorize Third Parties to do any of the foregoing) the Sample information provided to Kinexus on Kinexus Sample Identification Form (including Species, Organ, Tissue, Cell, Cell State, Fractionation, Perturbation, and Treatments) in the Field of Use, provided that Customer's identity is not linked to, or otherwise disclosed with respect to, such data.
- 4.3 Ownership of Kinex™ or Kinetworks™ Report. Customer shall own the data in the Kinex™ or Kinetworks™ Report. Customer grants Kinexus a non-exclusive, royalty-free fully paid up worldwide perpetual license to use, copy, publish, compile, display, communicate, modify, translate and otherwise exploit (and authorize Third Parties to do any of the foregoing) data from the Kinex™ or Kinetworks™ Report in the Field of Use.
- 4.4 Confidentiality of Sample Information. Kinexus will have no rights with respect to the Confidential sample information for a period of three (3) years or until the sample information is published or otherwise enters the public domain. Samples received by Kinexus indicating Confidential information shall be subject to a higher analysis fee than that charged to the Customer for samples having no confidential restrictions.
- 4.5 Ownership of New Intellectual Property.
- (a) Customer shall own and have rights to all inventions, discoveries, improvements, know-how, technical information, data or other technology discovered, conceived, made, developed and/or reduced to practice through the use of the data in the Kinex™ or Kinetworks™ Report solely by employees of Customer or jointly with its Affiliates;
 - (b) Kinexus shall own and have rights to all inventions, discoveries, improvements, know-how, technical information, data or other technology discovered, conceived, made, developed and/or reduced to practice through the use of the data in the Kinex™ or Kinetworks™ Report solely by employees of Kinexus or jointly with its Affiliates.
- 4.6 Non-Exclusive License to Preserve Kinex™, Kinetworks™ and KiNET Freedom of Operation. In the event one or more claims of an issued patent arising from the use of a Kinex™ or Kinetworks™ Report by Customer, its Affiliates, Academic Collaborators or Corporate Partners would, absent a license from Customer or its Affiliates, prevent Kinexus from using or permitting others to use the Kinex™, Kinetworks™ and KiNET services or any data therein, then Customer and/or its Affiliates (as applicable) shall grant to Kinexus a non-exclusive, royalty-free fully-paid up perpetual license, including the right to grant sublicenses, under any such patent claim to use and permit others to use the Kinex™ and Kinetworks™ services and KiNET Databases.

5. CONFIDENTIALITY

- 5.1 **Confidentiality.** Each Receiving Party shall treat the Confidential Information of the Disclosing Party as strictly confidential and (a) take reasonable precautions to protect such Confidential Information (including, without limitation, all precautions such as the Receiving Party employs with respect to its own confidential information), (b) not disclose or make available to any Third Party such Confidential Information without the express prior written consent of the Disclosing Party and (c) use such Confidential Information only for purposes specifically authorized under this Agreement. Each Receiving Party may disclose Confidential Information to its employees, consultants, Affiliates and agents, and to licensees or prospective licensees of its rights to any invention, on a need-to-know basis and on the condition that such employees, Affiliates, agents, licensees and prospective licensees are obligated to maintain the confidentiality of the Confidential Information under written agreements that contain terms and conditions no less restrictive than the terms and conditions of this Section 5. Each Receiving Party may disclose Confidential Information of the Disclosing Party pursuant to a demand issued by a court or governmental agency or as otherwise required by law, provided, however, that the Receiving Party notifies the Disclosing Party promptly upon receipt thereof, giving the Disclosing Party sufficient advance notice to permit it to seek a protective order or other similar order with respect to such Confidential Information, and provided, further, that the Receiving Party furnishes only that portion of the Confidential Information which it is advised by counsel is legally required whether or not a protective order or other similar order is obtained by the Disclosing Party.
- 5.2 **Publication.** Customer may publish and/or present the Kinex™ or Kinetworks™ Report, abstracts or manuscripts generated utilizing the Kinex™ or Kinetworks™ Report, and any data and/or results generated by the Customer utilizing Kinex™ or Kinetworks™ Report. Customers are encouraged to disclose in scientific publications that their “Kinex™ or Kinetworks™ Analysis were performed by Kinexus Bioinformatics Corporation (Vancouver, Canada).” For all Samples submitted for analysis and identified as non-confidential by the Customer, Kinexus will not use, copy, publish, compile, display, communicate, modify, or translate the Sample Information or the data from Kinex™ or Kinetworks™ Reports for a period of 180 days (6 months) following the return of the Kinex™ or Kinetworks™ Reports to the Customer. At any time, the Customer may opt to pay the difference in price between the non-confidential pricing level to the confidential pricing level for each applicable sample, to ensure the confidentiality status of such sample is changed.
- 5.3 **Confidential Sample Information.** In the event Customer selects the Confidential pricing on the Sample Identification Form for the Kinex™ and Kinetworks™ services or designates in writing that any of the Sample information on the Sample Identification Form is confidential and pays at the Confidential pricing level, all parties agree that the term of confidentiality pertaining to that Sample information will expire three (3) years after the date on the Sample Identification Form or when the Sample information is published or otherwise enters public domain through no fault of Kinexus, whichever occurs first.
- 5.4 **Use of Customer Name.** Except as expressly provided in Section 9.5, no right or license is granted hereunder by Customer for Kinexus to use Customer’s name in relation to data from a Kinex™ or Kinetworks™ Report to a Third Party.

