

**IHC SERVICES**

**Version 10JA20**

# **iHC SERVICES**

**IMMUNOHISTOCHEMISTRY  
CUSTOMER INFORMATION PACKAGE**

**Toll free: 1-866-KINEXUS or 604-323-2547**

**Facsimile: 604-323-2548**

**E-mail: [info@kinexus.ca](mailto:info@kinexus.ca)**

**[www.kinexus.ca](http://www.kinexus.ca)**



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## IMMUNOHISTOCHEMISTRY (IHC) SERVICES

### 1. INTRODUCTION

As part of the Kinexus suite of integrated proteomics services, our Immunohistochemistry (IHC) Services permit clients to track the spatial locations of specific target proteins and phosphoproteins in tissues and cells. Many signalling proteins display specificity in their tissue distribution and undergo changes in their subcellular location during their regulation. Our IHC Services are a natural follow on from our Kinetworks™ immunoblotting services, and facilitate analysis of target protein expression and phosphorylation. Clients can select from a large panel of over 800 high specificity antibodies that are available from Kinexus or submit their own antibodies for use with our Immunohistochemistry Services. Clients can ship either frozen or paraffin-embedded tissue and cell samples for analysis. Alternatively, clients can choose from a panel of diverse tissues that are already available from Kinexus on slides that are ready for staining. We aim to perform the tissue sectioning, slide preparation, blotting and image scanning at the most competitive rates in the industry. However, a minimum of 10 slides must be ordered to use this labour intensive service.

### 2. IHC SERVICE OPTIONS

Immunohistochemistry (IHC) is a technique that allows for the spatial localization of specific proteins within tissues. The principle behind IHC is a specific antibody binding to a specific epitope on the antigen in the native form of the protein of interest in a tissue section. Due to the variations that can arise between antigens and their corresponding antibodies, as well as the accessibility of the epitope(s), a myriad of IHC protocols have been and are currently being developed. Our experienced staff remains at the forefront of this technology, keeping up-to-date with the very latest IHC techniques, as well as actively developing our own protocols. Due to this expertise, our IHC program can be tailored to your needs. We offer two IHC services. For the first, our standard IHC service, a client needs to indicate the primary antibody dilution or concentration that is desired to be used in our standardized protocol on the tissue of interest. For our second service, our IHC protocol development service, a client informs us of which antibody is to be used for IHC for the tissue of interest, and we will develop an optimized protocol for antibody staining. This protocol can then be applied to the entire experiment. Completion by a client of a Service Order Form (IHC-SOF-01 in Appendix A) and a Custom Immunohistochemistry Sample Processing Form (IHC-SPF-01 in Appendix E) instructs us how to proceed.

To maximize the prospects of success, it is critical that we receive as much information about the probing antibody as possible if this is to be supplied by the client. A copy of the Antibody Data

Sheet from the commercial vendor should be provided if available. Clients must also fill in the requested information in our Client-Supplied Antibody Description Form IHC-CADF-1 (Appendix D).

It is highly recommended that positive control tissues are used for our IHC analyses. In the case of our IHC protocol development service, our experienced staff will carry out a full literature search to find the ideal control tissue(s) to be used for the optimization process. In the case of our standard IHC service, it is up to the client's discretion to either provide or request for a specific positive control tissue. Following IHC staining, all slides are inspected by our strict Quality Control Unit to ensure all staining criteria are met. Stained slides can then be returned to the client along with digital imaging of the slides.

### 3. PREPARATION OF TISSUES

If tissue sections are supplied by a client for our standard IHC Services, the preparation of the tissue must be in accordance to the specific staining conditions of the antibody to be used. For example, some antibodies are only reactive to tissue sections prepared via frozen (cryo) techniques due to specific preservation of the antigen. Alternatively, fixation techniques may also impact the preservation requirements of the antigen. If tissue sections are provided by Kinexus, the client must specify whether the antibody that they are supplying is specifically reactive to frozen- (cryo) or paraffin-prepared tissue only, as well as appropriate fixation techniques. If the antibody is supplied by Kinexus, we will endeavor to determine whether the antibody is suitable for cryo- or paraffin-prepared tissues. We expect in some cases that this information may not initially be known and the IHC Optimization Protocol Service may be necessary.

If tissue sections are supplied by the client for our IHC Optimization Protocol Service, we will consult with the client whether any potential conflicts may arise from the preparation of the tissue based on the commercial Antibody Data Sheet and the provided Client-Supplied Antibody Description Form IHC-CADF-1. For example, the antibody may only be reactive to tissue sections prepared via frozen (cryo) techniques or specific fixation techniques for proper preservation of the antigen. If tissue sections are supplied by Kinexus, we will use the ideal tissue preparation conditions to achieve optimal IHC staining.

Please note that we cannot guarantee IHC results as the protein(s) of interest may not be present in the tissue(s) of interest. In addition, a positive result from Western blot analysis may not necessarily produce a positive result in IHC due to their inherent differences. In Western blotting,

the epitope is readily available in the denatured protein, while IHC may rely on an exposed epitope in the native protein.

If our IHC Optimization Protocol Service is being used with client-supplied slides, a minimum of 20 slides should be sent to Kinexus. At least 5 positive control slides should also be provided. We will return any unused slides provided by our clients unless they indicate otherwise.

To inform us precisely which of the IHC Services that you wish to use from Kinexus, you must complete a Service Order Form (IHC-SOF-01 in Appendix A). Filing out this form will provide an estimate of the total costs of the various work that you would like Kinexus to perform and gives us your contact and billing information. You must also complete a Custom Immunohistochemistry Sample Processing Form (IHC-SPF-01 in Appendix E). If you require more than 10 slides to be stained, then please use additional copies of this form.

To ensure that your tissue and antibody samples are processed properly, it is necessary to complete either the Confidential (IHC-CSDF-01 in Appendix B) or Non-Confidential (IHC-NSDF-01 in Appendix C) Sample Description Form as appropriate. If you are supplying the probing antibody, then please also complete the Client-Supplied Antibody Description Form (IHC-CADF-1 in Appendix D). These and any other relevant forms should be included with the samples sent to Kinexus for analyses. More information about the various forms that need to be completed is provided below.

