KAM-880 Service

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KINEX™ KAM-880

ANTIBODY MICROARRAY SERVICE
CUSTOMER INFORMATION PACKAGE

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OVERVIEW OF KINEX™ KAM–880 ANTIBODY MICROARRAY

1. INTRODUCTION

The Kinex™ signal transduction protein profiling services are convenient and very cost-effective solutions 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 including cell extracts, fresh or frozen tissues and serum samples. 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. Our unique integrated platform of proteomics and bioinformatics services and proprietary technologies makes the Kinex™ Antibody Microarray superior to any other commercially available antibody microarrays. In this Customer Information Package, we explain how the KAM-880 Antibody Microarray performs and how it can be most effectively used to advance your research programs.

The Kinex™ KAM-880 Antibody Microarray is our most powerful and advance antibody microarray chip to date, it was released in January 2015. It is the culmination of continuous on-going efforts to steadily improve the power and accuracy of our antibody microarrays over the last 6 years. Advantages of our KAM-880-based services include: screening with 877 highly validated and well characterized pan- and phosphosite-specific antibody probes, with wide coverage of cell signalling proteins and pathways; proprietary methods and reagents to reduce the rate of false positives and improve sensitivity; extensive follow up immunoblotting services for validation; and complementary bioinformatics analyses for comparison purposes and better understanding of the results.

If the shipment of frozen samples to Kinexus in Canada is too cost prohibitive for use of our proteomics services, we also offer an option where we can provide clients with Kinex™ KAM-880 Antibody Microarray Kits so that they can perform the initial stages of the analyses in their own laboratory. Processed microarray chips can then be sent to Kinexus for free scanning and preparation of a KAM-880 Report for a fee. Customers interested in this option should download our Kinex™ KAM-850 Antibody Microarray Kit Customer Information Package from our website.

2. HIGHLY VALIDATED ANTIBODIES

Our current Kinex™ KAM-880 Antibody Microarray monitors changes in the expression levels and phosphorylation states of signalling proteins which includes 518 pan-specific antibodies (for protein expression) and 359 phospho-site-specific antibodies (for phosphorylation). These antibodies, which have been selected from more than 6000 different commercial antibodies from over 26 companies, have been independently tested by Kinexus to identify many of the best immunological reagents available today to track important signal transduction proteins. The top 20% of these antibodies that performed well in Western blotting applications have been incorporated into our Kinex™ Antibody Microarrays. In addition, Kinexus has started production of well characterized cell signalling antibodies, many of which are incorporated into this latest KAM-880 Antibody Microarray. Such cherry-picking is apparently not performed by other microarray companies, which rely only on one or two suppliers with dubious information about individual antibody performance. When our clients utlize the KAM-880 antibody microarray, upon

request, we are pleased to disclose the commercial sources and in many cases, these antibodies are available directly from Kinexus. Immunoblots with the antibodies sold by Kinexus are available for easy viewing on our website. A complete listing of all the antibodies printed on the KAM-880 chip is provided or is downloadable from the Kinexus website. The classes of targeted proteins and phosphosites on the KAM-880 Antibody Microarray are listed in Table 1 below. The antibodies in our 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 many other diverse model systems.

Table 1. Families of protein targets for the KAM-880 Antibody Microarray chip. These statistics apply to Lot K00120 and may be slightly altered in future print runs of this microarray chip.

Content	Total %	Total Number
Total Number of pan-specific antibodies:	60%	518
Total Number of phospho-specific antibodies:	40%	359
Total Number of Antibodies	**100%**	**877**
Total Number of protein kinase pan-specific antibodies:	35%	307
Total Number of protein kinase phospho-specific antibodies:	23%	200
Total Number of protein phosphatase pan-specific antibodies:	7%	65
Total Number of protein phosphatase phospho-specific antibodies:	0.5%	4

3. QUALITY CONTROL PROCEDURES

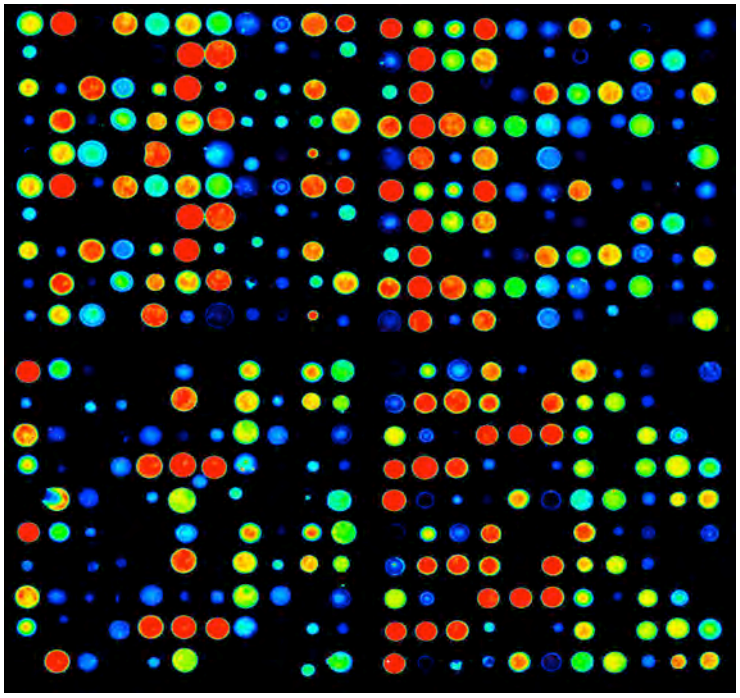
Our antibodies are covalently immobilized on a high quality glass surface coated with a proprietary 3-D polymer material to ensure high binding efficiency and specificity. Our microarrays are subjected to stringent quality control measures designed to ensure optimum antibody activity, printing consistency, and consistent intra-slide and inter-slide variability. Each microarray also has loading and antibody controls to ensure the amount of protein is consistent on all fields. The KAM-880 Antibody Microarray provides semi-quantitative analyses of the expression and phosphorylation states of cell signalling proteins in two samples. The quantitative analysis of the strength of the fluorescence signals for each target protein is based on duplicate measurements.

In internal studies with the latest KAM-880 Antibody Microarray and without chemical cleavage, we determined that the median spread between duplicate measurements with the same antibody in printed pairs was about 24% (i.e. the median range from the average of the duplicates was ±12% with a standard deviation of 2.0% from testing of 12 fields of 877 antibody pairs per field). With chemical cleavage, we determined that the median spread between duplicate measurements with the same antibody in printed pairs was about 30% (i.e. the median range from the average of the duplicates was ±15% with a standard deviation of 2.0% from testing of 54 fields of 877 antibody pairs per field). The frequency of flagged antibody spots dues to dust or mis-printing is less than 0.5%. When the average of duplicate measurements of antibody pairs on each chip was determined for the same sample applied to different KAM-880 Antibody Microarrays, we observed that the median value for the differences in the averages was ±8.1% with a standard deviation of 0.6% from testing of 4 pairs of fields. The dynamic range between the highest and lowest reproducible dye-bound protein signals from these Kinex™ chips was greater than 6,000-fold.

We strongly believe that the KAM-880 Antibody Microarray is the best commercial high content antibody array that is available in the market place today. The performance of our Kinex™ KAM chips exceeded the other leading antibody microarrays from at least three other companies when tested side-by-side in our hands. Most of our competitors, including Thermo-Fisher, Becton Dickinson, Clontech and Sigma-Aldrich have since discontinued offering their antibody microarray products.

For learning more about the procedures that Kinexus follows in performing our KAM-880 Antibody Microarray analyses, a series of demonstration videos are available for viewing on our company's You-Tube Channel at https://www.youtube.com/channel/UC_GL-BCsGRrnKiQ_6qV1jeA

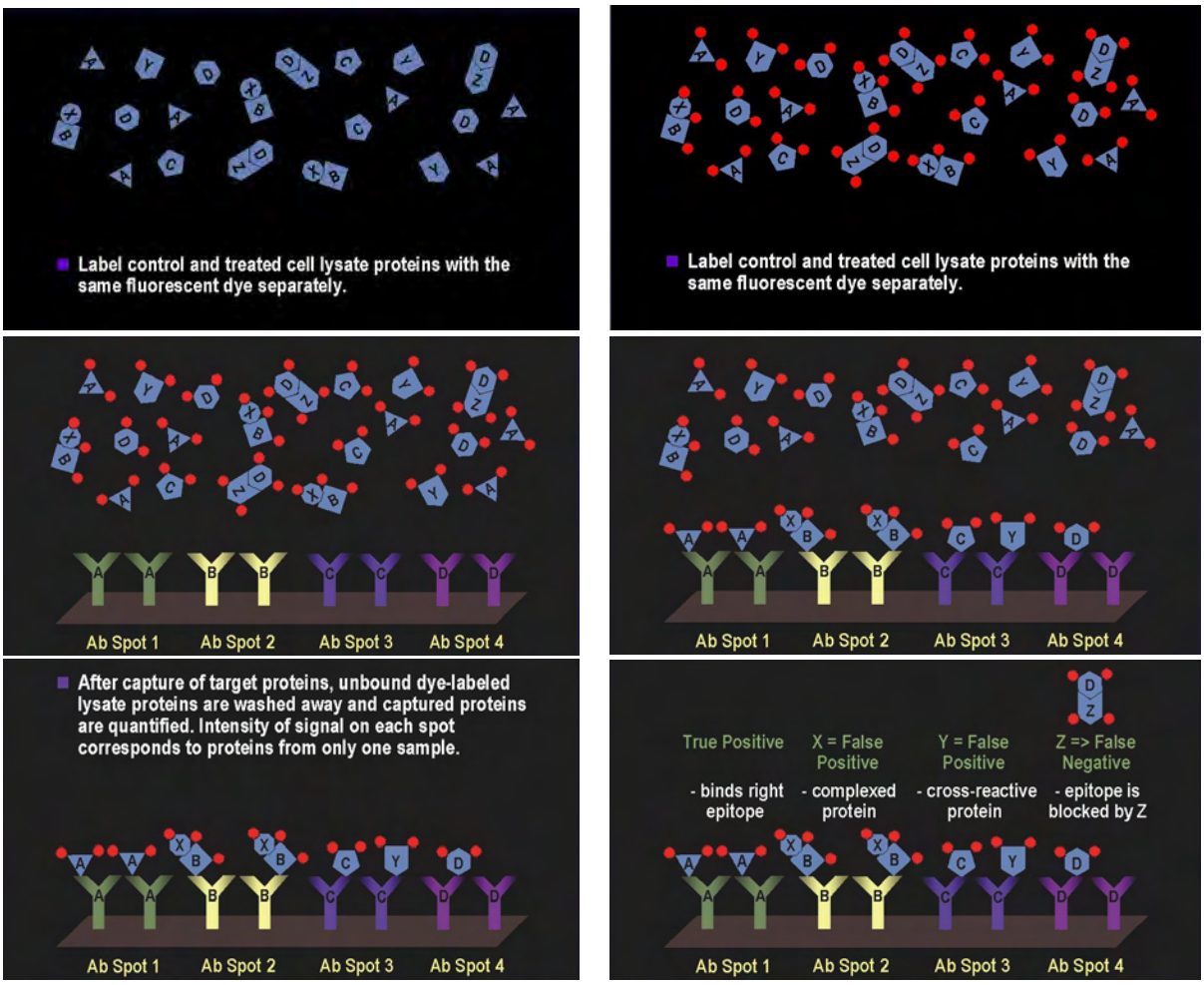
Figure 2. Close up scanned image of 4 of 32 grids that are divided into two fields on a Kinex™ KAM-880 Antibody Microarray chip. Decreasing signal intensity corresponds with a red to orange to yellow to green to blue transition.



4. PRINCIPLES OF BINDING AND DETECTION

The methodology behind the Kinex™ KAM-880 Antibody Microarray is illustrated in Figure 3. The issues of antibody cross-reactivity, protein complexes and epitope masking are highlighted in last panel.

Figure 3. Methodology used in Kinex™ KAM-880 Antibody Microarray.



5. PROPRIETARY DYE COMBINATION

One key advantage of our antibody microarrays is that lysate samples from control and treated cells are labeled with the same dyes and analyzed together on the same chip at the same time. These dyes are included with the Kinex™ KAM-880 Antibody Microarray Kit. In our experience, the use of a two dye, competitive binding system, 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 higher rate of false leads. Unlike oligonucleotides such as DNA and RNA, 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.

Colour changes seen with spots evident on a DIGE 2D gel may not be related to differences in protein expression 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 1,000-fold lower than structural proteins and metabolic pathway enzymes. Consequently, these low abundance proteins are usually not evident on 2D gels without some type of special pre-enrichment. This is why we feel that antibody-based detection of proteins with our Kinex™ KAM-880 Antibody Microarrays and our follow up Kinetworks™ Custom Screens are superior and complementary methods to undertake broad studies of proteins for signalling network analyses.

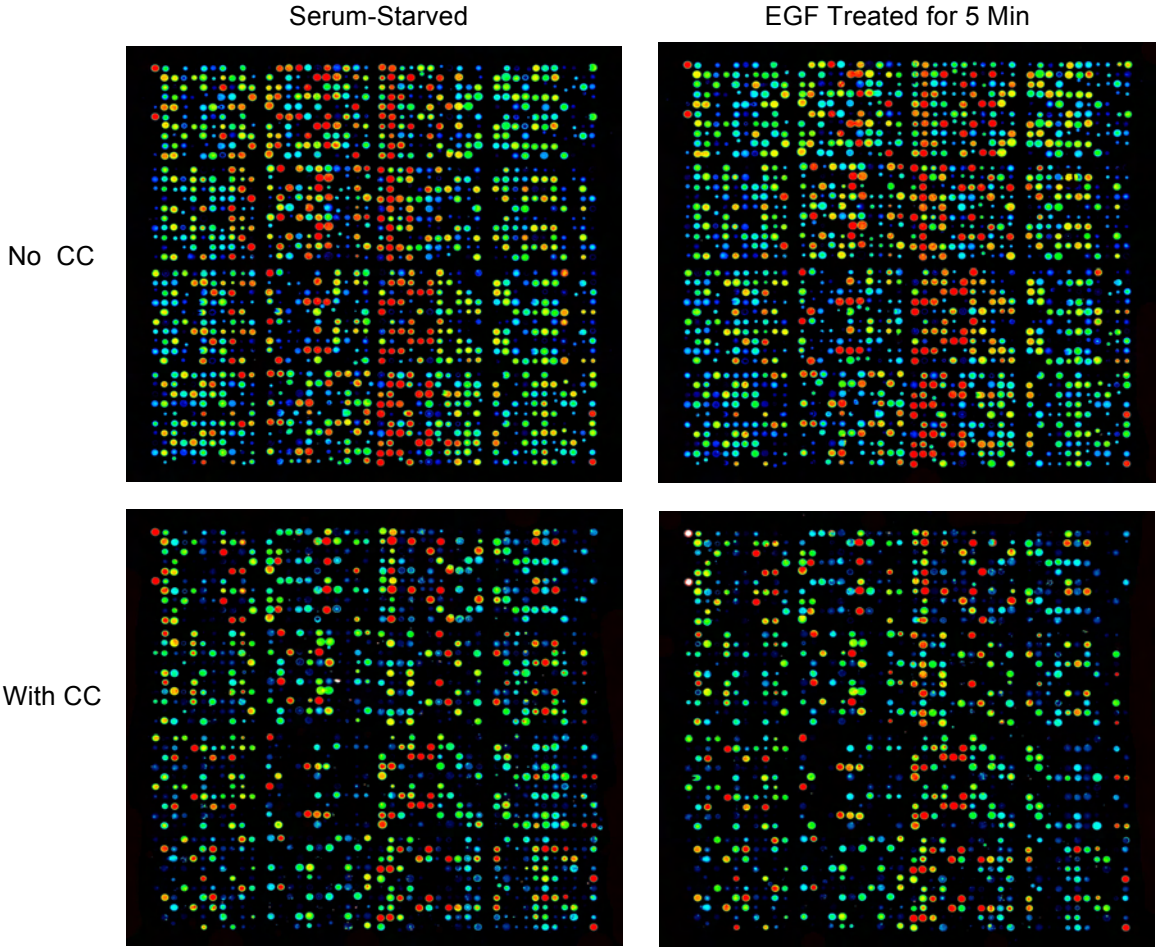
6. FALSE POSITIVES & FALSE NEGATIVES

Since non-denatured proteins are commonly analyzed by this method, as illustrated in the last panel of Figure 3, there is increased opportunity for false positives and false negatives due to antibody cross-reactivity and blocked epitopes in protein complexes. Many proteins reside in complexes with other proteins and antibodies, and as it is normally necessary to use non-denaturing conditions with antibody microarrays, many apparent changes in protein expressions or phosphorylations may arise from alterations in protein-protein interactions. In our internal studies with cells from different cells, tissues and species, only between 30 to 45% of the protein changes detected on a protein microarray were reproduced by immunoblotting. In addition, about 20 to 30% of the 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. It should be appreciated that this high rate of false positives is an inherent problem with all commercial antibody microarrays due to the reliance on non-denaturing conditions for immune capture of target proteins. To help reduce the number of false positives that are typically generated on a protein microarray, we have developed a proprietary chemical digestion step in which native proteins are cleaved into larger fragments. This fragmentation leads to dissociation of complexes, but does not destroy most of the epitopes recognized by phosphosite-antibodies. Typical enzymatic cleavage of proteins with proteases such as trypsin causes the loss of most phosphosite epitopes as basic amino acids commonly surround phosphoserine and phosphothreonine sites. This chemical digestion step is an option to reduce the number of false positives for clients that are less interested in tracking protein-protein interactions changes in experimental model systems. The reagents for this chemical cleavage step are utilized with the Kinex Microarray Service, but not provided with the KAM-880 Kit unless ordered separately, as many users may wish to also observe changes in protein-protein interactions in lysate samples from specimens from humans and animals. Table 2 summarizes the differences in results in the analysis of lysates from growth factor treated cells analyzed with and without the chemical cleavage step.