6. TERM AND TERMINATION

- 6.1 **Term.** The term of this Agreement (“**Term**”) shall commence on the Effective Date and shall remain in effect for fifteen (15) years or until the termination of this Agreement pursuant to the terms hereof.

- 6.2 Early Termination. Each party shall have the right to terminate this Agreement at any time prior to Kinexus' delivery of Kinex™ or Kinetworks™ Report to Customer hereunder, upon ten (10) days written notice to the other party, if such party reasonably determines that the production, or use of such Sample infringes intellectual property rights of any Third Party, and Customer elects not to obtain a license under the necessary Third Party intellectual property rights at its sole expense. If this Agreement is terminated by either party pursuant to this Section 6.2, neither party shall have any obligation to the other with respect to payments under this Agreement regarding the Sample at issue.
- (a) Kinexus shall have the right to terminate any work order for any Kinex™ or Kinetworks™ analyses upon ten (10) days written notice to Customer, upon the identification of a technical difficulty related to the Sample which would prevent it from delivering the Kinex™ or Kinetworks™ Report using reasonable efforts. If Kinexus terminates a work order as a result of a technical difficulty related to the Customer Sample that is the fault of Kinexus, Kinexus shall provide for the reanalysis of the same number of problematic Customer Samples for the Kinex™ or Kinetworks™ analyses at the original agreed upon price without any additional expenses incurred by the Customer, or Kinexus shall repay any prepayment fee paid by Customer for such Customer Sample and neither party shall have any further obligation to the other with respect to that Customer Sample.
- (b) If Kinexus terminates a work order for the Kinetworks™ analyses as a result of a technical difficulty related to the Customer Sample (including insufficient material or other problems associated with the quality of the Sample) that is the fault of the Customer, then Kinexus shall provide for the reanalysis of the problematic Customer Samples at the original agreed upon price without any additional expenses incurred by the Customer, provided Kinexus completes the full Kinetworks™ analyses for all Samples. For any subsequent resubmission of Customer Samples for Kinetworks™ analyses due to technical difficulty that is again the fault of the Customer, Kinexus shall provide for the reanalysis of the problematic Customer Samples at a charge of US \$150 per sample, provided Kinexus completes the full Kinetworks™ analyses for all Samples. If the Customer chooses not to resubmit Samples for analysis, Kinexus will charge a fee for the work incurred at a cost of US \$300 per Sample. This US \$300 fee will be charged for any of the Samples for which Kinexus has completed up to the first stages of the Kinetworks™ analyses (including Sample documentation, Sample loading, sodium dodecyl sulphate polyacrylamide gel electrophoresis resolution of the Sample, electrotransfer of the Sample proteins to a membrane and Ponceau staining of the said membrane), or US \$400 per Sample if Kinexus has completed all the above Kinetworks™ protocols in addition to the probing of the antibody cocktails to the said membrane.
- (c) If Kinexus terminates a work order for the Kinex™ analyses as a result of a technical difficulty related to the Customer Sample (including insufficient material or other problems associated with the quality of the Sample) that is the fault of the Customer, then Kinexus shall provide for the reanalysis of the problematic samples at an additional charge of US \$200 per sample, provided Kinexus completes the full Kinex™ analyses for all Customer Samples. If the customer chooses not to resubmit samples for the Kinex™ analysis, Kinexus will charge a fee for the work incurred up to the point of difficulty at a cost of US \$400 per sample.
- 6.3 Events of Default. An event of default (an “Event of Default”) shall be deemed to occur upon a material breach of this Agreement by a party (including, without limitation, any breach of the provisions of Section 5) if the breaching party fails to remedy such breach within thirty (30) days after written notice thereof by the non-breaching party.
- 6.4 Effect of an Event of Default.
- (a) Remedies Available to Kinexus. If an Event of Default occurs relating to a material breach by the Customer, then Kinexus shall have the right, at its option exercisable in its sole discretion, in addition