#### **4. BASIC SHIPPING INFORMATION**

Note that the courier costs of shipping antibodies and tissue specimens to Kinexus for our IHC services must be borne by the client. The sample vials and all completed forms should be sent to the address listed below. The samples of tissues and antibodies may be shipped at room temperature if the tissue specimens are paraffin-embedded or already section on glass slides. Frozen tissue samples should be shipped on dry ice. We recommend shipping through Federal Express Courier. However, for dry ice shipments coming from outside of North America, the preferred choice is World Courier. Ship your samples to the following address:

**Immunohistochemistry Services  
Kinexus Bioinformatics Corporation  
Suite 1, 8755 Ash Street  
Vancouver, B.C. Canada V6P 6T3**

**Telephone: (604) 323-2547**



Please ensure 3 copies of a signed commercial invoice accompany your shipment which specifies your samples are non hazardous and non infectious. Three different commercial invoice templates are supplied in Appendices I - K, and these should be used depending on whether the samples are being sent as paraffin-embedded, sectioned on glass slides or frozen tissues. Since the samples are not for resale, the value of your shipment should be priced at approximately \$1.00 per sample in order to avoid paying additional duties and taxes on entry into Canada. It is also highly recommended that customers email their Federal Express airway bill number and the date of departure to [info@kinexus.ca](mailto:info@kinexus.ca) so we can track your shipment in transit and ensure it arrives in a timely manner. We will send a confirmation email once your shipment arrives at our facility.

## 5. FORMS TO BE COMPLETED

***Depending on the IHC Services requested, customers are required to complete two or more of the following forms for each order placed:***

- A. Kinexus Proteomics Services Agreement (Appendix F). Customers are required to complete and sign our standard Service Agreement before their first order can be processed.
- B. Service Order Form (IHC-SOF-01 in Appendix A). The Service Order Form (SOF) allows us to track all of the various services to be used within an order.
- C. Sample Description Form – Customers should choose one or both of the following forms as applicable if they are supplying their own tissues for the IHC analysis: Confidential Sample Description Form (IHC-CSDF-01 in Appendix B); and Non-Confidential Sample Description Form (IHC-NSDF-01 in Appendix C). The Sample Description Forms (SDF's) allow us to determine the nature of the tissues to be analyzed. If customers also wish to have their own antibodies utilized for the IHC analysis, they must complete a Client Supplied Antibody Description Form (IHC-CADF-01 in Appendix D).
- D. Sample Preparation Form (IHC-SPF-01 in Appendix E). The Sample Preparation Form (SPF) provides details on the work requested by customers. In the event that two different samples are analyzed on the same slide, both Sample ID numbers should be provided in Section E in the order that the samples appear on the slide.
- E. Airway Bills for Couriers. These are not provided in this Client IHC Information Package.
- F. Commercial Invoice (Appendices I, J or K) required for all customers located outside of Canada that are supplying tissue and antibody samples for the IHC analysis.

All orders should have as a minimum 1 SOF form and 1 SPF form completed. Only if client are supplying their own tissue samples or antibodies is it necessary to send completed SDF and/or CADF forms with a commercial invoice in the package to be couriered. A new Kinexus Service Agreement is not necessary if the client has previously placed an order with Kinexus and submitted a signed Kinexus IHC Service Agreement at that time. More detailed information on these forms follows.

**For both local and international clients:**

**A. Kinexus Proteomics Services Agreement**

*Our standard Kinexus 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, or Principal Investigator, before the first order can be processed, but does not have to be signed again for repeat orders. The Kinexus Service Agreement is typically valid for 15 years. If you require changes or modifications to be made to our standard Service Agreement, please email us at [sales@kinexus.ca](mailto:sales@kinexus.ca) to request a Microsoft Word version of the document so your requested changes can be made directly into the agreement and emailed to us for our final approval.

**B. Service Order Form (IHC-SOF-01)**

*Please ensure:*

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

**C. Sample and Antibody Description Forms** (only if client is providing tissues and/or antibodies)

***Client Supplied Non-confidential Sample Description Form (IHC-NSDF-01)***

***Client Supplied Confidential Sample Description Form (IHC-CSDF-01)***

*For any tissue samples submitted, please ensure the following:*

- Each sample tube is labeled and properly identified on the form in Section A
- Your sample is described by completion of Client Supplied Non-Confidential (IHC-NSDF-01) or Confidential (IHC-CSDF-01) Sample Description Forms by checking the

appropriate boxes and entering the appropriate information requested in Sections A-I for Non-Confidential samples and Sections A-B for Confidential samples

- The form is certified correct and signed and dated
- **Note that the information provided on this form will eventually be shared with thousands of other scientists in the future with the Non-Confidentiality pricing. In the spirit of collegiality, please be as accurate as possible in completing the IHC-NSDF-01 form in order to not handicap their research efforts should they desire to follow up on your immunohistochemistry results.**

***Client Supplied Antibody Description Form (IHC-CADF-01)***

*For the antibody samples submitted, please ensure the following:*

- Each antibody sample tube is labeled and properly identified on the form in Section A
- In Section B, final concentration or recommended dilution of the antibody for immunohistochemistry should be provided unless you plan to use the Optimization Protocol Service
- Your sample is described by completion of Client Supplied Antibody Description Form (IHC-CADF-01) by checking the appropriate boxes and entering the appropriate information requested in Sections A-F for Non-Confidential samples and Sections A-C for Confidential samples
- In Section F, you may use the single amino acid or other standard abbreviations for the amino acid residues starting from the N-terminus of the peptide. If an amino acid is covalently modified (e.g. phosphorylation), please indicate this.
- The form is certified correct and signed and dated

**D. Sample Preparation Form (IHC-SPF-01)**

- For tissue samples that are provided by customers, please ensure that all of Sections A and B of this form are completed
- For tissue samples that are to be provided by Kinexus, please use the codes and tissue information found in Appendix G and enter this information in the second and third columns of Section E. In the event that two different samples are analyzed on the same slide, both Sample ID numbers should be provided in Section E in the order that the samples appear on the slide. The sample on the right of the slide should be first
- For antibodies that are to be provided by Kinexus, please use the codes and antibody information found in Appendix H and enter this information in the fourth and fifth columns of Section E. Also provide the concentration or dilution of the antibody that you wish to be used. If this information is not provided, Kinexus will use its own discretion



- If you require more than 10 slides to be stained, then please use additional copies of this form

**E. Airway bill for Federal Express or any other preferred courier** (only if client is providing tissues and/or antibodies)

*Complete a Federal Express airway bill and specify:*

- FedEx priority overnight delivery
- **Do not specify Saturday delivery or hold at FedEx Location**
- Telephone 1-800-GO-FEDEX or visit them online at [www.fedex.com](http://www.fedex.com) or [www.fedex.ca](http://www.fedex.ca) to schedule a pick up or complete your forms
- For shipments coming from within Canada or the United States, please ship any day from Monday to Wednesday. Do not ship on Friday.
- For international shipments coming from outside of North American, the best day to ship is on Monday to ensure arrival in Canada for delivery later the same week
- It is recommended that customers e-mail the date of your shipment and the Federal Express Airway Bill number to Kinexus at [info@kinexus.ca](mailto:info@kinexus.ca) to ensure we can track your package should it get held up in Canadian Customs
- For any customer located outside of Canada, 3 copies of a commercial invoice is required to accompany your shipment (see below)