Table 2. Effect of chemical cleavage on the detection of protein changes on the KAM-880 antibody microarray using lysates from epidermal growth factor-treated A431 cells. Overnight, serum-starved A431 cells were treated with and without 100 nM EGF for 5 minutes prior to preparation of cell lysates. The lysates were dye-labeled either without or with prior chemical cleavage (CC). In the Table 2, the data is restricted to those antibodies that yielded Intensity signals that were greater than 300. With chemical cleavage, the Median Intensity signal for the antibody spots was reduced by 80% to 1149. Without chemical cleavage, the Median Intensity signal was 5843. Based on the data below, which represent the averaged results from three separate experiments, we conclude that chemical cleavage step shows more marked changes with EGF treatment and even improves the detection signals with some antibodies. While chemical cleavage produced a marked decline in the Intensity signals (based on Median values), the signal strength is still very high.

Effect of EGF	# Ab with ≥ 100% increase	# Ab with ≥ 50% increase	# Ab with ≥ 50% decrease	# Ab with ≥ 75% decrease
Without CC	44	92	31	1
With CC	48	142	11	0

Figure 4. Scanned images of a Kinex™ Antibody Microarray following incubation with dye-labeled lysate proteins from serum-starved A431 human cervical carcinoma cells treated without (left fields) and with 100 nM epidermal growth factor for 5 minutes (right fields). Prior chemical cleavage of the lysate proteins before incubation with the chips was either not performed (upper fields) or carried out (lower fields).



To provide a sense of the typical performance of individual antibodies on the Kinex™ KAM-880 Antibody Microarray and enable comparison of the specific results obtained with a tested customer cell/tissue lysate, we have generated an MS-Excel spreadsheet entitled “KAM-880_Performance.xlsx”. This file, which is provided along with our client’s specific KAM-880 results, features the results obtained from the analyses of 12 different cell or tissue lysates samples without chemical cleavage and 54 lysate samples with chemical cleavage. It also indicates which antibodies printed on the KAM-880 chips can be ordered directly from Kinexus for follow up studies.

7. KAM-880 ANTIBODY MICROARRAY REPORTS

Following scanning and quantification of the intensities of dye-bound proteins captured on the KAM-880 chip, we use our proprietary software to average the intensities recorded for each pair of antibody spots to calculate the differences between the control and treated lysate samples. This includes data normalization to account for slight differences in lysate protein loading, calculations of Z scores, percent changes from control (%CFC) and application of our proprietary Kinections Pathway Mapping analyses. This permits the identification of the most promising biomarkers for further validation by immunoblotting. The Kinections Pathway Maps provides direct linkage of subsets of the KAM-880 results with local signalling network maps for many of the proteins and phosphosites tracked on the KAM-880 microarray. The Report is in PDF and MS-Excel formats.

8. PRICING INFORMATION

Kinexus offers the Kinex™ services at different pricing levels depending on the level of confidentiality required for your samples. With the full analysis with 877 pan- and phospho-site-specific antibodies and full confidentiality, our regular price for the Kinex™ KAM-880 Antibody Microarray Services starts at US $2,998 per slide for each pair of samples submitted and analyzed in duplicate. 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 the pan-specific antibodies or the phosphosite-specific antibodies. To receive a further 40% discount off these prices, Kinexus requires the Non-Confidential Sample Description Form (KAM-NSDF) to be completed in full including species, organ, tissue, cell, cell state, fractionation, perturbation, and treatment for each sample being analyzed. The philosophy behind the non-confidential data pricing is to accelerate signal transduction research and knowledge within the scientific community. Please note that at any time, clients can change the status of their order from non-confidential to confidential by paying the difference in price. To receive a quotation or for a volume discount on large orders, please contact the Director of Sales & Marketing at 1-866-KINEXUS or 1-604-323-2547 (Extension 11) or e-mail sales@kinexus.ca

9. FOLLOW UP SERVICES

We highly recommend that all interesting leads generated with the Kinex™ KAM-880 Antibody Microarray should be validated by Western blotting before proceeding to other follow up work. Such validation is essential with any commercial or custom produced antibody microarray. To assist in this regard, Kinexus offers two cost-effective custom immunoblotting services.

Clients can use the Kinetworks™ Custom KCPS 1.0 (Multi-Antibody) Protein Screen, where any 18 antibodies used on the KAM-880 chip can be selected, and we can test whether they correctly detect their target proteins and phosphosites in your experimental model system. With the Kinetworks™ Custom KCSS 1.0 (Multi-Sample) Protein Screen, clients can send up to 8 different samples and choose up to 3 different antibodies, provided the molecular weights are significantly separated by SDS-PAGE. Lysate samples for Kinetworks™ analyses may be shipped without refrigeration to Kinexus if they are boiled and stored in SDS-PAGE sample buffer. More information about these Kinetworks™ services and the necessary forms can be download from our website.

The availability of these Kinetworks™ Custom screens is an important distinguishing feature of our antibody microarray services as clients can have their research leads conveniently and cost-effectively confirmed. The cost savings arising from the use of the Kinexus discovery platform becomes immediately apparent when one considers the purchase costs of individual antibodies and the labour necessary to confirm key antibody results obtained with other antibody microarrays. In addition, once the results are confirmed by Western blotting, clients can correlate their data with thousands of other data points from hundreds of different model systems using our KiNET databases, which contain the results from thousands of previous Kinetworks™ Immunoblots or Kinex™ Antibody Microarray analyses. Over 450 scientific publications have been published that reference the Kinexus Services, of which more than 150 are directly related to the Kinex™ Antibody Microarray Services.

In addition to the Kinetworks™ Custom Immunoblotting Services to validate leads, Kinexus can assist with many other aspects of your research project from start to finish. Other services that can be used in combination with our Kinex™ Antibody Microarray services include the following:

- *In vivo* services – send us your experimental compounds, proteins or oligonucleotides and we will perform the treatment of cells according to your specification and generate lysates for testing with our microarrays;
- Tissue or cell pellet processing – send us your cell pellets or tissues and we will prepare lysates for you;
- Mass spectrometry identification of antibody cross-reactive proteins;
- Custom Graphics – we can prepare pathway charts and bar graphs for your scientific publications;
- Custom Antibody Microarrays – we can print custom microarrays with hundreds of antibodies selected from our antibody library or supplied by you for your own internal research programs;
- Custom Antibody Macroarrays – we can print custom nitrocellulose or glass slide arrays with 10 to 100 or more antibodies from our antibody library or provided by you;
- Custom Reverse Phase Lysate Microarrays – we can print custom microarrays with hundreds of cell or tissue lysates to allow for further evaluation of the biological robustness of biomarkers identified through our Kinex™ Antibody Microarray services. These can be sourced from Kinexus or supplied by you;
- Custom Lysate Macroarrays – we can print custom nitrocellulose or glass slide arrays with 10 to 100 or more cell/tissue lysates slected from our library or supplied by you; and
- Kinase substrate or compound inhibitor profiling services with more than 350 active protein kinases to choose from.

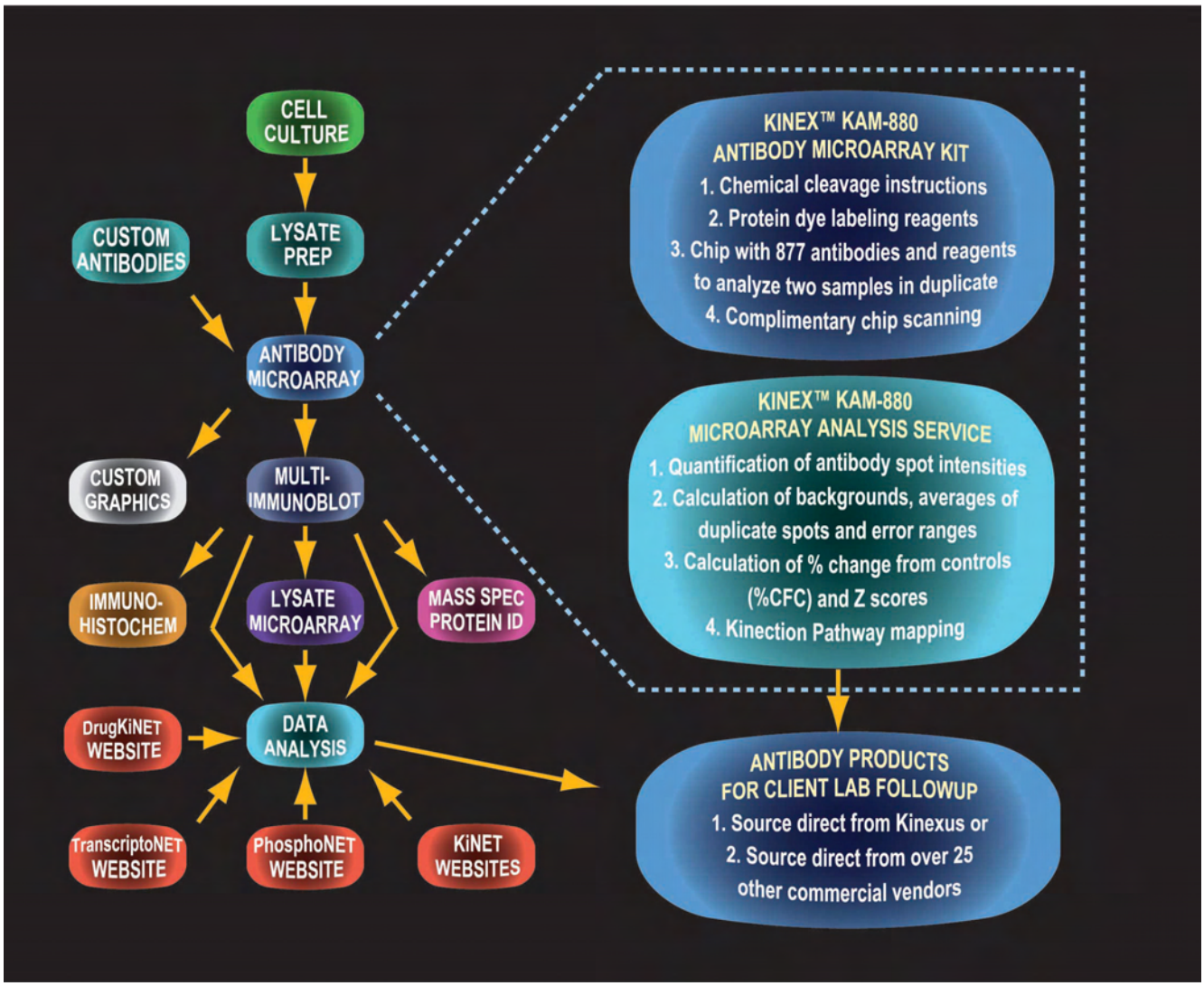
Kinexus also offers free services and open access online databases to clients which include the following:

- KiNET™ Antibody Microarray (KiNET-AM) DataBase (www.kinet-am.ca) – clients can directly compare their Kinex™ Antibody Microarray results with lysates from thousands of other experimental model systems analysed with the same methodology;
- KiNET™ Immunoblotting (KiNET-IB) DataBase (www.kinet.ca) – clients can compare the results from their validation immunoblotting data with hundreds of other experiments from hundreds of other model systems.
- PhosphoNET KnowledgeBase (www.phosphonet.ca) – clients can compare interesting phosphosites identified by our microarrays with over 180,000 confirmed and 800,000 additional predicted human

phosphosites to learn about their evolutionary conservation in up to 20 different species as well as the top 50 kinases predicted to phosphorylate these sites;

- TranscriptoNET KnowledgeBase (www.transcriptonet.ca) – clients can compare expression levels identified by our microarrays with the mRNA levels for over 21,000 human genes in 600 different human organs, tissues and cell lines.
- DrugKiNET KnowledgeBase (www.drugkinet.ca) – clients can identify the most potent inhibitors experimentally verified for all of the human protein kinases tracked on our microarrays as well as predicted inhibitors for off target kinases.
- OncoNET KnowledgeBase (www.onconet.ca) – clients can obtain information about the expression and mutation of many of the proteins tracked on our microarrays in diverse types of human cancers.

Figure 5. The Kinexus integrated platform of proteomics and bioinformatics services and products is a powerful discovery engine for biomarker discovery and validation, and antibody probe identification. The Kinex™ KAM-880 Antibody Microarray Kit enables clients to perform initial analyses in their own laboratories, but still gain access to a wide range of follow up services and products from Kinexus.



SAMPLE PREPARATION

10. QUANTITY OF LYSATE

The amount of protein requested for the Kinex™ KAM-880 Antibody Microarray service is 100 μg per sample at an approximate concentration of 2 mg/ml. If your samples have a higher concentration, we recommend sending it without further dilution and Kinexus will adjust the concentration as required during processing. In this case, we prefer a minimum volume of approximately 50 μl. If your samples have a lower concentration than 1.8 mg/ml, there are alternate steps that can be undertaken for ensuring optimum results. This includes concentrating your samples or providing additional dye-labeling reactions to your samples. Please contact a Kinexus Technical Service Representative for more information on how to proceed and the additional costs involved if your sample concentrations are low.

11. LYSIS BUFFER

The standard ingredients for our lysis buffer are listed below, however other lysis buffers commonly used for protein lysate preparation with non-ionic detergents should be compatible with the service. **However any lysis buffers containing Tris or reagents carrying reactive amine groups are not acceptable alternatives**. Please contact Kinexus for more information on the appropriate types of lysis buffers to use or email info@kinexus.ca to request an aliquot of our lysis buffer to be sent to you at no cost. We only require a courier account number to cover the shipping expenses. Your cell pellets or tissues 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% Triton X-100 (can be substituted with 1% Nonidet P-40) *** for total cellular fractionation**

Protease inhibitors and DTT to be added just before use:

9. 1 mM phenylmethylsulfonylfluoride (to inhibit proteases);
10. 3 mM benzamidine (to inhibit proteases);
11. 5 μM pepstatin A (to inhibit proteases);
12. 10 μM leupeptin (to inhibit proteases);
13. 1 mM dithiothreitol (to disrupt disulfate bonds).

The protease inhibitors and dithiothreitol (DTT) must be added to lysis buffer immediately before use and samples should be processed as quickly as possible. Not all protease inhibitors are required, but it is optimal to use as many as possible. For convenience, the Roche Complete Mini Inhibitor Cocktail tablet can be used to replace the individual protease inhibitors. The samples must be frozen and shipped to Kinexus on dry ice after protein quantification without any SDS-PAGE sample buffer as the proteins are to remain in their native structure and nondenatured.

12. PREPARING YOUR SAMPLES

A large body of information and instruction is provided with this information package. A careful review of this package and in particular the sample preparation protocols, will ensure that we can offer the highest level of quality in providing our unique proteomics services to you. If you have any questions or concerns, please call 604-323-2547, or email info@kinexus.ca and a Kinexus Technical Service Representative will be please to assist you.

Important points to remember include:

1. The cells or tissues should be processed quickly at 4°C or less;
2. Add the DTT and protease inhibitors to the lysis buffer just before processing;
3. Homogenization should not be performed in too large a volume of lysis buffer to obtain lysates at the concentration required;
4. Make sure the homogenization buffer does not include any free amines such as Tris buffer;
5. The detergent-soluble fraction should be obtained as quickly as possible after the cells or tissues are homogenized;
6. Sonication is required (do not over sonicate) and cannot be omitted;
7. The highest centrifugal forces available should be used to generate the detergent-soluble fraction; and
8. The supernatants should be frozen as quickly as possible if a protein assay cannot be performed immediately.