to any other rights or remedies available to it at law or in equity, to immediately terminate this Agreement upon notice thereof to Customer, in which case Customer shall return to Kinexus, or, upon Kinexus' written instruction, destroy any Kinex™ or Kinetworks™ Report and all information, materials or documentation provided or made available by Kinexus pursuant to this Agreement, and any copies thereof (including electronic copies).

(b) Remedies Available to Customer. If an Event of Default occurs relating to a material breach by Kinexus, then Customer shall have the right, at its option exercisable in its sole discretion, in addition to any other rights or remedies available to it at law or in equity and subject to the limitations set forth in Section 7, to terminate this Agreement upon notice thereof to Kinexus.

6.5 Effect of Expiration or Termination of Agreement. The expiration or termination of this Agreement shall not relieve the parties of any obligation accruing prior to such expiration or termination. Kinexus will not be required to continue Kinex™ or Kinetworks™ analyses on a Sample after termination, and the Customer will be required to pay for work done prior to termination. The provisions of Sections 4, 5, 6, 7, 8, and 9 hereof shall survive any expiration or termination of this Agreement.

7. **DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITY**

7.1 Disclaimer of Warranties. THE KINEX™ OR KINETWORKS™ REPORT IS BEING SUPPLIED TO CUSTOMER WITH NO EXPRESS, IMPLIED, STATUTORY OR OTHER WARRANTIES, REPRESENTATIONS, CONDITIONS OR GUARANTEES, INCLUDING THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND DURABILITY. WITHOUT LIMITING THE FOREGOING, KINEXUS MAKES NO REPRESENTATION OR WARRANTY THAT THE USE OF THE KINEX™ OR KINETWORKS™ REPORT OR THE DATA THEREIN OR THE PERFORMANCE OF THIS AGREEMENT WILL NOT INFRINGE ANY INTELLECTUAL PROPERTY OR OTHER RIGHTS OF ANY THIRD PARTY.

7.2 Limitation of Liability. Kinexus shall not be liable for any use by Customer, its Affiliates, Corporate Partners, or Academic Collaborators of the Kinex™ or Kinetworks™ Report or any loss, claim, damage or liability, of whatever kind or nature, which may arise from or in connection with the use of the Kinex™ or Kinetworks™ Report or the data therein. NOTWITHSTANDING ANYTHING ELSE IN THIS AGREEMENT OR OTHERWISE TO THE CONTRARY, NEITHER KINEXUS NOR CUSTOMER WILL BE LIABLE TO EACH OTHER WITH RESPECT TO ANY MATTER ARISING UNDER THIS AGREEMENT UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR (I) ANY PUNITIVE, EXEMPLARY, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOST PROFITS OR (II) COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES. WITHOUT IN ANY WAY LIMITING THE FOREGOING, KINEXUS SHALL NOT, IN ANY EVENT, HAVE ANY LIABILITY WHATSOEVER IN CONNECTION WITH THIS AGREEMENT IN EXCESS OF AN AMOUNT EQUAL TO THE FEES PAID TO KINEXUS BY CUSTOMER HEREUNDER IN RESPECT OF THE SAMPLE(S) AT ISSUE.