**For international clients outside of Canada:** (only if client is providing tissues and/or antibodies)

**F. Commercial Invoice (not required by Canadian customers)**

*Please complete the attached commercial invoices in Appendices I, J or K as appropriate depending on whether paraffin-embedded tissue (Appendix I), frozen tissue (Appendix J) or sectioned tissues on glass slides (Appendix K) shipments are used with the following information:*

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

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

***NOTE: Do not change the value of your shipment to more than \$1.00 per sample (or \$100 total value) as this will prompt the custom brokers to charge Kinexus with a duty and GST fee on your package, which we would have to bill back to you. Since the samples are processed internally and not for re-sale, there is no real commercial value.***

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

## SUPPORTING SYSTEMS PROTEOMICS SERVICES

Kinexus is endeavoring to change the paradigm for cell signalling research by empowering our clients to undertake broad analyses of hundreds of signal transduction proteins at a time, conveniently and for an economical cost with our assistance. With Kinexus, it is now possible for our clients to undertake signal transduction research from conception to publication without the need for a wet lab of their own. This section provides a broad overview of the other supporting services for our unique and powerful platform for disease biomarker and drug target discovery.

### 6. IN VIVO SERVICES

Our In Vivo Services permit our clients to fully benefit from our unique proteomics services without the hassles of cell culture, treatment and harvesting, subcellular fractionation, protein assay and shipping of frozen lysates. With our In Vivo Cell Preparation Service, customers can send us their experimental compounds (e.g. drugs), proteins (e.g. cytokines and hormones) or oligonucleotides (e.g. RNAsi), and we will perform the treatments of diverse human tumour cells according to their specifications and prepare lysates compatible for testing with our Kinex™ antibody microarray and Kinetworks™ multi-immunoblotting services. However, clients now have the option of using the lysates that we have generated in-house from treating our panel of human tumour cell lines in dose response and time course studies with many commonly used growth factors and drugs. A wide range of monkey, rat, mouse and frog tissues lysates are also available. These pre-made lysates can serve as useful controls for comparative studies, and they are available for probing with antibodies for specific target protein and phospho-sites with our Kinex™ Reverse Lysate Microarray Service. There is also extensive information available on these cells and tissues from our previous Kinetworks™ multi-immunoblotting analyses, and this data is available upon subscription to our KiNET on-line databank ([www.kinexus.ca/kinet](http://www.kinexus.ca/kinet)). The following is a listing of the current Kinexus human cell line panel:

- A431 - Skin epidermoid carcinoma from a 85 year old female [ATCC# CRL-1555]
- A549 - Lung carcinoma from a 58 year old male [ATCC# CCL-185]
- HCT116 - Colon carcinoma from an adult male [ATCC# CCL-247]
- HEK 293 - Female fetal kidney cells transformed with adenovirus 5 [ATCC# CRL-1573]
- HeLa - Cervix epithelial adenocarcinoma from a 31 year old female [ATCC# CCL-2]
- HepG2 - Liver carcinoma from a 15 year old male [ATCC# HB-8065]
- HL-60 - Peripheral blood promyeloblasts from a 36 year old female [ATCC# CCL-240]
- HUV-EC - Umbilical vein endothelial cells from a normal adult female [ATCC# CRL-1730]
- Jurkat - T cell leukemia from a 14 year old male [ATCC# TIB-152]
- MCF-7- Breast epithelial adenocarcinoma from a 69 year old female [ATCC# HTB-22]

- PC-3 - Prostate adenocarcinoma from bone of 62 year old male [ATCC# CRL-1435]
- T98G - Brain glioblastoma from 61 year old male [ATCC# CRL-1690]

We also can undertake immunohistochemical analyses of these cell lines following their treatment according to client specifications. Interested parties should contact Kinexus directly for more information about these custom immunohistochemistry services.

Over 250 cell and tissue lysates are available from Kinexus for use in our proteomics services. The tissue lysates from monkey, mouse and rat that we have produced should be particularly useful for characterizing the tissue distributions of lesser known proteins. We are providing access to these cell and tissue lysates for Kinex™ antibody microarray and custom Kinetworks™ multi-immunoblotting at no extra cost for our clients than our standard non-confidential pricing for these unique signal transduction protein profiling services. Moreover, we are giving the option for our clients to mix our cell/tissue lysate samples with their own for these analyses. We plan to make much of the data from these studies available in KiNET in the near future so that the broad life sciences community can benefit.

## 7. KINEX™ ANTIBODY MICROARRAY SERVICES

The Kinex™ Antibody Microarray Service tracks more cell signalling proteins for their expression and phosphorylation than any other company, and we offer the distinct advantage that any of the antibody microarray can be inexpensively and quickly validated with our parallel Custom Kinetworks™ Multi-Immunoblotting Services. The Kinex™ microarray signal transduction protein profiling services are a convenient and very cost-effective solution to assist scientists in the broad discovery of productive research leads such as biomarkers. These services utilize microarrays of printed antibodies to track the differential binding of dye-labeled proteins in lysates from cells and tissues. The results can provide productive insights into differences in protein expression, phosphorylation and protein-protein interactions. **However, as non-denatured proteins are analyzed by this method, there is increased opportunity for false positives and false negatives due to antibody cross-reactivity and blocked epitopes in protein complexes. Therefore, this technique is less accurate than our Kinetworks™ multi-immunoblotting service. Typically a third of the protein expression or phosphorylation changes by a perturbation of an experimental model system detected with the Kinex™ antibody are confirmed by immunoblotting. We highly recommend that any interesting Kinex™ results that clients wish to follow up be first validated by Western blotting.** Further information about the expression or phosphorylation of leads may often be obtained through query of our KiNET™ on-line databank with results from over 6000 Kinetworks™ immunoblots.

For about 15 to 20% of the protein changes detected by Kinex™ antibody microarrays, we are unable to validate by immunoblotting, because in these cases no detectable immunoreactive proteins were evident as the antibody microarray appears to be much more sensitive than standard Western blotting. Since the Kinex™ KAM-1.2 chip has typically 20 times the antibody coverage, it uses 5-10-times less cell/tissue lysate protein, and it yields duplicate measurements at 10-30-times less cost than a Kineteworks™ immunoblot analysis, this antibody microarray is a particularly attractive route to initiate a system biology, proteomics approach to studying human disease or an experimental model system.