13. FRACTIONATIONS

There are different types of fractionations that can be performed, with the most common type being the total cellular or detergent soluble fraction. The type of lysis buffer used will vary depending on the type of fractionation you are considering to prepare.

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. This is the most common type of fractionation prepared by clients.

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 Fractionations:

At this time, we do not recommend that you send samples from immunoprecipitation or antibody affinity pull-down experiments for the Kinex™ Antibody Microarray Services.

14. CELL LYSATE PREPARATION

A. Adherent Cell Lysates

1. Remove medium from culture dishes containing approximately 1×10^6 to 2×10^6 cells for each sample to be analyzed by our Kinex™ Antibody Microarray Service. For the validation immunoblotting service, you will need to prepare about 10 times more cells or 1×10^7 to 2×10^7;
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 μl ice-cold lysis buffer to 150 mm culture dish per sample (more lysis buffer can be added if cells are concentrated); or add 100 μl 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 minutes at 4°C in a Beckman Table Top TL-100 ultracentrifuge, Beckman Airfuge or equivalent. Alternatively clients can also centrifuge on maximum speed (15,000-17,000 x g) on a benchtop Eppendorf microcentrifuge for 30 minutes at 4°C;
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;
9. Aliquot at least 100 μg for each lysate to be analyzed with our Kinex™ Antibody Microarray Service;
10. Save any remaining lysate for future validation studies. If you wish to have Kinexus perform the custom Western blotting analysis, aliquot 350-500 μg for each 18 proteins to be tested, or if sample quantity is limited, aliquot 50 μg of sample for each 3 proteins to be tested; and
11. Label your microcentrifuge tubes and freeze immediately.

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); and
5. Repeat steps # 5 through 11 as described in the Adherent Cell Lysate Section above.

15. 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 (>2×10^6 cells) for processing. If you would like to have the Kinetworks™ validation performed, the number of cells required is ten-fold higher (>2×10^7 cells).

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 or scrape the cells with a rubber policeman, 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); and
5. Freeze the pellets for shipping. Pellets must be shipped on dry ice.

B. Suspended Cells

Simply follow steps 3-5 above for *"for adherent cells"* and freeze the cell pellet immediately. Pellets must be shipped on dry ice.

16. TISSUE LYSATE 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 minutes at 4°C in a Beckman Table Top TL-100 ultracentrifuge, Beckman Airfuge or equivalent. Alternatively clients can also centrifuge on maximum speed (15,000 – 17,000 x g) on a benchtop Eppendorf microcentrifuge for 30 minutes at 4°C;
6. Transfer the resulting supernatant fraction to a new tube and subject it to protein assay. Using a commercial Bradford assay or using the standard protocol of Bradford. Bovine serum albumin should be used as the protein standard;
7. Aliquot at least 100 μg for each lysate to be analyzed with our Kinex™ Antibody Microarray Service;
8. Save any remaining lysate for future validation studies. If you wish to have Kinexus perform the custom Western blotting analysis, aliquot 350-500 μg for each 18 proteins to be tested, or if sample quantity is limited, aliquot 50 μg of sample for each 3 proteins to be tested; and
9. Label your microcentrifuge tubes and freeze immediately.

17. PREPARATION OF TISSUES

An additional charge of $200 per sample will apply for submission of tissue samples to be processed at Kinexus. Freshly harvested tissues are preferred if possible. When harvesting, the tissues should be cut into small pieces (no larger than 0.5 x 0.5 x 0.5 cm^3) and quickly rinsed in ice-cold PBS to remove any blood or other contamination on the surface. Wrap the tissues individually in tinfoil and snap freeze them in liquid nitrogen for 10 minutes before storing them at -80 °C. The tissues should be shipped on dry ice.

SHIPPING INFORMATION

18. STORAGE OF SAMPLES

The final protein concentration of the cell/tissue samples should be approximately 2 mg/ml. Please record the actual concentration and volume of each sample on the Sample Description Form (KAM-NSDF or KAM-CSDF). We request **100 µg** of cell or tissue lysate for each sample submitted for analysis with the Kinex™ Antibody Microarray. If any of our custom validation immunoblotting studies are to be performed based on the analysis of your Kinex™ results, we recommend sending additional lysate at this time to save on future shipping costs. We request 350-500 µg of additional material for every 18 antibodies selected for validation Western blotting. Samples should be stored in screw cap vials. The vials should be clearly labeled with an indelible marker with a unique identification number,parafilmed to protect against leakage, and put into another support structure such as a small box or 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 or inadequate completion of shipping documentation.

19. DRY ICE SHIPMENTS

Shipments sent within North America normally arrive at our facility the following day. Therefore, we recommend shipping from Monday to Wednesday to allow sufficient time to arrive safely at our facility in case of delays due to Customs or weather. For shipments from outside of North America, we recommend sending your package on Monday as shipments can take up to 5 days to arrive depending on location. You should pack enough dry ice to last a minimum of 3 days in transit (for within North America) or 5 days (for outside of North America) and preferably use large dry ice chunks mixed with nuggets to fill in the extra spaces. Dry ice sublimes at a rate of 10 to 30% (or 5-10 pounds) every 24 hours depending on the thickness of the Styrofoam container used and the size and weight of the dry ice. Pack the dry ice just before shipping to help preserve its shelf-life. Appropriate dry ice labels must be placed on the outside of the box and the weight of dry ice in kilograms written inside the label.

20. SHIPPING DETAILS

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 and e-mail info@kinexus.ca with the courier details so we can track your package for you while it is in transit:

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
Email: info@kinexus.ca

21. FORMS TO BE COMPLETED

Fillable MS-Word versions of our forms are directly downloadable from the Kinexus website or by request. Customers are required to complete the following forms for each order placed. The forms can be printed and included with your samples.

A. Service Order Form (KABM-SOF)

Please ensure:

- Address and contact name and numbers are specified
- Billing or accounting information is completed
- Any quotations are listed in the billing sections
- Include a Purchase Order, Visa or MasterCard number for payment
- The form is signed and dated

B. Service Identification Form (KABM-SIF)

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 (NSDF-LY) or Confidential (CSDF-LY) 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 KABM-SIF form
- In Section D, the level of confidentiality is indicated for correct pricing
- The form is certified correct and signed and dated

C. Sample Description Forms

Customers should choose which type of Sample Description Form is applicable to their samples. The Non-Confidential Sample Description Form (KAM-NSDF) is required to obtain the lower, non-confidential price. One form is required to be completed in full for every cell or tissue lysate submitted at this pricing level. If your samples are confidential, the the Confidential Sample Description Form (KAM-CSDF) should be used.

For each lysate submitted, please ensure the following:

- Each sample tube is labeled and properly identified on the form in Section B, including the final concentration and volume
- A minimum of 100 ug of protein is provided for each sample submitted
- Please be as accurate as possible in completing the Non-Confidential Form. A Technical Service Representative may contact you for additional information regarding any sample details that are unclear
- The form is certified correct and signed and dated

D. Proteomics Services Agreement

A Proteomics Services 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, Principal Investigator, or Director of Research, before the first order can be processed, but does not have to be signed again for repeat orders. The Proteomics Service Agreement is typically valid for 15 years. If you require changes or modifications to be made to our standard service agreement, please email 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 back to us for our final approval.

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 large Styrofoam shipping container
- 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
- Contact the courier to pick up the samples from you institute before the cut off time.
- For shipments coming from within Canada or the United States, it is preferable to 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
- Customers should e-mail the date of shipment and the courier airway bill number with number of samples to Kinexus at info@kinexus.ca to ensure we can track and monitor your package in transit
- For customers located outside of Canada, 3 copies of a commercial invoice are 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 name, address, and telephone number
- Country of export and 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 on the outside of the package along with the airway bill

Please ensure 3 copies of a signed commercial invoice accompany your shipment which specifies your samples are "non hazardous, non infectious, and non-toxic and for research purposes only". Since the samples are not for resale, the value of your shipment should be priced low, we recommend $1.00 per sample, to avoid paying additional duties and taxes on entry into Canada. It is also 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. If we know your package tracking number, we can often pick up your package if it misses the cut off time for the courier delivery. We will send an e-mail confirmation once your shipment arrives safely at our facility.

The international air waybill is required for all international shipments. It is your customs declaration, which can possibly be used to clear your shipment through customs at the destination. If the description on your commercial invoice is too vague or missing information, 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.

Form: KABM-SOF

KINEX™ ANTIBODY MICROARRAY SERVICES — SERVICE ORDER FORM

Subject to terms of the Kinexus Proteomics Services Agreement

KINEXUS ORDER NUMBER
For Kinexus internal use only.

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™ KABM REPORTS

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

BILLING INFORMATION

Kinex™ Antibody Microarray (KABM) Services offered for the detection with up to 518 pan- and/or 359 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-880FN 850 Ab microarrays (2 non-confidential samples)__ @ US $1770 per microarray $_____
No. of KAM-880EN 518 Pan-Ab microarrays (2 non-confidential samples) @ US $1180 per microarray + $_____
No. of KAM-880PN 359 Phospho-Ab microarrays (2 non-confidential samples) @ US $1180 per microarray + $_____
No. of KAM-880FC 880 Ab microarrays (2 full confidential samples) @ US $2998 per microarray + $_____
No. of KAM-880EC 518 Pan-Ab microarrays (2 full confidential samples) @ US $1998 per microarray + $_____
No. of KAM-880PC 359 Phospho-Ab microarrays (2 full confidential samples) @ US $1998 per microarray + $_____
No. of KAM-880FP 880 Ab microarrays (1 non-confidential & 1 full confidential sample) @ US $2384 per microarray + $_____
No. of KAM-880EP 518 Pan-Ab microarrays (1 non-confidential & 1 full confidential sample) @ US $1589 per microarray + $_____
No. of KAM-880PP 359 Phospho-Ab microarrays (1 non-confidential & 1 full confidential sample) @ US $1589 per microarray + $_____

Total # of samples submitted: _____ Total # of Kinex™ antibody microarrays: _____ **Subtotal** = $_____

Chemical Cleavage Option Total # of Kinex™ antibody microarrays: _____ @ US $150 per microarray + $_____

***Quotation or Reference Number*:** _____ - $_____

TOTAL COST FOR THIS ORDER = $_____

FOR CANADIAN CUSTOMERS ONLY:
Add applicable GST to the above total (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 PROTEOMICS SERVICES AGREEMENT AND AGREES TO BE BOUND BY THE TERMS AND CONDITIONS:

Print Name of Authorized Representative or Principal Investigator — *Authorized Signature* — *Date y/m/d)*

How did you originally hear about the KABM Services? ☐ ***Direct Mail*** ☐ ***Email*** ☐ ***Web Site*** ☐ ***Advertisement*** ☐ ***Referral*** ☐ ***Conference or Trade Show*** ☐ ***Other***

Form: KABM-SIF

KINEX™ ANTIBODY MICROARRAY SERVICE IDENTIFICATION FORM

Subject to terms of the Kinexus Proteomics Services Agreement

KINEXUS ORDER NUMBER

NAME: _____ **COMPANY/INSTITUTE:** _____

(Authorized Representative or Principal Investigator)

STANDARD KINEX™ KABM SCREENING SERVICES REQUESTED: (WITH CLIENT LYSATES + KINEXUS ANTIBODY MICROARRAY)

Use this form to order one or more of the nine Standard Kinex™ Antibody Microarray (KABM) Services currently offered by Kinexus. Please check the appropriate tick boxes. If you need assistance, 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. An electronic fillable MS-Word version of this form can be downloaded from the Kinexus website or supplied upon request.

☐ STANDARD SERVICE REQUESTED: KABM

Standard Antibody Microarrays (518 pan-specific and/or 359 phospho-site-specific antibodies) and Two (2) Samples per Microarray

100 µg protein for each cell or tissue lysate sample is required

KINEXUS ID NUMBER

(Bar Code Identification Number)

For Kinexus Internal Use Only.

A. CLIENT SCREEN ID NAME:

Customer ID:

Provide ID name of your choice for your reference and for use in Box B of the "Client-Supplied Non-confidential Sample Description" (NSDF-SDF-LY) and "Client-Supplied Confidential Sample Description" (CSDFSDF-LY) forms.

B. KINEX™ SCREEN SELECTION:

Kinexus currently offers nine (1) Standard Kinex™Antibody Microarray KABM screening services. Check with the Kinexus website at www.kinexus.ca for new releases.

- ☐ **KAM-880FN** 880 Pan & phospho-specific Ab microarray (2 non-confidential samples)
- ☐ **KAM-880EN** 518 Pan-specific Ab microarray (2 non-confidential samples)
- ☐ **KAM-850PN** 359 Phospho-Ab microarray (2 non-confidential samples)
- ☐ **KAM-880FC** 880 Pan & phospho-specific Ab microarray (2 full confidential samples)
- ☐ **KAM-880EC** 518 Pan-specific Ab microarray (2 full confidential samples)
- ☐ **KAM-880PC** 359 Phospho-Ab microarray (2 full confidential samples)
- ☐ **KAM-880FP** 880 Ab microarray (1 non-confidential & 1 full confidential sample)
- ☐ **KAM-880EP** 518 Pan-Ab microarray (1 non-confidential & 1 full confidential sample)
- ☐ **KAM-880PP** 359 Phospho-Ab microarray (1 non-confidential & 1 full confidential sample)

C. SAMPLE IDENTIFICATION:

For each client supplied sample, please complete a "Client-Supplied Non-confidential Sample Description Form" (NSDF-SDF-LY) or a "Client-Supplied Confidential Sample Description Form" (CSDF-LY). There should be 2 completed Sample Description Forms per Client Screen ID Name.

D. CHEMICAL CLEAVAGE SELECTION:

☐ Check box is the lysate proteins are to be subjected to chemical cleavage to reduce protein-protein potential interactions.

E. PRICING:

- ☐ KAM-880FN 2 non-confidential samples = $1770.
- ☐ KAM-880EN 2 non-confidential samples = $1180
- ☐ KAM-880PN 2 non-confidential samples = $1180
- ☐ KAM-880FC 2 full confidential samples = $2998
- ☐ KAM-880EC 2 full confidential samples = $1998
- ☐ KAM-880PC 2 full confidential samples = $1998
- ☐ KAM-880FP 1 non-confid. + 1 confid. sample = $2384
- ☐ KAM-880EP 1 non-confid. + 1 confid. sample = $1589
- ☐ KAM-880PP 1 non-confid. + 1 confid. sample = $1589
- ☐ Chemical cleavage 2 samples per 1 microarray = $150

Use this pricing information for completion and submission of Service Order Form KABM-SOF.

_____ _____ _____

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

KINEXUS

Form: NSDF-LY

KINEXUS ORDER NUMBER

CLIENT SUPPLIED
FOR LYSATES NON-CONFIDENTIAL SAMPLE DESCRIPTION FORM

Subject to terms of the Kinexus Service Agreement

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

Non-Confidential Service Requested and Lysate Sample Details:

Please refer to the Customer Information Package for the particular Kinexus proteomics service that you are requesting for details on how to prepare and ship your lysates to Kinexus for testing. Clients are required to complete all Sections A-K to qualify for the Non-Confidential pricing level for the Kinexus' Proteomics Services if they provide their own lysates for analysis. If sample details are to remain Confidential, please complete instead the "Client-Supplied Confidential Sample Description Form" (CSDF-LY) in Sections A-C. If you need further assistance, 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. Please check the appropriate tick boxes.

A. CLIENT SCREEN ID NAME + KINEXUS SERVICES NAME:

CLIENT ID: _____ KINEXUS PROTEOMICS SERVICES NAME: _____
Use the Client ID Name that you entered in Box B on the Service Identification Form (SIF). The Kinexus Proteomics Services abbreviated name should be used from the SIF.