8. **INDEMNIFICATION**

Except to the extent prohibited by law, Customer shall assume all liability for, and shall defend, indemnify and hold Kinexus, its Affiliates and their respective directors, officers, employees and agents harmless from, all claims, losses, damages or expenses (including reasonable attorneys' fees) arising directly or indirectly as a result of: (a) the use of the Kinex™ or Kinetworks™ Report or the data therein by Customer or its Affiliates, Corporate Partners or Academic Collaborators, or (b) the breach, untruthfulness or inaccuracy of any of the Customer's representations and warranties in this Agreement.

9. MISCELLANEOUS

- 9.1 Entire Agreement. The Appendices to this Agreement, together with all terms and conditions contained within this Agreement constitute the entire understanding between the parties with respect to the subject matter hereof and, with respect to any conflicting terms from prior agreements between the parties, supersedes and cancels such conflicting sections from all previous registrations, agreements, commitments and writings in respect thereof. This Agreement may be amended, or any term hereof modified, only by a written instrument duly executed by both parties hereto.
- 9.2 Assignment and Waiver. This Agreement may not be assigned or otherwise transferred by either party without the written consent of the other party, such consent will not be unreasonably withheld. Notwithstanding the foregoing, Kinexus may, without such consent, assign its rights and obligations under this Agreement (a) to any Affiliate or (b) to a Third Party in connection with a merger, consolidation or sale of such portion of its assets that includes rights under this Agreement provided, however, that Kinexus' rights and obligations under this Agreement shall be assumed by its successor in interest in any such transaction. In the event of such a transaction with Third Party, notwithstanding the other provisions of this Agreement, the intellectual property rights of such Third Party shall not be subject to the licenses granted by Kinexus under this Agreement. Any purported assignment in violation of the provisions of this Section 9.2 shall be void. Any permitted assignee shall assume all obligations of its assignor under this Agreement. The waiver by either party hereto of any right hereunder or the failure to perform or of a breach by the other party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by said other party whether of a similar nature or otherwise.
- 9.3 Force Majeure. Neither party shall be held liable or responsible to the other party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any obligation under this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the affected party, including but not limited to fire, floods, embargoes, war, acts of war (whether war is declared or not), insurrections, riots, civil commotions, strikes, lockouts or other labor or supply disturbances, acts of God or acts, omissions or delays in acting by any governmental authority or the other party; provided, however, that the party so affected shall use reasonable commercial efforts to avoid or remove such causes of nonperformance, and shall continue performance hereunder with reasonable dispatch whenever such causes are removed. Either party shall provide the other party with prompt written notice of any delay or failure to perform that occurs by reason of force majeure. The parties shall mutually seek a resolution of the delay or the failure to perform as noted above.
- 9.4 Notices. Any consent, notice, or report required or permitted to be given or made under this Agreement by one of the notification parties hereto to the other shall be in writing, delivered personally, by email or by facsimile (and promptly confirmed by telephone, personal delivery or courier) or courier, postage prepaid (where applicable), addressed to such other party at its address indicated below, or to such other address as the addressee shall have last furnished in writing to the addressor and shall be effective upon receipt by the addressee.

If to Kinexus:

Kinexus Bioinformatics Corporation
Suite 1, 8755 Ash Street
Vancouver, British Columbia, Canada V6P 6T3

Attention: Dr. Steven Pelech
President & C.S.O.
Telephone: (604) 323-2547 Extension 10
Facsimile: (604) 323-2548

If to Customer:

To Customer at the address designated at the front of this Agreement and to the attention of the duly authorized representative signing this Agreement.