At least 800 different commercial antibodies from over 20 different vendors and which have been proven in-house by Kinexus to perform well in Western blotting applications are incorporated into our Kinex™ KAM-1.2 antibody microarray. The KAM-1.2 chip with two samples analyzed at a time tracks around 650 cell signalling proteins in duplicate for more than 270 different phospho-sites, 240 protein kinases and 110 other cell signalling proteins that regulate cell proliferation, stress and apoptosis; the complete list of target proteins tracked in the Kinex™ KAM-1.2 antibody microarray is available from our website at [www.kinexus.ca](http://www.kinexus.ca). The KSAM-1.2 antibody microarray service has the added benefit above our regular KAM-1.2 service in that our clients can select any two of our more than 250 pre-made cell and tissue lysates for analysis at no additional cost.

With respect to the performance of the Kinex™ antibody microarrays, we have analyzed over 2500 Kinex™ chips to date. The antibodies used in the Kinex™ microarrays have been optimized to work in human, mouse and rat model systems, but have also been shown commonly to work in chicken, bovine, porcine, canine, rabbit, frog, sea star and other diverse model systems. In internal studies, we found that the median spread between duplicate measurements with the same antibody in printed pairs was about 12% (i.e. the median range from the average of the duplicates is  $\pm 7\%$ ). The frequency of inconsistent duplicate measurements for the same protein was less than 4.5%. The dynamic range between the highest and lowest reproducible dye-bound protein signals from these Kinex™ chips was over 130-fold. This performance exceeded that of antibody microarrays from our competitors tested in our hands. Moreover, we have determined that the costs of using our Kinex™ service is 20% to 55% less than the cost of purchasing competitor antibody microarrays and a researcher performing this kind of analysis in their own lab (the added costs of the chip scanners and quantification software license was not included in these comparisons).

One of the key differences between the Kinex™ antibody microarray chips and competitor microarrays that are available for purchase is that we label the control and treatment lysate samples with the same dye, and we analyze both samples separately, but on the same chip. In

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

## **8. CUSTOM KINETWORKS™ MULTI-IMMUNOBLOTTING SERVICES**

The Kinetworks™ signal transduction protein profiling services are a convenient and cost-effective solution to assist scientists in the discovery of productive research leads. These services utilize a proprietary technology based on multi-immunoblotting that generates a unique identification pattern for each sample analyzed and can provide information about the quantitative expression level for each protein detected and its phosphorylation. The method is highly accurate, since the detection of a target protein is based on its immunoreactivity and apparent molecular mass. Kinexus has undertaken the testing of more than 3500 commercial antibodies from over 20 leading companies to select the most potent and specific antibodies for detecting low abundance proteins over a wide range of model systems. The Kinetworks™ approach, which has been under development and field-tested for over nine years, is faster and more sensitive for specific protein detection and offers greater versatility and reproducibility than many other proteomics methods. Presently, Kinexus can track more than 650 distinct cell signalling proteins and several hundred unknown cross-reactive proteins, and we intend to continually increase the number of signalling proteins that we can reliably track. Only our Kinex™ antibody microarray services provide a cheaper alternative to profiling changes in protein expression and phosphorylation than our Kinetworks™ protein profiling, but the microarray approach is less accurate and generates a high degree of false positives and false negatives.



Kinexus currently offers 6 different standard analytical signal transduction protein profiling services and 2 custom Kinetworks™ services. These are the custom Kinetworks™ KCPS 1.0 Multi-Antibody Protein Screen (which allows clients to choose *any* 18 antibodies of interest out of more than 800) and the Kinetworks™ KCSS 1.0 Multi-Sample Screen (which allows clients to choose up to 3 target proteins (of diverse molecular weight) quantified in 8 different samples side by side on the same immunoblot). The custom Kinetworks™ KCPS 1.0 Multi-Antibody Protein Screen is especially useful for validating the specificity of antibodies within a cell or tissue type that clients may want to follow up by immunohistochemistry analysis. Our Kinetworks™ KCSS 1.0 Multi-Sample Screen can also be used with any of the pre-made cell/tissue lysates from our In Vivo Services. Clients may access all of these multi-immunoblotting screens through our normal Kinetworks™ services (see the Kinetworks™ Services Customer Information Package that can be downloaded from our home page at [www.kinexus.ca](http://www.kinexus.ca)).

Kinexus provides both qualitative and semi-quantitative analyses of the expression and phosphorylation states of protein kinases and cell signalling proteins in cell and tissue samples as part of the Custom Kinetworks™ screening service. The qualitative analyses include TIFF files of the immunoblots that feature the detected target signalling proteins (see example of a Kinetworks™ immunoblot image below). The Kinetworks™ analysis has been specially optimized to reveal band shifts in signalling proteins on SDS-PAGE gels that may arise from their phosphorylation. The quantitative analysis of the strength of the enhanced chemiluminescence signal for each target protein is provided in a Microsoft Excel spreadsheet. For multiple samples within the same profiles, Kinexus provides Comparison Reports for the target proteins and graphs the data against the control samples. To view a sample Kinetworks™ Report, please visit our website at [www.kinexus.ca](http://www.kinexus.ca) and select the links “Our services” and “Kinetworks™”. All the Kinetworks™ Screens have been optimized to perform in human, mouse and rat model systems, but can also work for many protein targets in cow, pig, dog, rabbit, chicken, frog, sea star and other various model systems. Many examples are available for viewing on our website.

## 9. KINET DATABANK ACCESS

KiNET ([www.kinet.ca](http://www.kinet.ca)) is the first Internet proteomics database of its kind, and it is freely accessible on-line. This powerful tool has built in bioinformatics searching capabilities for cell signalling research. Presently KiNET features over 200,000 measurements of the expression and phosphorylation states of hundreds of signal transduction proteins from over 6000 multi-immunoblots blots performed with control and treated tissue/cell samples. This highly unique data set has been generated in-house over the last 10 years by Kinexus in part through our Kinetworks™ immunoblotting services. Over 95% of the data in KiNET is unpublished and not available elsewhere.

KiNET enables subscribers to generate data tables that are tailored to their specific cell signalling research questions. KiNET can be queried for the regulation of a target protein in hundreds of well defined experimental model systems. Alternatively, a tissue, cell line or specific treatment can be interrogated for changes in the expression and phosphorylation of hundreds of different proteins. Since all of the KiNET data was produced with the same reagents, methodology and equipment by our highly experienced scientists and technicians, the results are highly comparable.

With the availability of KiNET, our Kinetworks™ immunoblotting services have become even more powerful for cell signalling research, since our clients can now view their Kinetworks™ results in a much broader context. Our clients can correlate changes that they observe in particular target proteins of interest in their experimental model systems with hundreds of other cells and tissues. KiNET is also a useful tool to plan out future Kinetworks™ experiments to maximize the prospects of research success. Clients can preview the expression levels and phosphorylation states of specific proteins in similar experimental model systems to better select the subset of proteins they should investigate. KiNET may also be useful for validation of some of the findings from our Kinex™ antibody microarray services.