B. SAMPLE IDENTIFICATION:

Client Name for Sample: _____ Control: ❑ Yes ❑ No

Concentration (mg/ml): _____ Volume (µl): _____

C. SPECIES:

❑ Human *(Homo sapiens)* Sex: ❑ Male ❑ Female ❑ M/F pooled ❑ Unknown

❑ Rat *(Rattus norvegicus)* # Animals: ____ Age: _____ Weight: _____

❑ Mouse *(Mus musculus)*

❑ Other – *Provide scientific & common name:* _____

KINEXUS ID NUMBER (FOR INTERNAL USE ONLY)
(Bar Code Identification Number)

D. SAMPLE SOURCE:

Tissues: ❑ Yes ❑ No *If yes, proceed to Section E*

Cells: ❑ Yes ❑ No *If yes, proceed to Section F*

E. TISSUES:

A. Organ source of tissue: _____

B. Tissue name: _____

C. Disease condition if appropriate: _____

F. CELLS: Is your sample a primary culture? ❑ Yes ❑ No

Is your sample an established cell line? ❑ Yes ❑ No

A. Name of cell line: _____

B. Organ source of cells: _____

C. Tissue or cell type: _____

D. Disease condition if appropriate: _____

G. CELL STATE: ❑ N/A

❑ Subconfluent ❑ Quiescent

❑ Confluent ❑ Scenescent

❑ Proliferating ❑ Apoptosing

❑ Differentiated ❑ Stressed

H. FRACTIONATION:

❑ Detergent-solubilized total lysate

❑ Cytosolic (Soluble)

❑ Particulate (Detergent-solubilized)

❑ IP - *If yes, indicate antibody or ligand used:* _____

❑ Other purification: _____

I. PERTURBATION:

❑ Normal untreated *If yes, proceed to Section K*

❑ Normal treated *If yes, proceed to Section J*

❑ Diseased untreated *If yes, proceed to Section K*

❑ Diseased treated *If yes, proceed to Section J*

J. TREATMENTS: *Please indicated if you used combined [CMB] or sequential [SEQ] treatments and provide details on your treatment:*

1. Name of compound/stimuli: _____ Concentration: _____ Time: _____ ❑ CMB ❑ SEQ

2. Name of compound/stimuli: _____ Concentration: _____ Time: _____ ❑ CMB ❑ SEQ

3. Name of compound/stimuli: _____ Concentration: _____ Time: _____ ❑ CMB ❑ SEQ

Details of treatment: _____

K. ADDITIONAL SAMPLE INFORMATION: *Please include any additional information that differentiates your samples:*

Transgenic: ❑ Yes ❑ No Knockout: ❑ Yes ❑ No Wildtype: ❑ Yes ❑ No Transfected/Over-expressed: ❑ Yes ❑ No Mutant: ❑ Yes ❑ No

If you answered yes to any of the above, please specify details including if there was any deprivation (such as serum/growth factor/drug/site of mutation) prior to treatment:

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. 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 (y/m/d)*

Form: CSDF-LY

FOR LYSATES

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 Lysate Sample Details:

Please refer to the Customer Information Package for the particular Kinexus proteomics service that you are requesting for details on how to prepare and ship your lysates to Kinexus for testing. Clients are required to complete Sections A-C for the Confidential pricing level for Kinexus' Proteomics Services if they provide their own lysates for analysis. Note that a Confidential analysis is performed at a higher pricing level than a Non-Confidential analysis. Clients should instead complete all of Sections A-C on the "Client-Supplied Non-Confidential Sample Description Form" (NSDF-LY) to qualify for the non-confidential pricing. To obtain further assistance, 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. Please check the appropriate tick boxes.

A. CLIENT SCREEN ID NAME + KINEXUS SERVICES NAME:

CLIENT ID: _____ KINEXUS PROTEOMICS SERVICES NAME: _____

Use the Client ID Name that you entered in Box B on the Service Identification Form (SIF). The Kinexus Proteomics Services abbreviated name should be used from the SIF.

B. SAMPLE IDENTIFICATION:

Client Name for Sample: _____ Control: ❑ Yes ❑ No

Concentration (mg/ml): _____ Volume (µl): _____

C. SPECIES:

❑ Human *(Homo sapiens)* Sex: ❑ Male ❑ Female ❑ M/F pooled ❑ Unknown

❑ Rat *(Rattus norvegicus)* # Animals: ____ Age: _____ Weight: _____

❑ Mouse *(Mus musculus)*

❑ Other – *Provide scientific & common name:* _____

KINEXUS ID NUMBER (FOR INTERNAL USE ONLY)

(Bar Code Identification Number)

A. CLIENT SCREEN ID NAME + KINEXUS SERVICES NAME:

CLIENT ID: _____ KINEXUS PROTEOMICS SERVICES NAME: _____

Use the Client ID Name that you entered in Box B on the Service Identification Form (SIF). The Kinexus Proteomics Services abbreviated name should be used from the SIF.

B. SAMPLE IDENTIFICATION:

Client Name for Sample: _____ Control: ❑ Yes ❑ No

Concentration (mg/ml): _____ Volume (µl): _____

C. SPECIES:

❑ Human *(Homo sapiens)* Sex: ❑ Male ❑ Female ❑ M/F pooled ❑ Unknown

❑ Rat *(Rattus norvegicus)* # Animals: ____ Age: _____ Weight: _____

❑ Mouse *(Mus musculus)*

❑ Other – *Provide scientific & common name:* _____

KINEXUS ID NUMBER (FOR INTERNAL USE ONLY)

(Bar Code Identification Number)

A. CLIENT SCREEN ID NAME + KINEXUS SERVICES NAME:

CLIENT ID: _____ KINEXUS PROTEOMICS SERVICES NAME: _____

Use the Client ID Name that you entered in Box B on the Service Identification Form (SIF). The Kinexus Proteomics Services abbreviated name should be used from the SIF.

B. SAMPLE IDENTIFICATION:

Client Name for Sample: _____ Control: ❑ Yes ❑ No

Concentration (mg/ml): _____ Volume (µl): _____

C. SPECIES:

❑ Human *(Homo sapiens)* Sex: ❑ Male ❑ Female ❑ M/F pooled ❑ Unknown

❑ Rat *(Rattus norvegicus)* # Animals: ____ Age: _____ Weight: _____

❑ Mouse *(Mus musculus)*

❑ Other – *Provide scientific & common name:* _____

KINEXUS ID NUMBER (FOR INTERNAL USE ONLY)

(Bar Code Identification 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 (y/m/d)*

COMMERCIAL INVOICE

DATE OF EXPORTATION	EXPORT REFERENCES
SHIPPER/EXPORTER	**CONSIGNEE** Kinexus Bioinformatics Corporation Suite 1 8755 Ash Street Vancouver, B.C. Canada V6P 6T3 Telephone: (604) 323-2547 Facsimile: (604) 232-2548 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 Courier Name: Number:	

NO. OF PKGS	TYPE OF PACKAGING	QUANTITY OF SAMPLES	COMPLETE AND ACCURATE COMMODITY DESCRIPTION	UNIT VALUE
	__ FedEx Letter __ FedEx Pak __ Box __ Other	*Total number of 1.5 ml Eppendorf tubes:*	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 *per sample*

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

LISTING OF ANTIBODIES

No.	Target Protein	Phospho Site	Antibody Code	Type	RefSeq
1	4E-BP1	Pan-specific	NN166	RpAb	NP_004086
2	4E-BP1	T45	PN114	RpAb	NP_004086
3	4E-BP1	S65	PN001	RpAb	NP_004086
4	4G10	pTyr	CN005	MmAb	N/A
5	A6r	Y309	PK502	RpAb	NP_009215.1
6	AAK1	S637	PK503	RpAb	NP_055726.3
7	Abl	Pan-specific	NK001	MmAb	NP_005148
8	Abl	Y393	PK001	RpAb	NP_005148
9	Abl	Pan-Specific	NK001-2	RpAb	NP_005148
10	AcCoA carboxylase	S79	PN002	RpAb	NP_000655
11	ACK1	Pan-specific	NK002	RpAb	NP_005772
12	ACTA1 (Alpha -actin)	Pan-specific	CN001	GpAb	NP_001091.1
13	Adducin a/g	S662	PN003-PN004	RpAb	NP_058432
14	AIF	Pan-specific	NN002	GpAb	NP_004199
15	AK2	Pan-specific	NN003	RpAb	NP_001616
16	Akt1	Pan-Specific	NK129-5	RpAb	NP_005154
17	Akt1	Y326	PK517	RpAb	NP_005154
18	Akt1	Pan-Specific	NK129-3	RpAb	NP_005154
19	Akt1 (PKBa)	Pan-specific	NK129	MmAb	NP_005154
20	Akt1 (PKBa)	S473	PK072-3	RpAb	NP_005154
21	Akt1 (PKBa)	S473	PK072-5	RpAb	NP_005154
22	Akt1 (PKBa)	S473	PK072-1	RpAb	NP_005154
23	Akt1 (PKBa)	Y474	PK148	RpAb	NP_005154
24	Akt2	Pan-Specific	NK130-8	RpAb	NP_001617
25	Akt2	Pan-Specific	NK130-9	RpAb	NP_001617
26	Akt2	Pan-specific	NK130-6	GpAb	NP_001617
27	Akt2	Pan-specific	NK130-7	GpAb	NP_001617
28	Akt2	Pan-Specific	NK130-4	RpAb	NP_001617
29	Akt3	Pan-Specific	NK131-3	RpAb	NP_005456
30	ALK	Pan-specific	NK003	RpAb	AAB71619
31	ALK	Y1507	PK520	RpAb	AAB71619
32	AMPKa2	S377	PK522	RpAb	NP_006243.2
33	ANKRD3	S438	PK523	RpAb	NP_065690.2
34	ANXA2	Y238	PN504	RpAb	NP_001002857.1
35	APG1	Pan-specific	NN004	RpAb	NP_055093
36	APG2	Pan-specific	NN122	RpAb	BAA75062
37	APP	T743	PN189	RpAb	NP_000475.1
38	A-Raf	Pan-specific	NK205-2	RpAb	NP_001645.1
39	A-Raf	Pan-Specific	NK205-4	RpAb	NP_001645.1
40	A-Raf	Pan-Specific	NK205-5	RpAb	NP_001645.1
41	A-Raf	Y302	PK500	RpAb	NP_001645.1
42	Arrestin b	S412	PN133	RpAb	NP_004032
43	Arrestin b	Pan-specific	NN121	MmAb	NP_004032
44	ASK1	Pan-specific	NK007-2	RpAb	NP_005914
45	ASK1	Pan-specific	NK007	RpAb	NP_005914
46	ASK1	S966	PK143	RpAb	NP_005914
47	ATF2	T69+T71	PN006-1	RpAb	NP_001871
48	ATF2	S94/S112	PN115	RpAb	NP_001871
49	AurKA	Pan-Specific	NK008-3	RpAb	NP_940835
50	AurKA	Pan-Specific	NK008-4	RpAb	NP_940835
51	AurKA	Pan-Specific	NK008-5	RpAb	NP_940835
52	AurKB	Pan-Specific	NK193-2	RpAb	NP_004208
53	AurKB	Pan-Specific	NK193-3	RpAb	NP_004208
54	AurKB	Pan-Specific	NK193-4	RpAb	NP_004208
55	AurKB	S227	PK530	RpAb	NP_004208
56	AurKC	Pan-Specific	NK009-2	RpAb	NP_003151
57	B23 (NPM)	T199	PN008	RpAb	NP_002511
58	B23 (NPM)	T234/237	PN009	RpAb	NP_002511
59	Bak	Pan-specific	NN000	RpAb	NP_001179
60	Bax	Pan-specific	NN005	RpAb	NP_620116
61	BCKD (BCKDK)	Pan-Specific	NK257-1	RpAb	NP_001116429.1
62	BCL	Pan-specific	NN006-1	RpAb	NP_000624

63	Bcl2	Pan-specific	NN006	MmAb	NP_000624
64	Bcl-XL	Pan-specific	NN007	MmAb	NP_612815
65	Bcl-xS/L	Pan-specific	NN008	RpAb	NP_612815
66	Bcr	Y177	PK164	RpAb	NP_004318.3
67	Bcr	Y177	PK538	RpAb	NP_004318.3
68	Bid	Pan-specific	NN009	GpAb	NP_001187
69	BLK	Y188	PK542	RpAb	NP_001706.2
70	BLNK	Y84	PN013	RpAb	NP_037446
71	BMX (Etk)	Pan-specific	NK012	MmAb	NP_001712
72	BMX (Etk)	Y40	PK003	RpAb	NP_001712
73	B-Raf	S446+pS447	PK534	RpAb	NP_004324
74	B-Raf	S729	PK535	RpAb	NP_004324
75	B-Raf	Pan-Specific	NK156-4	RpAb	NP_004324
76	B-Raf	Pan-specific	NK156	RpAb	NP_004324
77	B-Raf	Pan-Specific	NK156-5	RpAb	NP_004324
78	BRCA1	S1497	PN014	RpAb	NP_009225
79	BRCA1	S1423	PN116	RpAb	NP_009225
80	BRD2	Pan-specific	NK013	RpAb	NP_005095
81	BRSK1	T189	PK549	RpAb	NP_115806.1
82	Btk	Pan-specific	NK014	RpAb	NP_000052
83	CA9	Pan-specific	NN174	RpAb	XP_006716930.1
84	Caldesmon	S789	PN015	RpAb	NP_004333
85	Calnexin	Pan-specific	NN136-2	RpAb	NP_001019820.1
86	Calreticulin	Pan-specific	NN137-1	RpAb	NP_004334.1
87	CaMK1d	Pan-specific	NK016-2	GpAb	NP_003647
88	CaMK2a	T286	PK555	RpAb	NP_057065.2
89	CAMK2d	Pan-specific	NK019-2	RpAb	NP_742126
90	CaMK4	Pan-specific	NK021-3	RpAb	NP_001735
91	CaMK4	T200	PK556	RpAb	NP_001735.1
92	CamKI	Pan-specific	NK211	GpAb	NP_003647.1
93	CaMKK	Pan-Specific	NK022	RpAb	NP_006540
94	Cas-L	Y166	PN505	RpAb	NP_001135865.1
95	Caspase 1	Pan-specific	NN011	RpAb	NP_001214
96	Caspase 3	Pan-specific	NN013	RpAb	NP_004337
97	Caspase 6	Pan-specific	NN016	MmAb	NP_001217
98	Caspase 7	Pan-specific	NN017-2	RpAb	NP_01218
99	Catenin a	S641	PN162	RpAb	NP_001277236.1
100	Catenin b	Y333	PN167	RpAb	NP_001895
101	Catenin b	Pan-specific	NN021	RpAb	NP_001895
102	Catenin b	S33	PN166	RpAb	NP_001895
103	Catenin b1	Pan-Specific	NN021-1	RpAb	NP_001895
104	Caveolin 1	Pan-specific	NN167	RpAb	NP_001166366.1
105	Caveolin 1	Y14	PN147	RpAb	NP_001166366.1
106	Caveolin 2	S36	PN018	RpAb	NP_001224
107	Caveolin 2	Pan-specific	NN022-1	MmAb	NP_001224
108	c-Cbl	Y700	PN171	RpAb	NP_005179.2
109	CD45	Pan-specific	NP001	MmAb	NP_002829
110	CD63	Pan-specific	NN186	RpAb	NP_001244318.1
111	Cdc2 p34	Pan-specific	NK025-5	MmAb	NP_001777
112	Cdc2 p34	Pan-specific	NK025-6	RpAb	NP_001777
113	CDC25A	Pan-Specific	NP038-2	RpAb	NP_001780.2
114	CDC25A	Pan-Specific	NP038-3	RpAb	NP_001780.2
115	CDC25A	Pan-Specific	NP038-1	RpAb	NP_001780.2
116	Cdc25B	Pan-specific	NP002	MmAb	NP_004349
117	Cdc25B	Pan-Specific	NP002-2	RpAb	NP_004349
118	Cdc25B	Pan-Specific	NP002-3	RpAb	NP_004349
119	Cdc25C	Pan-Specific	NP003-2	RpAb	NP_001781
120	Cdc25C	Pan-Specific	NP003-3	RpAb	NP_001781
121	Cdc25C	Pan-specific	NP003	RpAb	NP_001781
122	CDC2L5	Pan-specific	NK024	RpAb	NP_003709
123	Cdc34	Pan-specific	NN023	MmAb	NP_004350
124	CDC42	Pan-specific	NN024	MmAb	NP_001782
125	CDC7	T376	PK558	RpAb	NP_001127891.1
126	CDK1	Pan-specific	NK025-1	MmAb	NP_001777
127	CDK1	Pan-specific	NK025-2	MmAb	NP_001777