- 9.5 Publicity. Except as required by law, the terms of this Agreement shall be treated as Confidential Information and shall not be disclosed to anyone (except for the parties' respective directors, officers, employees, consultants, agents and attorneys assisting in the review and negotiation of this Agreement and/or who have a need to know the terms of this Agreement) without the written consent of the other party, such consent which will not be unreasonably withheld. Notwithstanding the foregoing, (a) Kinexus may, without such consent, publicly announce the execution of this Agreement with Customer and may reference Customer as a KinexTM or KinetworksTM and Kinexus customer; and (b) if either party desires to release any other announcement relating to this Agreement, it shall first allow the other party to approve in writing such proposed announcement; and if the other party from which approval is sought does not respond within the five (5) business days of the delivery of a written request for such approval, such approval and consent shall be deemed to have been given by that other party at the end of that five (5) day period.
- 9.6 No Partnership. It is expressly agreed that the relationship between Kinexus and Customer shall not constitute a partnership, joint venture or agency. Neither Kinexus nor Customer shall have the authority to make any statements, representations or commitments of any kind, or to take any action, which shall be binding on the other, without the prior consent of the other party to do so.
- 9.7 Applicable Law. This Agreement shall be governed by, construed, interpreted and enforced in accordance with, the laws of the province of British Columbia and the laws of Canada, without reference to conflict of laws principles.
- 9.8 Dispute Resolution.
- (a) The parties hereby agree that they will attempt in good faith to resolve any controversy or claim arising out of or relating to this Agreement promptly by negotiations. If a controversy or claim should arise hereunder, the matter shall be referred to an individual designated by the Chief Executive Officer or President of Kinexus and an individual designated by the Chief Executive Officer (or the equivalent position) of Customer (the "Representatives"). If the matter has not been resolved within twenty-one (21) days of the first meeting of the Representatives of the parties (which period may be extended by mutual agreement) concerning such matter, subject to rights to injunctive relief and specific performance, and unless otherwise specifically provided for herein, any controversy or claim arising out of or relating to this Agreement, or the breach thereof, will be settled as set forth in Section 9.8(b).
- (b) All disputes arising in connection with this Agreement that are not resolved pursuant to Section 9.8(a) above shall be finally settled in Vancouver, British Columbia, by a single arbitrator appointed pursuant to the provisions of the *Commercial Arbitration Act* (British Columbia). Notwithstanding the above, either party has the right to bring an action in a court of competent jurisdiction against the other party for (i) any breach of such other party's duties of confidentiality pursuant to Section 5 of this Agreement; (ii) any infringement of its proprietary rights by the other party; and (iii) for interim protection such as, by way of example, an interim injunction. Judgment upon the arbitrator's award may be entered in any court of competent jurisdiction. The award of the arbitrator may include compensatory damages against either party, but under no circumstances will the arbitrator be authorized to, nor shall he/she, award punitive, consequential or incidental damages against either

party. The parties agree not to institute any litigation or proceedings against each other in connection with this Agreement except as provided in this Section 9.8.

- 9.9 Severability. Each party hereby agrees that it does not intend to violate any public policy, statutory or common laws, rules, regulations, treaty or decision of any government agency or executive body thereof of any country or community or association of countries. Should one or more provisions of this Agreement be or become invalid, the parties hereto shall substitute, by mutual consent, valid provisions for such invalid provisions which valid provisions in their economic effect are sufficiently similar to the invalid provisions that it can be reasonably assumed that the parties would have entered into this Agreement with such valid provisions. In case such valid provisions cannot be agreed upon, the invalidity of one or several provisions of this Agreement shall not affect the validity of this Agreement as a whole, unless the invalid provisions are of such essential importance to this Agreement that it is to be reasonably assumed that the parties would not have entered into this Agreement without the invalid provisions.
- 9.10 Counterparts. This Agreement may be executed in counterparts, each of which when executed and delivered is an original, but both of which together shall constitute one and the same instrument.
- 9.11 Fax Delivery. This Agreement may be executed by the parties and transmitted by facsimile and if so executed and transmitted this Agreement will be for all purposes as effective as if the parties had delivered an executed original Agreement.

IN WITNESS WHEREOF, the parties have caused their duly authorized officer to execute and deliver this Agreement as of the Effective Date.

Printed Name of Institute or Company

Per: _____
Signature of Authorized Representative

Name: _____
Printed Name of Authorized Representative

Title: _____
Printed Title of Authorized Representative

Date signed: _____

KINEXUS BIOINFORMATICS CORPORATION

Per: _____
Signature of Dr. Steven Pelech

Dr. Steven Pelech

President and Chief Scientific Officer

Date signed: _____