Kinexus also provides free access to our on-line SigNET KnowledgeBank. The first of these is PhosphoNET ([www.phosphonet.ca](http://www.phosphonet.ca)), which contains detailed information on more than 74,000 human phosphorylation sites and their evolutionary conservation in up to 22 other species. Additional knowledgebases about protein kinases, protein phosphatases, adaptor proteins and stress proteins are under development.

## 10. CUSTOM GRAPHICS SERVICES

As part of our commitment to ensuring that our clients are able to fully benefit from their Kinetworks™ multi-immunoblotting services, we are pleased to offer custom graphics services to assist in the production of presentation and publication ready materials based on the results of our proteomics services. We can prepare colored slides suitable for Microsoft® PowerPoint presentation or black and white figures that are suitable for journal publication. Our standard charge is \$89 per slide or figure. We offer such a low price for this service as it is partly subsidized by our Sales and Marketing program. We feel that if you present your Kinetworks™ results, then we also benefit from the increased exposure.

The PowerPoint slides can be produced with overlaid images of the Kinetworks™ immunoblot scans. In the case of the Kinetworks™ immunoblots, all of the detected target proteins are

provided both unlabeled and labeled with their names on the images. Powerpoint slides may also be generated for bar graph representation of the Kinetworks™ results. Furthermore, we can also prepare simple diagrammatic slides of cell signaling pathways.

For journal publication, we can prepare black, white and gray scale figures of either Kinetworks™ immunoblot images or Kinex™ microarray scans. We can also produce black and white figures of bar graph representation of the Kinetworks™ results. These figures can be supplied in Adobe® Illustrator, Adobe® Photoshop (eps, tiff) or Adobe® pdf format.

**Turnaround time for these graphical services is typically within two weeks. All figures are delivered in electronic format by e-mail. Clients should view the Graphics Services Customer Information Package (which can be downloaded from the homepage of the Kinexus website) for more information about these services and ordering forms.**



KINEXUS

Page 1

## SERVICE ORDER FORM

CUSTOM IMMUNOHISTOCHEMISTRY SERVICES

Form: IHC-SOF-01

KINEXUS ORDER NUMBER

### IHC SERVICES

#### CUSTOMER INFORMATION

☐ 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

#### IMMUNOHISTOCHEMISTRY REPORTS

SLIDES SENT TO: ☐ AUTHORIZED REPRESENTATIVE/INVESTIGATOR AND/OR ☐ CONTACT PERSON

☐ SEND SCANNED RESULTS BY E-MAIL

#### BILLING INFORMATION

*Minimum of 10 slides per order. Antibody immunostaining optimization is not a requirement for placement of an order. Clients can also supply their own slides ready for immunostaining and imaging. Orders with client-supplied antibodies are priced the same as if the antibody was from Kinexus. Whole slides are imaged at 20X or 40X magnification options. Non-confidential pricing is available only with the imaging included. If clients require receipt of only the scanned images of the immunostained slides, and not the actual slides, the shipping and handling fees do not apply. All prices in U.S. Funds. Allow 3 to 4 weeks for processing your order.*

##### Tissue Preparation Services

Gross one tissue into cassette	_____ @ \$4.99 U.S. per tissue	\$ _____
Paraffin process one sample	_____ @ \$7.49 U.S. per sample	\$ _____
Paraffin section one slide	_____ @ \$4.99 U.S. per slide	\$ _____
Frozen (Cryo) embed one sample	_____ @ \$4.99 U.S. per sample	\$ _____
Frozen (Cryo) section one slide	_____ @ \$7.49 U.S. per slide	\$ _____

##### Antibody Immunostaining Optimization

Antibody optimization per antibody (25 or more antibodies)	_____ @ \$348.00 U.S. per Ab	\$ _____
Antibody optimization per antibody (less than 25 antibodies)	_____ @ \$498.00 U.S. per Ab	\$ _____

##### Immunostaining only – Kinexus Antibody and One Client-supplied Specimen

Number of IHC slides – 1 antibody, Confidential	_____ @ \$44.00 U.S. per slide	\$ _____
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##### Immunostaining only – Kinexus Antibody and Two Client-supplied Specimens

Number of IHC slides – 1 antibody, Confidential	_____ @ \$48.00 U.S. per slide	\$ _____
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##### Immunostaining and Imaging – Kinexus Antibody and One Client-supplied Specimen

Number of IHC slides – 20X power, 1 antibody, Non-confidential	_____ @ \$48.00 U.S. per slide	\$ _____
Number of IHC slides – 20X power, 1 antibody, Confidential	_____ @ \$58.00 U.S. per slide	\$ _____
Number of IHC slides – 40X power, 1 antibody, Non-confidential	_____ @ \$58.00 U.S. per slide	\$ _____
Number of IHC slides – 40X power, 1 antibody, Confidential	_____ @ \$68.00 U.S. per slide	\$ _____

##### Immunostaining and Imaging – Kinexus Antibody and Two Client-supplied Specimens

Number of IHC slides – 20X power, 1 antibody, Non-confidential	_____ @ \$52.00 U.S. per slide	\$ _____
Number of IHC slides – 20X power, 1 antibody, Confidential	_____ @ \$62.00 U.S. per slide	\$ _____
Number of IHC slides – 40X power, 1 antibody, Non-confidential	_____ @ \$62.00 U.S. per slide	\$ _____
Number of IHC slides – 40X power, 1 antibody, Confidential	_____ @ \$72.00 U.S. per slide	\$ _____

##### Immunostaining and Imaging – Kinexus Antibody and One Kinexus-supplied Specimen

Number of IHC slides – 20X power, 1 antibody + 1 specimen	_____ @ \$58.00 U.S. per slide	\$ _____
Number of IHC slides – 40X power, 1 antibody + 1 specimen	_____ @ \$68.00 U.S. per slide	\$ _____

Shipping and handling cost for processed slides	_____ @ \$40.00 U.S. per order	\$ _____
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**SUBTOTAL** = \$ \_\_\_\_\_

Quotation or Reference Number: \_\_\_\_\_ - \$ \_\_\_\_\_

**TOTAL COST FOR THIS ORDER** = \$ \_\_\_\_\_

FOR CANADIAN CUSTOMERS ONLY:

Add an additional 6% to the above total for GST (No. 893907329 RT0001): + \$ \_\_\_\_\_ = \$ \_\_\_\_\_

**TOTAL AMOUNT PAYABLE IN U.S. FUNDS**

IHC SERVICES  
Page 2

SERVICE ORDER FORM  
CUSTOM IMMUNOHISTOCHEMISTRY SERVICES

KINEXUS ORDER NUMBER

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 IHC SERVICE AGREEMENT AND AGREES TO BE BOUND BY THE TERMS AND CONDITIONS:

Print Name of Authorized Representative or Principal Investigator

Authorized Signature

Date (m/d/y)

How did you originally hear about our IHC Services?