128	CDK1	Y19	PK563	RpAb	NP_001777
129	CDK1/2	Y15	PK007-3	RpAb	NP_001777
130	CDK1/2	Y15	PK007-1	RpAb	NP_001777
131	CDK1/2	Y14/Y15	PK006	RpAb	NP_001777
132	CDK1/CDC2	T161	PK008-1	RpAb	NP_001777
133	CDK11A	T583	PK565	RpAb	NP_076916.2
134	CDK2	Pan-specific	NK026-5	RpAb	NP_001789
135	CDK2	Pan-specific	NK026-6	RpAb	NP_001789
136	CDK2	Pan-specific	NK026-7	MmAb	NP_001789
137	CDK2	Pan-specific	NK026-3	MmAb	NP_001789
138	CDK4	Pan-specific	NK027	MmAb	NP_000066
139	CDK4	T172	PK569	RpAb	NP_000066
140	CDK4	Pan-specific	NK027-2	RpAb	NP_000066
141	CDK5	Pan-specific	NK028-2	RpAb	NP_004926
142	CDK5	Pan-specific	NK028-4	RpAb	NP_004926
143	CDK5	Pan-specific	NK028-5	MmAb	NP_004926
144	CDK6	Pan-specific	NK029	MmAb	NP_001250
145	CDK6	Y13	PK165	RpAb	NP_001250
146	CDK6	Pan-specific	NK029-3	RpAb	NP_001250
147	CDK7	Pan-specific	NK030-2	MmAb	NP_001790
148	CDK8	Pan-specific	NK031-5	GpAb	NP_001252
149	CDK9	Pan-specific	NK032	RpAb	NP_001252.1
150	CDK9	S347	PK574	RpAb	NP_001252.1
151	CDK9	T186	PK575	RpAb	NP_001252.1
152	Chk1	Pan-specific	NK034-2	RpAb	NP_001265
153	Chk1	S317	PK578	RpAb	NP_001265
154	Chk1	S280	PK162	RpAb	NP_001265
155	Chk1	Pan-specific	NK034	MmAb	NP_001265
156	Chk1	S280	PK577	RpAb	NP_001265
157	Chk1	S345	PK579	RpAb	NP_001265
158	Chk2	Pan-specific	NK035	RpAb	NP_009125
159	Chk2	T68	PK119	RpAb	NP_009125
160	Chk2	T68	PK581	RpAb	NP_009125
161	CK1d	Pan-specific	NK036	GpAb	NP_001884
162	CK1e	Pan-specific	NK037-1	MmAb	NP_001885
163	CK2a	Pan-Specific	NK041	RpAb	NP_001887
164	CK2a	T360/S362	PK167	RpAb	NP_001887
165	Cofilin	Pan-specific	NN026	MmAb	NP_005498
166	Cofilin 1	S3	PN019	RpAb	NP_005498
167	Cofilin 2	S3	PN020	RpAb	NP_068733
168	Connexin 43	S367	PN148	RpAb	NP_000156.1
169	Cortactin	Y466	PN022-2	RpAb	NP_031829
170	COT	Pan-Specific	NK042-2	RpAb	NP_005195
171	COT	Pan-Specific	NK042	RpAb	NP_005195
172	COX2	Pan-specific	NN027	MmAb	NP_000954
173	CPG16/CaMKinase VI	Pan-specific	NK043	MmAb	NP_004725
174	cPKCII	Pan-specific	NK134-2	RpAb	AAA60095
175	CREB1	S129/S133	PN023	RpAb	NP_004370
176	CREB1	S133	PN024	RpAb	NP_004370
177	CrkL (32H4)	Pan-specific	NN182	MmAb	NP_005198.1
178	Crystallin aB	S45	PN110	RpAb	NP_001876
179	Crystallin aB	Pan-specific	NN149-1	RpAb	NP_001876
180	Crystallin aB	Pan-specific	NN149-2	MmAb	NP_001876
181	Crystallin aB	S19	PN025	RpAb	NP_001876
182	CSF1R	Y699	PK587	RpAb	NP_001275634.1
183	CSF1R	Pan-Specific	NK234-3	RpAb	NP_001275634.1
184	Csk	Pan-specific	NK044	MmAb	NP_004374
185	Csk	Pan-specific	NK044-2	RpAb	NP_004374
186	Cyclin A	Pan-specific	NN028	RpAb	NP_003905
187	Cyclin B1	S147	PN190	RpAb	NP_114172
188	Cyclin B1	Pan-specific	NN029	MmAb	NP_114172
189	Cyclin D1	Pan-specific	NN030-1	RmAb	NP_444284
190	Cyclin E	Pan-specific	NN031	MmAb	NP_001229
191	Cyclin E	T395	PN191	RpAb	NP_001229
192	Cyclin G1	Pan-specific	NN032	RpAb	NP_004051

193	CytoC	Pan-specific	NN033	RpAb	NP_061820
194	Dab1	Y198	PN026	RpAb	NP_066566
195	DAXX	Pan-specific	NN034	RpAb	NP_001341
196	DDR1	Y796+pY797	PK591	RpAb	NP_001189450.1
197	DGKZ	Pan-specific	NK219	RpAb	NP_963290
198	DNAPK	Pan-specific	NK048	RpAb	NP_008835
199	DNAPK	T2609	PK595	RpAb	NP_008835
200	Dok2	Y142	PN027-2	RpAb	NP_034201
201	Dok2	Y142	PN027	RpAb	NP_034201
202	DRAK2	Pan-specific	NK050	RpAb	NP_004217
203	DUSP1 (MKP1)	Pan-Specific	NP006-2	RpAb	NP_004408.1
204	DUSP1 (MKP1)	Pan-Specific	NP006-3	RpAb	NP_004408.1
205	DUSP10	Pan-Specific	NP047-2	RpAb	NP_009138.1
206	DUSP11	Pan-Specific	NP045-3	RpAb	NP_001558.3
207	DUSP11	Pan-Specific	NP045-2	RpAb	NP_001558.3
208	DUSP12	Pan-Specific	NP046-2	RpAb	NP_009171.1
209	DUSP12	Pan-Specific	NP046-3	RpAb	NP_009171.1
210	DUSP2	Pan-Specific	NP008-4	RpAb	NP_004409.1
211	DUSP2	Pan-Specific	NP008-2	RpAb	NP_004409.1
212	DUSP3	Pan-Specific	NP030-2	RpAb	NP_004081.1
213	DUSP3	Pan-Specific	NP030-3	RpAb	NP_004081.1
214	DUSP3	Pan-Specific	NP030-4	RpAb	NP_004081.1
215	DUSP4	Pan-Specific	NP007-3	RpAb	NP_001385.1
216	DUSP4	Pan-Specific	NP007-4	RpAb	NP_001385.1
217	DUSP5	Pan-Specific	NP039-2	RpAb	NP_004410.3
218	DUSP6	Pan-Specific	NP040-2	RpAb	NP_001937.2
219	DUSP6	Pan-Specific	NP040-3	RpAb	NP_001937.2
220	DUSP6	Pan-Specific	NP040-1	RpAb	NP_001937.2
221	DUSP7	Pan-Specific	NP041-3	RpAb	NP_001938.2
222	DUSP7	Pan-Specific	NP041-1	RpAb	NP_001938.2
223	DUSP7	Pan-Specific	NP041-2	RpAb	NP_001938.2
224	DUSP8	Pan-Specific	NP042-3	RpAb	NP_004411.2
225	DUSP9	Pan-Specific	NP043-2	RpAb	NP_001386.1
226	eEF1A1	Y141	PN509	RpAb	NP_001393.1
227	EFNA5	Pan-Specific	NN175	RpAb	NP_001953.1
228	EGFR	Y1148	PK010	RpAb	NP_005219
229	EGFR	Pan-Specific	NK052-4	RpAb	NP_005219
230	EGFR	Y1197	PK011-1	RpAb	NP_005219
231	EGFR	Y1068	PK122-1	RpAb	NP_005219
232	EGFR	Y1148	PK010-2	RpAb	NP_005219
233	EGFR	T693	PK121	RpAb	NP_005219
234	EGFR	Pan-Specific	NK052-5	RpAb	NP_005219
235	EGFR	Pan-specific	NK052-1	RpAb	NP_005219
236	EGFR	Y1110	PK123	RpAb	NP_005219
237	EGFR	Pan-Specific	NK052-6	RpAb	NP_005219
238	EGFR	Y998	PK603	RpAb	NP_005219
239	eIF2a	Pan-specific	NN038-1	RpAb	NP_004085
240	eIF2a	S52	PN028-1	RpAb	NP_004085
241	eIF2a	S52	PN028-2	RpAb	NP_004085
242	eIF4B	S422	PN172	RpAb	NP_001287750.1
243	eIF4E	S209	PN030-1	RpAb	NP_001959
244	eIF4E	S209	PN030-2	RpAb	NP_001959
245	eIF4E	Pan-specific	NN039-1	MmAb	NP_001959
246	eIF4G	S1232	PN193	RpAb	NP_004944
247	eIF4G	S1108	PN031	RpAb	NP_004944
248	Elk 1	Pan-specific	NN168	RpAb	NP_001107595.1
249	Elk1	S383	PN149	RpAb	NP_001107595.1
250	Elk1	S389	PN170	RpAb	NP_001107595.1
251	Epcam	Pan-Specific	NN173	RpAb	NP_002345.2
252	EphA1	Pan-specific	NK053	RpAb	NP_005223
253	Ephrin-B2	Y316	PN173	RpAb	NP_004084.1
254	ERB2	T686	PK134	RpAb	NP_004439
255	ErbB2	Pan-specific	NK054-2	RpAb	NP_004439
256	ErbB2	Pan-Specific	NK054-4	RpAb	NP_004439
257	ErbB2	Pan-Specific	NK054-5	RpAb	NP_004439

258	ErbB2	Y1248	PK013-1	RpAb	NP_004439
259	ErbB3	Pan-Specific	NK231-2	RpAb	NP_001005915.1
260	ErbB3	Pan-Specific	NK231-3	RpAb	NP_001005915.1
261	ErbB3	Y1328	PK163	RpAb	NP_001005915.1
262	ErbB4	Pan-Specific	NK235-3	RpAb	NP_001036064.1
263	ErbB4	Pan-Specific	NK235-1	RpAb	NP_001036064.1
264	ERK1	Pan-Specific	NK055-2	RpAb	AAA36142.1, NP_002736
265	ERK1	Y204+T207	PK866	RpAb	AAA36142.1, NP_002736
266	ERK1	Pan-Specific	NK055-3	RpAb	AAA36142.1, NP_002736
267	ERK1	S74	PK867	RpAb	AAA36142.1, NP_002736
268	ERK1	Pan-specific	NK055-NK056	RpAb	AAA36142.1, NP_002736
269	ERK1	Pan-Specific	NK055-1	RpAb	AAA36142.1, NP_002736
270	ERK1	T207	PK865	RpAb	AAA36142.1, NP_002736
271	ERK1	T202+Y204	PK621	RpAb	AAA36142.1, NP_002736
272	ERK1	Y204	PK864	RpAb	AAA36142.1, NP_002736
273	ERK1/2	Pan-specific	NK055-NK056-2	RpAb	AAA36142.1, NP_002736
274	ERK1/2	Y204	PK168-PK169	RpAb	AAA36142.1
275	ERK1/2	T202	PK170-PK171	RpAb	AAA36142.1
276	ERK2	Pan-Specific	NK056-3	RpAb	NP_002736
277	ERK2	Pan-Specific	NK056-4	RpAb	NP_002736
278	ERK3	Pan-specific	NK057-2	RpAb	NP_002739
279	ERK3	Pan-specific	NK058	RpAb	NP_002738
280	ERK4	S186	PK624	RpAb	NP_001278968.1
281	ERK5	T218+Y220	PK016-3	RpAb	NP_620602
282	ERK5	Pan-specific	NK206-3	GpAb	NP_620602
283	ERK5	Pan-Specific	NK206-4	RpAb	NP_620602
284	ERK5	Pan-Specific	NK206-5	RpAb	NP_620602
285	ERK5	T219+Y221	PK625	RpAb	NP_002740.2
286	ERK5	Y221	PK626	RpAb	NP_002740.2
287	Estrongen Receptor	S104	PN198	RpAb	NP_000116.2
288	Ezrin	T567	PN174	RpAb	NP_001104547.1
289	Ezrin	Y353	PN175	RpAb	NP_001104547.1
290	FAK	S722	PK020	RpAb	NP_005598
291	FAK	Y576+Y577	PK151	RpAb	NP_005598
292	FAK	S732	PK021	RpAb	NP_005598
293	FAK	Pan-specific	NK060	RpAb	NP_005598
294	FAK	S910	PK024	RpAb	NP_005598
295	FAK	Y397	PK017	RpAb	NP_005598
296	FAK	Y397	PK017-1	MmAb	NP_005598
297	FAK	S722	PK020-3	RpAb	NP_005598
298	FAK	Y577	PK629	RpAb	NP_005598
299	FAS	Pan-specific	NN042	RpAb	NP_003789
300	FasL	Pan-specific	NN043	MmAb	NP_000630
301	Fes	Pan-specific	NK061	RpAb	NP_001996
302	FGFR1	Pan-Specific	NK062-3	RpAb	NP_001167534.1
303	FGFR1	Y653+Y654	PK634	RpAb	NP_001167534.1
304	FGFR2	Pan-Specific	NK063-3	RpAb	NP_000132.3
305	FGFR2	Pan-Specific	NK063-4	RpAb	NP_000132.3
306	FGFR2	Pan-Specific	NK063-2	RpAb	NP_000132.3
307	FGFR3	Pan-Specific	NK236-2	RpAb	NP_000133.1
308	FGFR3	Pan-Specific	NK236-3	RpAb	NP_000133.1
309	FGFR3	Y647+Y648	PK637	RpAb	NP_000133.1
310	FHL2	Pan-Specific	NN172	RpAb	NP_001034581.1
311	FKHR	S256	PN194	RpAb	NP_002006.2
312	FKHR	S319	PN195	RpAb	NP_002006.2
313	Flt3	Pan-Specific	NK240-1	RpAb	NP_004110.2
314	Fos	Pan-specific	NN044	RpAb	NP_005243
315	Fos	T232	PN033	RpAb	NP_005243
316	FRK	Y387	PK641	RpAb	NP_002022.1
317	FRS2	Y349	PN146	RpAb	NP_001036020.1
318	Fyn	Pan-specific	NK065	MmAb	NP_002028
319	Gab1	Y627	PN192	RpAb	NP_002030.2
320	GADD 153 (CHOP)	Pan-specific	NN163	MmAb	-
321	GATA1	S142	PN196	RpAb	NP_002040.1
322	GCK	Pan-specific	NK066	GpAb	NP_004570

323	GFAP	S8	PN034	MmAb	NP_002046
324	GluR1	S849	PN178	RpAb	NP_000818.2
325	GNB2L1	Pan-specific	NN045	RpAb	NP_006089
326	GRK2	Pan-specific	NK067	RpAb	NP_001610
327	GRK2	S670	PK025	RpAb	NP_001610
328	GroEL	Pan-specific	NN046	RpAb	NP_002147
329	Grp75	Pan-specific	NN047	MmAb	NP_004125
330	Grp78	Pan-specific	NN048-2	RpAb	NP_005338
331	Grp78	Pan-specific	NN048	RpAb	NP_005338
332	Grp94	Pan-specific	NN049	RpAb	NP_003290
333	GSK3a	Y284+Y285	PK650	RpAb	NP_063937
334	GSK3a	T19+pS21	PK648	RpAb	NP_063937
335	GSK3a/b	Pan-specific	NK069-NK070-2	MmAb	NP_063937
336	GSK3a/b	Y279/Y216	PK028-PK029-1	RpAb	NP_063937
337	GTF2F1	S385+T389	PK651	RpAb	NP_002087.2
338	Haspin	Pan-specific	NK071	RpAb	NP_114171
339	HDAC4	Pan-specific	NN169	RpAb	NP_006028.2
340	HDAC4/5/9	S246/259/220	PN179-PN180-PN181	RpAb	NP_006028.2
341	HDAC5	S498	PN188	RpAb	NP_001015053.1
342	hHR23B	Pan-specific	NN050	MmAb	NP_002865
343	Hip	Pan-specific	NN051	RpAb	NP_003923
344	Histone H2A.X	S139	PN036	MmAb	NP_002096
345	Histone H2B	S14	PN037	RpAb	NP_778225
346	Histone H3	S28	PN039	RpAb	NP_003521
347	Histone H3	T11	PN100	RpAb	NP_003521
348	Histone H3	T3	PN101	RpAb	NP_003521
349	Histone H3	S10	PN038	RpAb	NP_003521
350	Histone H3	T3	PN101-2	RmAb	NP_003521
351	HO1	Pan-specific	NN052	RpAb	NP_002124
352	HO2	Pan-specific	NN053	RpAb	NP_003923
353	Hpk1	Pan-specific	NK072	GpAb	NP_002096
354	Hsc70	Pan-specific	NN054-2	RpAb	NP_003521
355	Hsc70	Pan-specific	NN054	MmAb	NP_778225
356	HSF4	Pan-specific	NN055	MmAb	NP_003521
357	Hsp105	Pan-specific	NN062	RpAb	NP_003521
358	Hsp25	Pan-specific	NN152-1	RpAb	NP_003521
359	Hsp25	S82	PN042-3	RpAb	NP_003521
360	Hsp27	S86	PN042-1	RpAb	NP_001531
361	Hsp27	S78	PN041	RpAb	NP_001531
362	Hsp27	S15	PN040-2	RpAb	NP_002124
363	Hsp40	Pan-specific	NN057-2	MmAb	NP_006136
364	Hsp40	Pan-specific	NN057-3	RpAb	NP_006136
365	Hsp47	Pan-specific	NN058	MmAb	NP_001226
366	Hsp60	Pan-specific	NN059-2	MmAb	NP_002147
367	Hsp60	Pan-specific	NN059-3	MmAb	NP_002147
368	Hsp60	Pan-specific	NN059-1	MmAb	NP_002147
369	Hsp70	Pan-specific	NN060-2	MmAb	NP_005336
370	Hsp70	Pan-specific	NN060-3	RpAb	NP_005336
371	Hsp90	Pan-specific	NN061	MmAb	NP_005339
372	Hsp90 alpha	Pan-specific	NN061-16	RpAb	NP_005339
373	hsp90 beta	Pan-specific	NN165-1	RpAb	NP_031381
374	Hsp90a	Pan-specific	NN164	MmAb	NP_005339
375	Hsp90b	S254	PN176	RpAb	NP_031381
376	Hsp90b	Pan-specific	NN165	MmAb	NP_031381
377	HspBP1	Pan-specific	NN063	MmAb	NP_036399
378	HSTK12 (Aurora 2)	Pan-specific	NK193	RpAb	NP_004208
379	Huntingtin	S421	PN103	RpAb	NP_002102
380	I1PP2A (PHAPI)	Pan-specific	NN130	RpAb	NP_006296
381	I2PP2A (PHAPII)	Pan-specific	NN131	RpAb	NP_003002
382	IAP1	Pan-specific	NN025	RpAb	NP_001156
383	ICK	Y156+T157	PK655	RpAb	NP_055735.1
384	IGF1R	Y1346	PK658	RpAb	NP_000866
385	IGF1R	Y1280	PK152	RpAb	NP_000866
386	IGF1R	Y1165/Y1166	PK153	RpAb	NP_000866
387	IkB Kinase alpha	Pan-specific	NK075-6	MmAb	NP_001269

388	IkBa	Pan-specific	NN064	RpAb	NP_065390
389	IkBa	Y42	PN164	RpAb	NP_065390
390	IkBb	Pan-specific	NN065	RpAb	NP_002494
391	IkBe	S22	PN168	RpAb	NP_004547.2
392	IKKa	Pan-specific	NK075-2	MmAb	NP_001269
393	IKKa	T23	PK154	RpAb	NP_001269
394	IKKa	Pan-specific	NK075-3	RpAb	NP_001269
395	IKKg/NEMO	Pan-specific	NN161	MmAb	NP_003630
396	ILK1	Pan-specific	NK078-2	RpAb	NP_001547
397	ILK1	Y351	PK662	RpAb	NP_001547
398	InsR	Y1189	PK663	RpAb	NP_000199
399	Insulin Receptor b	Pan-specific	NK079	MmAb	NP_000199
400	Integrin a4	S988	PN043	RpAb	NP_000876
401	Integrin b1	S785	PN044	RpAb	NP_002202
402	IR	Y972	PK032-1	RpAb	NP_000199
403	IR/IGF1R	Y1162/Y1163	PK033	RpAb	NP_000866
404	IRAK1	Pan-specific	NK080-2	RpAb	NP_001560
405	IRAK2	Pan-specific	NK081	RpAb	NP_001561.3
406	IRAK4	T345+S346	PK665	RpAb	NP_001107654.1
407	IRS1	Y1179	PN046-2	RpAb	NP_005535
408	IRS1	S312	PN117	RpAb	NP_005535
409	IRS1	S639	PN118	RpAb	NP_005535
410	IRS1	Y612	PN045	RpAb	NP_005535
411	IκB-α	Pan-specific	NN064-2	RpAb	NP_065390
412	JAK1	Y1022	PK126	RpAb	NP_002218
413	JAK1	Pan-Specific	NK084-5	RpAb	NP_002218
414	JAK2	Pan-specific	NK085	RpAb	NP_004963
415	JAK2	Pan-Specific	NK085-4	RpAb	NP_004963
416	JAK2	Y1007/1008	PK034-2	RpAb	NP_004963
417	JAK2	Pan-Specific	NK085-2	RpAb	NP_004963
418	JAK2	Y1007+Y1008	PK034-1	RpAb	NP_004963
419	JAK2	Pan-Specific	NK085-3	RpAb	NP_004963
420	JAK3	Pan-specific	NK086	MmAb	NP_000206
421	JAK3	Pan-Specific	NK086-2	RpAb	NP_000206
422	JAK3	Pan-Specific	NK086-3	RpAb	NP_000206
423	JAK3	Pan-Specific	NK086-4	RpAb	NP_000206
424	JAK3	Y980+Y981	PK669	RpAb	NP_000206
425	JNK	T183/Y185	PK035-2	RpAb	NP_002741
426	JNK	T183/Y185	PK035-1	RpAb	NP_002741
427	JNK	T183/Y185	PK035-4	RpAb	NP_002741
428	JNK1	Pan-Specific	NK217-2	RpAb	NP_002741
429	JNK1 (MAPK p49)	Pan-specific	NK217	MmAb	NP_620637.1
430	JNK2	Pan-specific	NK088-2	MmAb	NP_002741
431	JNK2	Pan-Specific	NK189-2	RpAb	NP_002744
432	JNK3	Pan-Specific	NK197-2	RpAb	NP_002744.1
433	Jun	T91	PN163	RpAb	NP_002219
434	Jun	S73	PN048-2	RpAb	NP_002219
435	Jun	S243	PN154	RpAb	NP_002219
436	Jun	Pan-specific	NN162	MmAb	NP_002219
437	Jun	Y170	PN155	RpAb	NP_002219
438	Jun	S73	PN048-1	RpAb	NP_002219
439	KAP	Pan-specific	NP004	RpAb	NP_005183
440	KDEL Receptor, KR10	Pan-specific	NN153	MmAb	NP_006792.1
441	Kit	Y936	PK038	RpAb	NP_006566
442	Kit	Pan-Specific	NK241-2	RpAb	NP_006566
443	Kit	Y703	PK036	RpAb	NP_006566
444	Kit	Y721	PK150	RpAb	NP_006566
445	Kit	Y730	PK037	RpAb	NP_006566
446	Krs-1	Pan-specific	NK090-2	GpAb	AAC50354.1
447	Krs-2	Pan-specific	NK113-3	GpAb	NP_006273
448	LAR	Pan-specific	NP005	MmAb	NP_002831
449	Lck	Y192	PK040	RpAb	NP_005347
450	Lck	Y505	PK041	RpAb	NP_005347
451	Lck	Y394	PK149	MmAb	NP_005347
452	Lck	Pan-specific	NK092-2	MmAb	NP_005347

453	Lck	S158	PK039	RpAb	NP_005347
454	Lck	Pan-specific	NK092-3	MmAb	NP_005347
455	LIMK1	Pan-specific	NK093	MmAb	NP_002305
456	LIMK1/2	Y507/T508	PK042-PK144	RpAb	NP_002305
457	LKB1	Pan-Specific	NK227-4	RpAb	NP_000446.1
458	LKB1	Pan-Specific	NK227-2	RpAb	NP_000446.1
459	LKB1	Pan-Specific	NK227-3	RpAb	NP_000446.1
460	Lyn	Pan-specific	NK095	MmAb	NP_002341
461	MAPKAPK2	T222	PK044	RpAb	NP_004750
462	MAPKAPK2	T334	PN049-PN112-2	RpAb	NP_004750
463	MAPKAPK2	Pan-specific	NK097	GpAb	NP_004750
464	MAPKAPK5	T186	PK693	RpAb	NP_003659.2
465	MARCKS	S152/S156	PN050-1	RpAb	NP_002347
466	MARK1	T215	PK694	RpAb	NP_001273053.1
467	Mcl1	Pan-specific	NN067	RpAb	NP_068779
468	MDM2	S166	PN169	RpAb	NP_001138809.1
469	MEF-2	Pan-specific	NN155	RpAb	NP_057216.2
470	MEK1	T386	PK048-1	RpAb	NP_002746
471	MEK1	Pan-Specific	NK099-7	RpAb	NP_002746
472	MEK1	Pan-specific	NK099-1	MmAb	NP_002746
473	MEK1	Pan-Specific	NK099-3	RpAb	NP_002746
474	MEK1	S292	PK046-2	RpAb	NP_002746
475	MEK1	Pan-Specific	NK099-8	RpAb	NP_002746
476	MEK1	S298	PK047-2	RpAb	NP_002746
477	MEK1	T292	PK046-1	RpAb	NP_002746
478	MEK1	Pan-Specific	NK099-9	RpAb	NP_002746
479	MEK1	T386	PK048-2	RpAb	NP_002746
480	MEK1 + B23(NPM)	S217+S221	PK045-PN007	RpAb	NP_002511
481	MEK2	Pan-Specific	NK100-4	RpAb	AAH00471.1
482	MEK2	Pan-Specific	NK100-6	RpAb	AAH00471.1
483	MEK2	T394	PK049	RpAb	AAH00471.1
484	MEK2	Pan-specific	NK100-1	MmAb	AAH00471.1
485	MEK2	Pan-Specific	NK100-5	RpAb	AAH00471.1
486	MEK2 human	T394	PK049-2	RpAb	AAH00471.1
487	MEK2 mouse	T394	PK050	RpAb	NP_075627
488	MEK3	Pan-specific	NK101	RpAb	NP_659732
489	MEK-3	Pan-specific	NK101-3	RpAb	NP_659732
490	MEK3/6	ST189/193/ST207/211	PK051-2	RpAb	NP_002747
491	MEK3/6	S189 + S207	PK051	RpAb	NP_002747
492	MEK3b	Pan-specific	NK102	MmAb	NP_659731
493	MEK4	Pan-specific	NK103	RpAb	NP_003001
494	MEK4	S257/T261	PK052	RpAb	NP_003001
495	MEK4	Pan-Specific	NK103-2	RpAb	NP_003001
496	MEK5	Pan-Specific	NK104-3	RpAb	NP_660143
497	MEK5	Pan-Specific	NK104-4	RpAb	NP_660143
498	MEK5	Pan-specific	NK104	GpAb	NP_660143
499	MEK5-3	Pan-Specific	NK104-5	RpAb	NP_660143
500	MEK6	Pan-specific	NK105-1	RpAb	NP_002749
501	MEK7	Pan-specific	NK106-2	GpAb	NP_005034
502	MEKK-1	Pan-specific	NK107-4	RpAb	XP_042066
503	MEKK2	Pan-specific	NK108-2	RpAb	NP_006600
504	MEKK-NT	Pan-Specific	NK107-3	RpAb	XP_042066
505	MELK	Pan-Specific	NK229-2	RpAb	NP_001243614.1
506	MELK	Pan-Specific	NK229-3	RpAb	NP_001243614.1
507	Met	Y1003	PK054-2	RpAb	NP_000236.2
508	Met	Y1230/Y1234/Y1235	PK055-1	RpAb	NP_000236.2
509	Met	Pan-Specific	NK110-2	RpAb	NP_000236.2
510	Met	Pan-Specific	NK110-3	RpAb	NP_000236.2
511	Met	T1241	PK706	RpAb	NP_000236
512	Met	T1355+Y1356	PK707	RpAb	NP_000236
513	MKK3	S189	PK051-4	RpAb	NP_002747
514	MKK3	Y230	PK714	RpAb	NP_002747.2
515	MKK3	Pan-Specific	NK101-4	RpAb	NP_002747
516	MKK3	Pan-Specific	NK101-5	RpAb	NP_002747
517	MKK3	S218	PK713	RpAb	NP_002747.2

518	MKK3	Pan-Specific	NK101-6	RpAb	NP_002747
519	MKK4	Pan-Specific	NK103-4	RpAb	NP_003001
520	MKK4	Pan-Specific	NK103-5	RpAb	NP_003001
521	MKK4	Pan-Specific	NK103-6	RpAb	NP_003001
522	MKK6	Pan-Specific	NK105-4	RpAb	NP_002749.2
523	MKK6	Pan-Specific	NK105-5	RpAb	NP_002749.2
524	MKK6	Pan-Specific	NK105-3	RpAb	NP_002749.2
525	MKK7	Pan-Specific	NK106-4	RpAb	NP_005034
526	MKK7	Pan-Specific	NK106-5	RpAb	NP_005034
527	MKP1	Pan-specific	NP006	RpAb	NP_004408
528	MKP2	Pan-specific	NP007	MmAb	NP_001385
529	MLC	S19	PN051-1	RpAb	NP_291024
530	MLK3	Pan-specific	NK208	RpAb	NP_002410
531	MLK3	T277+S281	PK056	RpAb	NP_002410
532	mMOB1	Pan-specific	NN132	RpAb	NP_056202
533	Mnk1	T197+T202	PK057	RpAb	NP_003675
534	Mnk2	Pan-specific	NK111	GpAb	NP_060042
535	MSH2	Pan-specific	NN069	MmAb	NP_000242
536	Msk1	S376	PK058	RpAb	NP_004746
537	MST1	Pan-specific	NK113-1	RpAb	NP_006273
538	MST1	Pan-specific	NK113-2	MmAb	NP_006273
539	MST2	Pan-specific	NK114	RpAb	NP_006272
540	MST3	Pan-specific	NK115	MmAb	NP_003567
541	MST3	T184	PK727	RpAb	NP_001027467.2
542	MST3	T190	PK728	RpAb	NP_001027467.2
543	mTOR	Pan-Specific	NK116-4	RpAb	NP_004949
544	mTOR	Pan-Specific	NK116-3	RpAb	NP_004949
545	mTOR (FRAP)	S2448	PK116	RmAb	NP_004949
546	Myc	T58	PN199	RpAb	NP_002458.2
547	Myc	S373	PN186	RpAb	NP_002458.2
548	MyoD	S200	PN182	RpAb	NP_002469.2
549	MYPT1	T696	PN052	RpAb	NP_446342
550	Nek2	Pan-specific	NK117-4	GpAb	NP_002488
551	Nek2	Pan-specific	NK117-5	RpAb	NP_002488
552	Nek2	Pan-specific	NK117-3	GpAb	NP_002488
553	Nek2	S171	PK732	RpAb	NP_002488
554	Nek7	Pan-specific	NK119	RpAb	NP_598001
555	NFkappaB p50	Pan-specific	NN070	RpAb	NP_003989
556	NFkappaB p65	Pan-specific	NN071	RpAb	NP_003989
557	NFKB p65	S529	PN156	RpAb	NP_003989
558	NFKB p65	S536	PN157	RpAb	NP_003989
559	NFKB p65 (Rel A)	S276	PN053-1	RpAb	NP_003989
560	NIK	Pan-specific	NK207	GpAb	NP_003945.2
561	Nlk	Pan-specific	NK212	GpAb	NP_057315.3
562	NMDAR1	S896	PN055-1	RpAb	NP_000823
563	NMDAR2B	Y1472	PN054	RpAb	NP_000825
564	NME7	Pan-specific	NN074	RpAb	NP_037462
565	NT5E	Pan-specific	NN075	RpAb	NP_002517
566	p107	Pan-specific	NN083	RpAb	NP_P28749
567	p18 INK4c	Pan-specific	NN077	RpAb	NP_523240
568	p21 CDKI1	Pan-specific	NN078	RpAb	NP_000380
569	p27 Kip1	Pan-specific	NN080	RpAb	NP_004055
570	p35	Pan-specific	NN081-NN120	RpAb	NP_003876.1
571	p38 (1727)	Pan-specific	NK120-5	RpAb	NP_001306
572	p38 g (Erk6/SAPK3)	Pan-specific	NK059-1	RpAb	NP_002960
573	p38a (MAPK 14)	Pan-specific	NK120-2	RpAb	NP_001306
574	p38a MAPK	T180+pY182	PK739	RpAb	NP_001306
575	p38a MAPK	Pan-Specific	NK120-8	RpAb	NP_001306
576	p38a MAPK	T180/Y182	PK060-3	RpAb	NP_001306
577	p38a MAPK	T180/Y182	PK060-1	RpAb	NP_001306
578	p38a MAPK	Pan-specific	NK120-4	MmAb	NP_001306
579	p38b	Pan-Specific	NK248-2	RpAb	NP_002742.3
580	p38b	Pan-Specific	NK248-3	RpAb	NP_002742.3
581	p38b	Pan-Specific	NK248-1	RpAb	NP_002742.3
582	p38b	T180+pY182	PK741	RpAb	NP_002742.3