☐ Direct Mail    ☐ Email    ☐ Web Site    ☐ Advertisement    ☐ Referral    ☐ Conference or Trade Show    ☐ Other



**CLIENT SUPPLIED  
CONFIDENTIAL SAMPLE DESCRIPTION FORM**  
*Subject to terms of the Kinexus IHC Service Agreement*

Form: **IHC-CSDF-01**

**KINEXUS ORDER NUMBER**

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

**Confidential Service Requested and Sample Details:**

Clients are required to complete Sections A and B for a Confidential analysis with the Custom IHC Service. 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" (IHC-NSDF-01) to qualify for the Non-Confidential pricing. If you need assistance completing this form, please contact a technical service representative by calling toll free in North America 1-866-KINEXUS (866-546-3987) or by email at [info@kinexus.ca](mailto:info@kinexus.ca).

<b>A. SAMPLE IDENTIFICATION:</b> Client Name for Sample: _____ Control: <input type="checkbox"/> Yes <input type="checkbox"/> No Clients should provide at least enough tissue for 20 slides.	<b>KINEXUS ID NUMBER</b> (FOR INTERNAL USE ONLY) <i>(Bar Code Identification Number)</i>
<b>B. SPECIES:</b> <input type="checkbox"/> Human ( <i>Homo sapiens</i> ) Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> M/F pooled <input type="checkbox"/> Unknown <input type="checkbox"/> Rat ( <i>Rattus norvegicus</i> ) # Animals: _____ Age: _____ Weight: _____ <input type="checkbox"/> Mouse ( <i>Mus musculus</i> ) <input type="checkbox"/> Other – Provide scientific & common name: _____	
<b>A. SAMPLE IDENTIFICATION:</b> Client Name for Sample: _____ Control: <input type="checkbox"/> Yes <input type="checkbox"/> No Clients should provide at least enough tissue for 20 slides.	<b>KINEXUS ID NUMBER</b> (FOR INTERNAL USE ONLY) <i>(Bar Code Identification Number)</i>
<b>B. SPECIES:</b> <input type="checkbox"/> Human ( <i>Homo sapiens</i> ) Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> M/F pooled <input type="checkbox"/> Unknown <input type="checkbox"/> Rat ( <i>Rattus norvegicus</i> ) # Animals: _____ Age: _____ Weight: _____ <input type="checkbox"/> Mouse ( <i>Mus musculus</i> ) <input type="checkbox"/> Other – Provide scientific & common name: _____	
<b>A. SAMPLE IDENTIFICATION:</b> Client Name for Sample: _____ Control: <input type="checkbox"/> Yes <input type="checkbox"/> No Clients should provide at least enough tissue for 20 slides.	<b>KINEXUS ID NUMBER</b> (FOR INTERNAL USE ONLY) <i>(Bar Code Identification Number)</i>
<b>B. SPECIES:</b> <input type="checkbox"/> Human ( <i>Homo sapiens</i> ) Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> M/F pooled <input type="checkbox"/> Unknown <input type="checkbox"/> Rat ( <i>Rattus norvegicus</i> ) # Animals: _____ Age: _____ Weight: _____ <input type="checkbox"/> Mouse ( <i>Mus musculus</i> ) <input type="checkbox"/> Other – Provide scientific & common name: _____	

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

\_\_\_\_\_  
Name of person completing this form

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date (m/d/y)





Form: IHC-NSDF-01

**CLIENT SUPPLIED  
NON-CONFIDENTIAL SAMPLE DESCRIPTION FORM**  
*Subject to terms of the Kinexus IHC Service Agreement*

KINEXUS ORDER NUMBER

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

**Non-Confidential Services Requested and Sample Details:**

Clients are required to complete all Sections A-J to qualify for the Non-Confidential pricing level with the Custom IHC Service. If sample details are to remain Confidential, please complete instead the "Client Supplied Confidential Sample Description Form" (IHC-CSDf-01) in Sections A and B. If you need assistance completing this form, please contact a technical service representative by calling toll free in North America 1-866-KINEXUS (866-546-3987) or by email at [info@kinexus.ca](mailto:info@kinexus.ca). We can only analyze cultured cells by immunohistochemistry if they are supplied fixed to glass cover slips.

<b>A. SAMPLE IDENTIFICATION:</b> Client Name for Sample: _____ Control: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>Clients should provide at least enough tissue for 20 slides.</i>	<b>KINEXUS ID NUMBER</b> (FOR INTERNAL USE ONLY) <i>(Bar Code Identification Number)</i>
<b>B. SPECIES:</b> <input type="checkbox"/> Human ( <i>Homo sapiens</i> ) Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> M/F pooled <input type="checkbox"/> Unknown <input type="checkbox"/> Rat ( <i>Rattus norvegicus</i> ) # Animals: _____ Age: _____ Weight: _____ <input type="checkbox"/> Mouse ( <i>Mus musculus</i> ) <input type="checkbox"/> Other – Provide scientific & common name: _____	<b>C. SAMPLE SOURCE:</b> <b>Tissues:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, proceed to Section E</i> <b>Cells:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, proceed to Section F</i>
<b>D. TISSUES:</b> A. Organ source of tissue: _____ B. Tissue name: _____ C. Disease condition if appropriate: _____	<b>E. FIXED CELLS ON GLASS COVER SLIPS:</b> Is your sample a primary culture? <input type="checkbox"/> Yes <input type="checkbox"/> No Is your sample an established cell line? <input type="checkbox"/> Yes <input type="checkbox"/> No A. Name of cell line: _____ B. Organ source of cells: _____ C. Tissue or cell type: _____ D. Disease condition if appropriate: _____
<b>F. CELL STATE:</b> <input type="checkbox"/> N/A <input type="checkbox"/> Subconfluent <input type="checkbox"/> Quiescent <input type="checkbox"/> Confluent <input type="checkbox"/> Senescent <input type="checkbox"/> Proliferating <input type="checkbox"/> Apoptosing <input type="checkbox"/> Differentiated <input type="checkbox"/> Stressed	<b>G. PERTURBATION:</b> <input type="checkbox"/> Normal untreated <i>If yes, proceed to Section I</i> <input type="checkbox"/> Normal treated <i>If yes, proceed to Section H</i> <input type="checkbox"/> Diseased untreated <i>If yes, proceed to Section I</i> <input type="checkbox"/> Diseased treated <i>If yes, proceed to Section J</i>
<b>H. TREATMENTS:</b> <i>Please indicated if you used combined [CMB] or sequential [SEQ] treatments and provide details on your treatment:</i> 1. Name of compound/stimuli: _____ Concentration: _____ Time: _____ <input type="checkbox"/> CMB <input type="checkbox"/> SEQ 2. Name of compound/stimuli: _____ Concentration: _____ Time: _____ <input type="checkbox"/> CMB <input type="checkbox"/> SEQ 3. Name of compound/stimuli: _____ Concentration: _____ Time: _____ <input type="checkbox"/> CMB <input type="checkbox"/> SEQ Details of treatment: _____ _____ _____	
<b>I. ADDITIONAL SAMPLE INFORMATION:</b> <i>Please include any additional information that differentiates your samples:</i> Transgenic: <input type="checkbox"/> Yes <input type="checkbox"/> No Knockout: <input type="checkbox"/> Yes <input type="checkbox"/> No Wildtype: <input type="checkbox"/> Yes <input type="checkbox"/> No Transfected/Over-expressed: <input type="checkbox"/> Yes <input type="checkbox"/> No Mutant: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>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> _____ _____ _____	