583	p38d	Pan-Specific	NK121-2	RpAb	NP_002745
584	p38d	Pan-Specific	NK121-3	RpAb	NP_002745
585	p38d	Pan-Specific	NK121-4	RpAb	NP_002745
586	p38d	Y182	PK743	RpAb	NP_002745.1
587	p38g	Pan-Specific	NK059-3	RpAb	NP_002960
588	p38g	Pan-Specific	NK059-4	RpAb	NP_002960
589	p38g	Pan-Specific	NK059-5	RpAb	NP_002960
590	p53	S33	PN158	RpAb	NP_000537
591	p53	S37	PN159	RpAb	NP_000537
592	p53	S6	PN160	RpAb	NP_000537
593	p53	S392	PN057-2	RpAb	NP_000537
594	p53	Pan-specific	NN082	MmAb	NP_000537
595	p70 S6K	T421/S424	PK146	RpAb	NP_003152
596	p70 S6K	S424	PK156	RpAb	NP_003152
597	p70 S6K	S411	PK166	RpAb	NP_003152
598	p70 S6Ka	Pan-specific	NK223	MmAb	NP_003152
599	p70-S6K	T229	PK145	RpAb	NP_003152
600	p73	Pan-specific	NN123	MmAb	NP_005418
601	p90 RSK	S352	PK157	RpAb	NP_002944
602	p90 RSK	T348	PK158	RpAb	NP_002944
603	p95 NBS1	S343	PN187	RpAb	NP_002476.2
604	PAC1	Pan-specific	NP008	GpAb	NP_004409
605	PACSIN1	Pan-specific	NN084	RpAb	NP_065855
606	PAK a	Pan-specific	NK122-4	RpAb	NP_002567
607	PAK1	T212	PK130	RpAb	NP_002567
608	PAK1	Pan-specific	NK122	RpAb	NP_002567
609	PAK1/2/3	S144/S141/S154	PK061	RpAb	NP_002567
610	PAK3	Pan-specific	NK123	GpAb	NP_002569
611	PAK4	S474	PK752	RpAb	NP_001014831.1
612	PAKg	Pan-specific	NK200-2	GpAb	NP_002568.2
613	PARP1	Pan-specific	NN085-1	RpAb	NP_001609
614	Paxillin	Pan-specific	NN086	MmAb	NP_002850
615	Paxillin 1	Y31	PN059	RpAb	NP_002850
616	Paxillin 1	Y118	PN060-1	RpAb	NP_002850
617	PCTK1	Pan-specific	NK125	RbAb	NP_148978
618	PCTK2	S180	PK756	RpAb	NP_001163935.1
619	PDGFRa	Y754	PK063	RpAb	NP_006197.1
620	PDGFRa	Y762	PK758	RpAb	NP_006197.1
621	PDGFRa	Y768	PK759	RpAb	NP_006197.1
622	PDGFRA	Pan-Specific	NK242-1	RpAb	NP_006197.1
623	PDGFRA	Pan-Specific	NK242-2	RpAb	NP_006197.1
624	PDGFRa	S847+pY849	PK757	RpAb	NP_006197.1
625	PDGFRb	Y716	PK065	RpAb	NP_002600.1
626	PDGFRB	Pan-Specific	NK243-3	RpAb	NP_032835
627	PDGFRB	Pan-Specific	NK243-1	RpAb	NP_002600.1
628	PDI	Pan-specific	NN141-1	RpAb	NP_000909.2
629	PDK1	Pan-specific	NK126-2	GpAb	NP_002604
630	PDK1	Pan-Specific	NN179-1	RpAb	NP_001265478.1
631	PDK1	Pan-Specific	NN179-2	RpAb	NP_001265478.1
632	PDK2	Pan-Specific	NN180-1	RpAb	NP_002602
633	PDK2	Pan-Specific	NN180-2	RpAb	NP_002602
634	PDK3	Pan-Specific	NN181-2	RpAb	NP_001135858.1
635	PDK3	Pan-Specific	NN181-1	RpAb	NP_001135858.1
636	PDK4	Pan-Specific	NN178-2	RpAb	NP_002603.1
637	PDK4	Pan-Specific	NN178-3	RpAb	NP_002603.1
638	PED15 (PEA15)	S116	PN061	RpAb	NP_003759
639	PERP	Pan-specific	NN088	RpAb	NP_071404
640	PI3-Kinase	Pan-specific	NN089	MmAb	NP_852664
641	PITSLRE	Pan-specific	NK213	RpAb	NP_001278274.1
642	PKA	Pan-specific	NK127-1	MmAb	NP_002721
643	PKA Ca/b	T197	PK067	RpAb	NP_002721
644	PKA Cb	S338	PK068	RpAb	NP_002722
645	PKA R2a (PKR2)	S98	PK069	RpAb	NP_523671
646	PKB2-PCT	Pan-Specific	NK130-5	RpAb	NP_001617
647	PKC h	Pan-specific	NK218	RpAb	NP_006246.2

648	PKCa	Pan-specific	NK132	MmAb	NP_002728
649	PKCa	S657	PK073	RpAb	NP_002728
650	PKCb	Pan-Specific	NK133-2	MmAb	NP_002729
651	PKCb 2	T641	PK076-2	RpAb	NP_002729
652	PKCb1	Pan-specific	NK133	RpAb	NP_002729
653	PKCb1/2	T500	PK075-2	RpAb	NP_002729
654	PKCd	S664	PK080	RpAb	NP_006245
655	PKCd	S645	PK079-1	RpAb	NP_006245
656	PKCd	Pan-specific	NK135	RpAb	NP_006245
657	PKCd	Y311	PK077-1	RpAb	NP_006245
658	PKCd	Y311	PK077-2	RpAb	NP_006245
659	PKCe	S729	PK081-2	RpAb	NP_005391
660	PKCe	Pan-specific	NK136	RpAb	NP_005391
661	PKCe	Pan-specific	NK136-2	GpAb	NP_005391
662	PKCe	S729	PK081-1	RpAb	NP_005391
663	PKCg	T514	PK082-1	RpAb	NP_002730
664	PKCg	T674	PK084	RpAb	NP_002730
665	PKCg	T655	PK083	RpAb	NP_002730
666	PKCg	Pan-specific	NK137	RpAb	NP_002730
667	PKCg	T514	PK082-2	RpAb	NP_002730
668	PKCh	T655	PK085	RpAb	NP_006246
669	PKCl	T555/T563	PK087	RpAb	NP_002731
670	PKCl	Pan-specific	NK138-1	GpAb	NP_002731
671	PKCm (PKD)	S738/S742	PK092	RpAb	NP_002733
672	PKCm (PKD)	S916	PK093-1	RpAb	NP_002733
673	PKCt	Pan-specific	NK140	MmAb	NP_006248
674	PKCt	S676	PK089-1	RpAb	NP_006248
675	PKCt	S695	PK090-1	RpAb	NP_006248
676	PKCz	Pan-specific	NK141	RpAb	NP_002735
677	PKD (PKCm)	Pan-specific	NK142	RpAb	NP_002733
678	PKG1	Pan-specific	NK143	RpAb	NP_006249
679	PKG1b-NT	Pan-Specific	NK203	RpAb	NP_006249.1
680	PKN	Pan-specific	NK148	GpAb	NP_002732
681	PKR1	T446	PK132	RpAb	NP_002750
682	PKR1	Pan-specific	NK144-1	MmAb	NP_002750
683	PLC R(PLCg2)	Pan-specific	NN156	RpAb	NP_002652.2
684	PLCg1	Y783	PN144	RpAb	NP_877963.1
685	PLCg1	Y771	PN165	RpAb	NP_877963.1
686	PLCg2	Y753	PN143	RpAb	NP_002652.2
687	PP1/Ca (PP1a)	Pan-specific	NP009-2	RpAb	NP_002699
688	PP1/Cb (PP1b)	Pan-specific	NP010	RpAb	NP_002700
689	PP1/Cg (PP1g1)	Pan-specific	NP011	RpAb	NP_002701
690	PP2A B' (B56)	Pan-specific	NP033	RpAb	NP_001186685.1
691	PP2A/Aa/b	Pan-specific	NP012	RpAb	NP_002707
692	PP2A/Bb	Pan-specific	NP035	RpAb	NP_001258828.1
693	PP2A/Bg2	Pan-specific	NP032	RpAb	NP_001193923.1
694	PP2A/Ca	Pan-specific	NP013-NP014	MmAb	NP_002706
695	PP2B/Aa	Pan-specific	NP015	RpAb	NP_000935
696	PP2Cd	Pan-specific	NP018	MmAb	NP_110395
697	PP4/A'2	Pan-specific	NP019	RmAb	NP_005125
698	PP4C (X/C)	Pan-specific	NP020-2	RpAb	NP_002711
699	PP4C (X/C)	Pan-specific	NP020	RpAb	NP_002711
700	PP5/PPT	Pan-specific	NP021	MmAb	NP_006238
701	PPP1R11	Y64	PN532	RpAb	NP_068778.1
702	PRAS40	T246	PN062	RpAb	NP_115751
703	PRK2	Pan-specific	NK149	RpAb	NP_006247
704	PRK2	Pan-specific	NK149-2	GpAb	NP_006247
705	PRKDC (DNAPK)	Pan-Specific	NK048-6	RpAb	NP_001075109.1
706	PRKDC (DNAPK)	Pan-Specific	NK048-7	RpAb	NP_001075109.1
707	PRKDC (DNAPK)	Pan-Specific	NK048-4	RpAb	NP_001075109.1
708	PRKDC (DNAPK)	Pan-Specific	NK048-5	RpAb	NP_001075109.1
709	PRKWNK4	Pan-specific	NK151	RpAb	NP_115763
710	Progesterone Receptor	S294	PN104	MmAb	NP_000917
711	PRP4K	Y849	PK786	RpAb	NP_003904.3
712	PSD-95	Pan-specific	NN142	MmAb	NP_001356.1

713	PTEN	Pan-Specific	NP023-3	RpAb	NP_000305.3
714	PTEN	Pan-Specific	NP023-5	RpAb	NP_000305.3
715	PTEN	S380/T382/T383	PP006	RpAb	NP_000305
716	PTEN	S380/T382/T383	PP006-1	RpAb	NP_000305
717	PTEN	S380/S382/S385	PP003	RpAb	NP_000305
718	PTEN	Pan-specific	NP023	MmAb	NP_000305
719	PTP1B	Pan-specific	NP024	MmAb	NP_002818
720	PTP1C	Pan-specific	NP025	MmAb	NP_002822
721	PTP1D/SHP2	Pan-specific	NP026	MmAb	NP_002825
722	PTPD1	Pan-specific	NP036	RpAb	NP_008970.2
723	PTP-PEST	Pan-specific	NP027	MmAb	NP_001124480.1
724	PYK	Phospho	PG001	RpAb	N/A
725	PYK2	Y579	PK097-3	RpAb	NP_004094
726	Pyk2	Pan-specific	NK154	GpAb	NP_004094
727	PYKSD8	Phospho	PG005	RpAb	N/A
728	Rac1	Pan-specific	NN092-1	MmAb	NP_001782
729	Rac1/cdc42	S71	PN063	RpAb	NP_008839
730	Rad17	S645	PN064	RpAb	NP_579921
731	Raf1	S259	PK098	RpAb	NP_002871
732	Raf-1	Pan-Specific	NK155-5	RpAb	NP_002871
733	Raf-1	Pan-Specific	NK155-6	RpAb	NP_002871
734	Raf-1	Pan-specific	NK155-4	RpAb	NP_002871
735	Rb	S608	PN113	MmAb	NP_000312
736	Rb	T356	PN065	RpAb	NP_000312
737	Rb	T826	PN071	RpAb	NP_000312
738	Rb	Pan-specific	NN093	MmAb	NP_000312
739	Rb	S612	PN066	RpAb	NP_000312
740	Rb	S780	PN067	RpAb	NP_000312
741	Rb	S807	PN068	RpAb	NP_000312
742	Rb	S807+S811	PN069	RpAb	NP_000312
743	Rb	T821	PN070	RpAb	NP_000312
744	Rb	S795	PN131-1	RpAb	NP_000312
745	RelB	Pan-specific	NN170	RpAb	NP_006500.2
746	RelB	S552	PN151	RpAb	NP_006500.2
747	Ret	Pan-Specific	NK244-1	RpAb	NP_065681
748	Ret	Pan-Specific	NK244-2	RpAb	NP_065681
749	RIP2/RICK	Pan-specific	NK157	MmAb	NP_003812
750	RIPK	Pan-specific	NK158	MmAb	NP_003795
751	ROCK-I/ROKb	Pan-specific	NK160	MmAb	NP_005397
752	ROKa	Pan-specific	NK159-1	MmAb	NP_004841
753	ROKa	Pan-specific	NK159-2	RpAb	NP_004841
754	Ron	Pan-Specific	NK161-2	RpAb	NP_002438
755	Ron	Pan-Specific	NK161-3	RpAb	NP_002438
756	Ron	Y1238	PK800	RpAb	NP_002438
757	RONa	Pan-specific	NK161	MmAb	NP_002438
758	Ros	Pan-Specific	NK163-3	RpAb	NP_002935
759	Ros	Pan-Specific	NK163-4	RpAb	NP_002935
760	RSK1	Pan-specific	NK164	RpAb	NP_002944
761	RSK1/2	S363/S369	PK100	RpAb	NP_002944
762	RSK1/2	S380/S386	PK101-2	RpAb	NP_002944
763	RSK1/2	S363/S369	PK100-2	RpAb	NP_002944
764	RSK1/2	S221/S227	PK099	RpAb	NP_002944
765	RSK1/2/3	T573	PK102	RpAb	NP_002944
766	S6	S235	PN073	RpAb	NP_001001
767	S6K	T412	PK147	RpAb	NP_003152
768	SAPKb-NT	Pan-Specific	NK197	RpAb	NP_002744.1
769	SG2NA	Pan-specific	NN133	RpAb	XP_005267626.1
770	Shc1	Y239/Y240	PN074	RpAb	NP_003020
771	Shc1	Y349	PN161	RpAb	NP_003020
772	SHIP1	Pan-Specific	NP044-2	RpAb	NP_001017915.1
773	SHIP2	Pan-Specific	NP045-1	RpAb	NP_001558.3
774	SHP2	S576	PP004	RpAb	NP_002825
775	SHP2	Pan-specific	NP026-2	RpAb	NP_002825
776	SIK2	Pan-Specific	NK249-3	RpAb	NP_056006.1
777	SIK2	Pan-Specific	NK249-1	RpAb	NP_056006.1