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-I 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 (m/d/y)



# KINEXUS

## CLIENT-SUPPLIED ANTIBODY DESCRIPTION FORM

Subject to terms of the Kinexus IHC Service Agreement

Form: **IHC-CADF-01**

**KINEXUS ORDER NUMBER**

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

### CUSTOM IMMUNOHISTOCHEMISTRY SERVICE REQUESTED: (WITH CLIENT ANTIBODIES)

Clients have the option of using their own antibodies for IHC analysis if they fully describe the nature of the probing antibodies (including immunogen sequence, the animal species in which the antibody was produced as well as manufacturer's name and catalogue number if it is commercially sourced). Please note that in the event that clients do not wish to disclose the source or nature of the antibodies that they are providing, then Confidential Pricing must apply. Clients must still complete Sections A to C for Confidential analyses. Please check the appropriate tick boxes.

<b>A. ANTIBODY IDENTIFICATION:</b> Client Name for Antibody: _____ Is the Antibody supplied lyophilized? <input type="checkbox"/> No <input type="checkbox"/> Yes If No, then what is the Antibody dissolved in? _____ Concentration: _____ Volume: _____ <i>Clients should provide at least enough antibody for making 0.5 ml of solution per slide at the desired concentration</i>	<b>B. PREVIOUS USE OF ANTIBODY</b> Recommended dilution for Immunohistochemistry probing: _____ Application methods previously tested positive: IHC Paraffin <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown IHC Frozen <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Western Blot <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Immunofluoresc. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown ELISA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Antigen Location: Tissue: _____ Region: _____ Subcellular: <input type="checkbox"/> Cytoplasmic <input type="checkbox"/> Nuclear <input type="checkbox"/> Membrane
<b>C. SPECIES OF ANTIBODY ORIGIN AND TYPE:</b> <input type="checkbox"/> Rabbit <input type="checkbox"/> Monoclonal <input type="checkbox"/> Mouse <input type="checkbox"/> Polyclonal <input type="checkbox"/> Goat <input type="checkbox"/> Human <input type="checkbox"/> Other – Provide common name: _____	<b>KINEXUS ID NUMBER</b> (FOR INTERNAL USE ONLY) (Bar Code Identification Number) <b>D. COMMERCIAL SOURCE OF ANTIBODY</b> (if applicable) Supplier Name: _____ Supplier Catalog Number: _____ Supplier Lot Number: _____
<b>E. IMMUNOGEN INFORMATION:</b> Species of origin of protein or peptide sequence: _____ Protein: <input type="checkbox"/> Yes Protein Name: _____ Peptide: <input type="checkbox"/> Yes <i>If yes, please go to Box F and provide the amino acid sequence</i>	<b>F. AMINO ACID SEQUENCE OF IMMUNIZING PEPTIDE</b> _____ _____ _____

<b>A. ANTIBODY IDENTIFICATION:</b> Client Name for Antibody: _____ Is the Antibody supplied lyophilized? <input type="checkbox"/> No <input type="checkbox"/> Yes If No, then what is the Antibody dissolved in? _____ Concentration: _____ Volume: _____ <i>Clients should provide at least enough antibody for making 0.5 ml of solution per slide at the desired concentration</i>	<b>B. PREVIOUS USE OF ANTIBODY</b> Recommended dilution for Immunohistochemistry probing: _____ Application methods previously tested positive: IHC Paraffin <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown IHC Frozen <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Western Blot <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Immunofluoresc. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown ELISA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Antigen Location: Tissue: _____ Region: _____ Subcellular: <input type="checkbox"/> Cytoplasmic <input type="checkbox"/> Nuclear <input type="checkbox"/> Membrane
<b>C. SPECIES OF ANTIBODY ORIGIN AND TYPE:</b> <input type="checkbox"/> Rabbit <input type="checkbox"/> Monoclonal <input type="checkbox"/> Mouse <input type="checkbox"/> Polyclonal <input type="checkbox"/> Goat <input type="checkbox"/> Human <input type="checkbox"/> Other – Provide common name: _____	<b>KINEXUS ID NUMBER</b> (FOR INTERNAL USE ONLY) (Bar Code Identification Number) <b>D. COMMERCIAL SOURCE OF ANTIBODY</b> (if applicable) Supplier Name: _____ Supplier Catalog Number: _____ Supplier Lot Number: _____
<b>E. IMMUNOGEN INFORMATION:</b> Species of origin of protein or peptide sequence: _____ Protein: <input type="checkbox"/> Yes Protein Name: _____ Peptide: <input type="checkbox"/> Yes <i>If yes, please go to Box F and provide the amino acid sequence</i>	<b>F. AMINO ACID SEQUENCE OF IMMUNIZING PEPTIDE</b> _____ _____ _____

I hereby certify that all of the information about cell/tissue samples and antibodies that I provided in this order is correct and accurate to the best of my knowledge.



KINEXUS

Form: IHC-SPF-01

IHC SERVICES

CUSTOM IMMUNOHISTOCHEMISTRY  
SAMPLE PROCESSING FORM

KINEXUS ORDER NUMBER

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

The IHC Services offers the convenience of having Kinexus perform various aspects of immunohistochemistry analyses including tissue grossing, embedding and sectioning, immunostaining and scanning. Clients may provide their own specimens and antibodies for these services or select from antibodies and tissue specimens from Kinexus' inventories. Please provide detailed instructions below on how the specimens are to be prepared and analyzed. If you need assistance completing this form, please contact a technical service representative by calling toll free in North America 1-866-KINEXUS (866-546-3987) or by email at [info@kinexus.ca](mailto:info@kinexus.ca). Please check the appropriate tick boxes. Make sure that you also complete a Sample Description Form (IHC-SDF-01) for each specimen.