778	SIK2	Pan-Specific	NK249-2	RpAb	NP_056006.1
779	SIK3	Pan-Specific	NK250-1	RpAb	NP_001268677.1
780	SIK3	Pan-Specific	NK250-3	RpAb	NP_001268677.1
781	Smac/DIABLO	Pan-specific	NN095	RpAb	NP_620308
782	Smad1	S465	PN183	RpAb	NP_001003688.1
783	Smad2	S467	PN184	RpAb	NP_001003652
784	Smad2	T220	PN185	RpAb	NP_001003652
785	Smad2/3	Pan-specific	NN096	MmAb	NP_005892
786	SMC1	S957	PN125	RpAb	NP_006297.2.
787	SMG1	Pan-Specific	NK233-1	RpAb	NP_055907.3
788	SMG1	Pan-Specific	NK233-3	RpAb	NP_055907.3
789	SNCA (a-Synuclein)	S129	PN197	RpAb	NP_000336.1
790	SNF1lK	Pan-Specific	NK251-1	RpAb	NP_775490.2
791	Snk	Pan-specific	NK146-2	GpAb	NP_006613
792	SOCS2	Pan-specific	NN145	RpAb	NP_003868.1
793	SOCS4	Pan-specific	NN097	RpAb	NP_543143
794	SOD (Cu/Zn)	Pan-specific	NN098	RpAb	NP_000445
795	SODD	Pan-specific	NN099	RpAb	NP_004865
796	SOX9	S181	PN077	RpAb	NP_000337
797	SPHK1	Pan-specific	NN100	RpAb	NP_892010
798	SPHK2	Pan-specific	NN101	RpAb	NP_064511
799	Src	Y418	PK107	RpAb	NP_005408
800	Src	Pan-specific	NK172-2	RpAb	NP_005408
801	Src	Y529	PK108	RpAb	NP_005408
802	Src	Pan-specific	NK172-3	RpAb	NP_005408
803	Src	Pan-specific	NK172-4	MmAb	NP_005408
804	STAT1	S727	PN078-PN135	RpAb	NP_009330
805	STAT1	Pan-specific	NN102-NN124	RpAb	NP_009330
806	STAT1	Y701	PN079-PN136	RpAb	NP_009330
807	STAT2	Pan-specific	NN103	RpAb	NP_005410
808	STAT2	Y689	PN080	RpAb	NP_005410
809	STAT3	Y704	PN082-1	RpAb	NP_003141
810	STAT3	Pan-specific	NN104	RpAb	NP_003141
811	STAT4	Pan-specific	NN117	RpAb	NP_003142
812	STAT5	Y694	PN083-1	RpAb	NP_003143
813	STAT5A	Pan-specific	NN105	RpAb	NP_003143
814	STAT5A	S780	PN119	RpAb	NP_003143
815	STAT5B	Pan-specific	NN106	RpAb	NP_036580
816	STAT6	Pan-specific	NN107	RpAb	NP_003144
817	STI1	Pan-specific	NN108	MmAb	NP_006810
818	Striatin	Pan-specific	NN134	RpAb	NP_003153.2
819	Syk	Y323	PK821	RpAb	NP_003168
820	Syk	Y323	PK159	RpAb	NP_003168
821	Syk	Pan-specific	NK174	MmAb	NP_003168
822	Synapsin 1	S603	PN111	RpAb	NP_008881
823	Synapsin 1	Pan-specific	NN171	RpAb	NP_008881
824	TAK1	Pan-specific	NK175-5	MmAb	NP_663306
825	Tau	S713	PN090	RpAb	NP_005901
826	Tau	S713	PN090-2	RpAb	NP_005901
827	Tau	S400	PN091	RpAb	NP_005901
828	Tau	S199	PN085	RpAb	NP_005901
829	Tau	S404	PN092	RpAb	NP_005901
830	Tau	S199/202	PN086	RpAb	NP_005901
831	Tau	S422	PN107	RpAb	NP_005901
832	Tau	T205	PN121	RpAb	NP_005901
833	Tau	T231	PN122	RpAb	NP_005901
834	TBK1	Pan-specific	NK220-2	RpAb	NP_037386
835	TBK1	S172	PK828	RpAb	NP_037386
836	TEC	Y519	PK829	RpAb	NP_003206.2
837	TRADD	Pan-specific	NN110	MmAb	NP_003789
838	Trail	Pan-specific	NN111	RpAb	NP_003801
839	TrkA	Pan-specific	NK178	RpAb	NP_002520
840	TrkB	Pan-specific	NK179	RpAb	NP_006171
841	TrkB	Y705	PK160	RpAb	NP_006171
842	TTK	Pan-specific	NK180	RpAb	AAA61239.1

843	Tubulin	Pan-specific	CN002	RpAb	NP_001061.2
844	Tyk2	Pan-specific	NK181	RpAb	NP_003322
845	TYK2	Pan-Specific	NK181-3	RpAb	NP_003322
846	Tyk2	Pan-specific	NK181-2	RpAb	NP_003322
847	TYK2	Pan-Specific	NK181-4	RpAb	NP_003322
848	TYK2	Pan-Specific	NK181-5	RpAb	NP_003322
849	Tyro10	Pan-specific	NK183-1	RpAb	NP_006173
850	Tyrosine Hydroxylase	S40	PN093-1	RpAb	NP_954986
851	VAV1	Y826	PN543	RpAb	NP_001245135.1
852	VEGF-C	Pan-Specific	NN176	RpAb	NP_005420.1
853	VEGFR2	Y1059	PK161	RpAb	NP_002244
854	VEGFR2	Y1214	PK133	RpAb	NP_002244
855	VGFR1	Pan-Specific	NK226-2	RpAb	NP_001153392.1
856	VGFR2	Pan-Specific	NK245-2	RpAb	NP_002244
857	VGFR2	Pan-Specific	NK245-3	RpAb	NP_002244
858	VGFR3	Pan-Specific	NK064-3	RpAb	NP_002011.2
859	VGFR3	Pan-Specific	NK064-2	RpAb	NP_002011.2
860	VHR	Pan-specific	NP030	MmAb	NP_004081
861	VIM	Y117	PN544	RpAb	NP_003371.2
862	Vimentin	S33	PN094	MmAb	NP_003371.2
863	Wee1	Pan-Specific	NK185	RpAb	NP_003381
864	Wip1	Pan-specific	NP037	GpAb	NP_003611.1
865	WNK1	Pan-Specific	NK252-1	RpAb	NP_001171914.1
866	WNK1	S382	PK855	RpAb	NP_001171914.1
867	WNK2	Pan-Specific	NK253-3	RpAb	NP_001269323.1
868	WNK3	Pan-Specific	NK254-1	RpAb	NP_001002838.1
869	WNK3	Pan-Specific	NK254-3	RpAb	NP_001002838.1
870	Yes	Pan-specific	NK186	MmAb	NP_005424
871	Yes	Pan-specific	NK186-2	MmAb	NP_005424
872	YSK1	Pan-specific	NK214	GpAb	NP_006365.2
873	YSK4	Pan-Specific	NK256-2	RpAb	NP_001018054.1
874	ZAP70	Pan-specific	NK187-2	RpAb	NP_003168
875	ZAP70	Pan-specific	NK187	MmAb	NP_003168
876	ZIPK	Pan-specific	NK188-2	RpAb	NP_001339
877	ZIPK	Pan-specific	NK188-1	RpAb	NP_001339

PROTEOMICS 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: _____

_____

_____

R E C I T A L S

WHEREAS Kinexus is a bioinformatics company employing proprietary proteomics and bioinformatics services to create and interpret data to map protein signalling networks and compile databases with this knowledge to enable disease biomarker and therapeutics discovery.

WHEREAS the Customer desires to have Kinexus perform standard and/or customized proteomics services with materials and/or information provided by the Customer.

WHEREAS Kinexus is willing to provide these proteomics services 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 the 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 "Corporate Partner" means any Third Party which enters into an agreement with the 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 Proteomics Analyses provided to the Customer pursuant to this Agreement.

1.4 "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. 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.

All of the Proteomics Services technologies provided by Kinexus will be deemed to have been identified as proprietary and considered the Confidential Information of Kinexus.

1.5 "Contact" means the contact person of the Customer that is designated on the Service Order Forms, who is deemed to have the authority to deliver Samples, Service Order Forms, Service Information Forms, and Sample Description Forms to Kinexus, on behalf of the Customer, under this Agreement.

1.6 "Proteomics Analyses" means one or more of the Custom and Standard Proteomics Services offered by Kinexus that may permit the identification and/or quantification of proteins, their phosphorylation states, their interactions with proteins, peptides, and other compounds, and the regulation of their functional activities by these agents.

1.7 "Proteomics Products" means the products of the Custom Proteomics Services offered by Kinexus to manufacture one or more proteins using recombinant DNA technology, and designer peptides by chemical synthesis.

1.8 "Sample" means a lysate or semi-purified fraction from cells and tissues, a protein, and/or a compound provided to Kinexus by the Customer, which the Customer has prepared and shipped in a manner that it can be properly used by Kinexus for the Proteomics Analyses. Samples for Proteomics Analyses may also be provided by Kinexus at the request of the Customer.

1.9 "Sample Description Form" means the Kinexus form to be completed by the Customer to provide information on the nature of each Sample submitted for the Proteomics Analyses. It is included in the Proteomics Services Customer Information Package with this Agreement, and may be amended from time to time as updated on the Kinexus website.

1.10 Antibody" means the immunoglobulin reagent that permits detection of a target protein or phosphorylation site.

1.11 "Antibody Description Form" means the Kinexus form to be completed by the Customer to provide information on the nature of each Antibody submitted by the Customer for the Proteomics Analyses. It is included

in the Proteomics Services Customer Information Package with this Agreement, and may be amended from time to time as updated on the Kinexus website.

1.12 "Service Order Form" means the Kinexus form to be completed by the Customer to provide Kinexus with the Customer's contact and billing information for the Proteomics Analyses or Proteomics Products. This form indicates the level of confidentiality requested by the Customer. It is included in the Proteomics Services Customer Information Package with this Agreement, and may be amended from time to time as updated on the Kinexus website.

1.13 "Service Information Form" means the Kinexus form to be completed by the Customer to provide Kinexus with a specific listing of the Samples to be tested for the Proteomics Analysis or a specific description of the Proteomics Products that are requested. It is included in the Proteomics Services Customer Information Package with this Agreement, and may be amended from time to time as updated on the Kinexus website.

1.14 "Report" means the underlying raw data and the report provided to The Customer hereunder consisting of the Proteomic Analyses of Samples, including, but not limited to tables of the experimental results. For Proteomics Products, the Report may include raw data confirming the composition and purity of the Proteomics Products.

1.15 "Field of Use" means use by Kinexus and its Affiliates and Academic Collaborators of data from the Report for research and commercial purposes relating to the creation and interpretation of knowledge about the composition, architecture and operation of cell signalling networks, improving its Proteomics Services, and the compilation of databases that may become accessible to Third Parties on-line over the Internet.

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

1.17 "Effective Date" means the date of the last signature on this Agreement.

2. REQUEST FOR AND DELIVERY OF PROTEOMICS SERVICES

2.1 Request for Proteomics Services. From time to time, over the Term of this Agreement (as defined in Section 6.1 herein), the Customer can engage Kinexus to provide its Proteomics Analyses or Proteomics Products. After submission of a quotation from Kinexus to the Customer, by delivery to Kinexus of a Service Order Form, a Service Information Form and a Sample Description Form with Samples as appropriate, the Customer hereby requests and authorizes Kinexus to perform Proteomics Services and deliver the results of these services to the Customer, pursuant to the terms and conditions in this Agreement. In the case of Customer requested Proteomics Analyses, this would include the delivery of a Report. In the case of Customer requested Proteomics Products, this would include the delivery of the Proteomics Products and a Report.

2.2 Representation and Warranty. The 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. The Customer shall be responsible for making shipping arrangements to deliver Samples to Kinexus. The 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 Report and Proteomics Products. Subject to the terms of this Agreement, Kinexus shall analyze Samples with the Customer-specified Proteomics Services or produce Customer-specified Proteomics Products, and deliver a Report to the Customer as requested on the Service Order Form and Service Information Form.

2.5 Quality of Samples for Proteomics Analyses. Kinexus shall not deliver a Report on any Sample that Kinexus, in its sole discretion, believes has not been prepared and delivered in a manner that would compromise its ability to provide a reliable result. 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 Proteomics Services. For each Proteomics Analyses and Proteomics Product requested under this Agreement, the Customer shall pay to Kinexus a fee in accordance with the amount specified on the Service Order Form and the Service Identification Form for the requested service, which may be amended from time to time as updated on Kinexus' website. This amount will be based on a formal quotation issued by Kinexus to the Customer. In the absence of a formal quotation, the pricing will be based on the pricing specified in the latest versions of the Customer Information Packages for Proteomics Services that are downloadable from the Kinexus website (www.kinexus.ca). The category of pricing depends on the level of requested confidentiality for analysis:

(a) Non-Confidential Analyses. If the Samples are provided by the Customer, then all of the Sample information on the Client Supplied **Non-Confidential** Sample Description Form is completed and **is not** designated as Confidential Information on the Service Identification Form. If 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 Analyses. If the Samples are provided by the Customer, then all of the Sample information on the Client Supplied **Confidential** Sample Description Form must be completed and **is** designated as Confidential Information on the Service Identification Form.

3.2 The 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 Proteomics Analyses or Proteomics Products are complete and delivered to Customer. Payment terms are net 30 days from date of invoice.

3.3 Interest on Late Payments. Any overdue payments by the 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 3.3 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 3.3 once such dispute has been resolved if payment is not made promptly thereafter.

4. INTELLECTUAL PROPERTY RIGHTS

4.1 Ownership of Sample Information. The Customer owns all rights to the Sample information provided to Kinexus. For Non-Confidential Proteomics Analyses, the 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) to use the information on the Client Supplied **Non-Confidential** Sample Description Form in the Field of Use, provided that the Customer's identity is not linked to, or otherwise disclosed with respect to, such data.

4.2 Ownership of Report. The Customer shall own the data in the Report. For Non-Confidential Proteomics Analyses, the 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 Report in the Field of Use.

4.3 Confidentiality of Sample Information. Kinexus will have no rights with respect to the Confidential Sample information until the Sample information is published or otherwise enters the public domain. Thereafter, Kinexus can use the results of the Proteomics Analyses of the Customer Samples for its internal research and development programs.

4.4 Ownership of Proteomics Products. The Customer owns the Proteomics Products that have been delivered to the Customer in the amounts specified in the Service Order Form and the Service Information Form. Kinexus owns any excess Proteomics Products and may dispose of these in its best interests.

4.5 Ownership of New Intellectual Property.

(a) The 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 Report and Proteomics Products solely by employees of the 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 Report and Proteomics Products solely by employees of Kinexus or jointly with its Affiliates.

4.6 Non-Exclusive License to Preserve Kinexus Proteomics Services Freedom of Operation. In the event one or more claims of an issued patent arising from the use of a Report by the Customer, its Affiliates, Academic Collaborators or Corporate Partners would, absent a license from the Customer or its Affiliates, prevent Kinexus from using or permitting others to use the Kinexus Proteomics Services or any data therein, then the 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 Proteomics Services.

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. The Customer may publish and/or present the Report, abstracts or manuscripts generated utilizing the Report, and any data and/or results generated by the Customer utilizing the Report. The Customer is encouraged to disclose in scientific publications any Proteomics Analyses that were performed by Kinexus and any Proteomics Products were produced by Kinexus that meaningfully contributed to the described work. Please refer to "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 the Report for a period of 180 days (6 months) following the return of the Report 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. All parties agree that the term of confidentiality pertaining to that Sample information will expire when the Sample information is published or otherwise enters public domain through no fault of Kinexus.

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 the Customer's name in relation to data from a 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 a Report or Proteomics Product to the 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 the 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 or Proteomics Product at issue.

Kinexus shall have the right to terminate any work order for any Proteomics Services upon ten (10) days written notice to the Customer, upon the identification of a technical difficulty related to the Sample or Proteomics Product which would prevent it from delivering the Report or Proteomics Product using reasonable efforts. If Kinexus terminates a work order as a result of a technical difficulty related to a Customer Sample that is the fault of Kinexus, Kinexus shall provide for the reanalysis of the same number of problematic Customer Samples for the Proteomics Analyses at the original agreed upon price without any additional expenses incurred by the Customer, or Kinexus shall repay any prepayment fee paid by the Customer for such a Customer Sample and neither party shall have any further obligation to the other with respect to that Customer Sample.

If Kinexus terminates a work order for Proteomics 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 Proteomics Analyses for all Samples. For any subsequent resubmission of Customer Samples for Proteomics 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 an additional charge per sample at a price mutually agreed by the Customer and Kinexus. If the Customer elects not to resubmit Samples for Proteomics Analyses, then the Customer will pay Kinexus an amount equivalent to 50% of the quoted price for the work performed by Kinexus to this point.

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 the Customer, in which case the Customer shall return to Kinexus, or, upon Kinexus' written instruction, destroy any Report, Proteomics Products, and all information, other materials or documentation provided or made available by Kinexus pursuant to this Agreement, and any copies thereof (including electronic copies).

(b) Remedies Available to the Customer. If an Event of Default occurs relating to a material breach by Kinexus, then the 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 custom proteomics 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 PROTEOMICS SERVICES ARE 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 REPORT, ANY PROTEOMICS PRODUCTS 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 the Customer, its Affiliates, Corporate Partners, or Academic Collaborators of the Report and any Proteomics Products or any loss, claim,

damage or liability, of whatever kind or nature, which may arise from or in connection with the use of the Report or the data therein, and any Proteomics Products. 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 PROTEOMICS SERVICES AT ISSUE.

8. INDEMNIFICATION

Except to the extent prohibited by law, the 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 Report or the data therein and any Proteomics Products by the 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 the Customer:

To the 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 the Customer and may reference the Customer as a Kinexus client.

9.6 No Partnership. It is expressly agreed that the relationship between Kinexus and the Customer shall not constitute a partnership, joint venture or agency. Neither Kinexus nor the 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 the 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.

_____	**KINEXUS BIOINFORMATICS CORPORATION**
Printed Name of Institute or Company	
Per: _____	Per: _____
Signature of Authorized Representative	*Signature of Dr. Steven Pelech*
Name: _____	**Dr. Steven Pelech**
Printed Name of Authorized Representative	
Title: _____	**President and Chief Scientific Officer**
Printed Title of Authorized Representative	
Date signed: _____	Date signed: _____