**A. SAMPLE DETAILS:**

Specimen Supplied by Kinexus? ☐ No ☐ Yes If yes, proceed to Section C. Otherwise please complete the information below and in Section B.  
For each client-supplied sample, provide enough tissue specimen for preparation of at least 20 slides.

ID Numbers of Samples from Sample Description Forms (IHC-SDF-01) \_\_\_\_\_ ☐ Solid or ☐ Liquid

FOR LIQUIDS PROVIDE DESCRIPTION (e.g. 70% EtOH, 10% formalin): \_\_\_\_\_ Time in previous storage: \_\_\_\_\_

Is the solution toxic? ☐ No ☐ Yes Provide safety instructions and storage details for handling: \_\_\_\_\_

FOR SOLIDS PROVIDE DESCRIPTION: Frozen ☐ No ☐ Yes | Paraffin ☐ No ☐ Yes | Resin ☐ No ☐ Yes | Already embedded ☐ No ☐ Yes

**B. REQUESTED CLIENT SAMPLE PREPARATION DETAILS:** Please provide detailed information on how you would like use to prepare your samples for grossing, embedding and sectioning prior to immunostaining.

PROCESSING REQUIRED: Paraffin embedding ☐ No ☐ Yes | Resin embedding ☐ No ☐ Yes

Orientation to embed: \_\_\_\_\_

Sectioning required: \_\_\_\_\_  
# sections / slide (maximum is 2) # slides / sample section thickness (µm)

Special handling or instructions: \_\_\_\_\_

**C. KINEXUS SUPPLIED SAMPLE SELECTION:** Please refer to Appendix G of the IHC Service Information Package to choose from the collection of tissue specimens that are available from Kinexus. Record the appropriate ID codes from Appendix G (highlighted in yellow). To reduce the risk of error, please also provide the abbreviated name of the species and tissue. Enter this information in Section E.

**D. ANTIBODY SELECTION FOR IMMUNOSTAINING:**

Antibody Supplied by Client? ☐ No ☐ Yes If yes, please provide a completed Client-Supplied Antibody Description Form (IHC-CADF-01).  
Completion of the IHC-CADF-01 form in full is required in order to qualify for Non-Confidential pricing.

Antibody Supplied by Kinexus? ☐ No ☐ Yes If yes, please refer to Appendix H of the IHC Service Information Package to choose from the collection of suitable antibodies available from Kinexus. Record the appropriate ID codes from Appendix H (highlighted in yellow) in Section E. To reduce the risk of error, please also provide the abbreviated name of the protein target of the antibody and, if applicable, the desired phosphorylation site. To ensure that each sample is matched with the appropriate antibody, enter the Sample ID number as well in Section E.

Note that the specificity of any antibody can vary for each experimental model system. We highly recommend that the antibodies to be used are pre-tested for their specificity with the desired samples by Western blotting, which we can perform with our Kinetworks™ Custom KPCS-1.0 Immunoblotting Service.

**E. SLIDE SPECIMEN AND ANTIBODY DESCRIPTION:**

Slide #	Client Sample ID	or Kinexus Sample ID	Species	Tissue	Client Antibody ID	or Kinexus Antibody ID	Antibody Target Name (+ phospho-site)	Desired Antibody Conc. (µg/ml)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Name of person completing this form

Email Address/Phone Number

Date (m/d/y)



## 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: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### RECITALS

**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](http://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 Immunohistochemistry 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.

\_\_\_\_\_  
*Printed Name of Institute or Company*

Per: \_\_\_\_\_  
*Signature of Authorized Representative*

Name: \_\_\_\_\_  
*Printed Name of Authorized Representative*

Title: \_\_\_\_\_  
*Printed Title of Authorized Representative*

Date signed: \_\_\_\_\_

**KINEXUS BIOINFORMATICS CORPORATION**

Per: \_\_\_\_\_  
*Signature of Dr. Steven Pelech*

**Dr. Steven Pelech**

**President and Chief Scientific Officer**

Date signed: \_\_\_\_\_

## Appendix G. Inventory of Kinexus Tissues for Immunohistochemistry.

	Organ/Tissue	Animal	Species	Gender	Code	Strain
	Cecum	Pig	Sus scrofa	Female	PFCEYT-1	YacTan Swine
					PFCEYS-1	Yorkshire Swine
		Mouse	Mus musculus	Female	MFCECD-1	CD-1
				Male	MMCECD-1	
		Rat	Rattus norvegicus	Female	RFCESD-1	Sprague-Dawley
				Male	RMCESD-1	
	Colon	Pig	Sus scrofa	Female	PFCOYT-1	YacTan Swine
					PFCOYS-1	Yorkshire Swine
		Mouse	Mus musculus	Female	MFCOCD-1	CD-1
				Male	MMCOCD-1	
		Rat	Rattus norvegicus	Female	RFCOSD-1	Sprague-Dawley
				Male	RMCOSD-1	
	Duodenum	Pig	Sus scrofa	Female	PFDUYT-1	YacTan Swine
					PFDUYS-1	Yorkshire Swine
		Mouse	Mus musculus	Female	MFDUCD-1	CD-1
				Male	MMDUCD-1	
		Rat	Rattus norvegicus	Female	RFDUSD-1	Sprague-Dawley
				Male	RMDUSD-1	
	Heart	Pig	Sus scrofa	Female	PFHEYT-1	YacTan Swine
					PFHEYS-1	Yorkshire Swine
		Mouse	Mus musculus	Female	MFHECD-1	CD-1
				Male	MMHECD-1	
		Rat	Rattus norvegicus	Female	RFHESD-1	Sprague-Dawley
				Male	RMHESD-1	
	Ileum	Pig	Sus scrofa	Female	PFILYT-1	YacTan Swine
					PFILYS-1	Yorkshire Swine
		Mouse	Mus musculus	Female	MFILCD-1	CD-1
				Male	MMILCD-1	
		Rat	Rattus norvegicus	Female	RFILSD-1	Sprague-Dawley
				Male	RMILSD-1	
	Jejunum	Pig	Sus scrofa	Female	PFJEYT-1	YacTan Swine
					PFJEYS-1	Yorkshire Swine
		Mouse	Mus musculus	Female	MFJECD-1	CD-1
				Male	MMJECD-1	
		Rat	Rattus norvegicus	Female	RFJESD-1	Sprague-Dawley
				Male	RMJESD-1	
	Kidney	Pig	Sus scrofa	Female	PFKIYT-1	YacTan Swine
					PFKIYS-1	Yorkshire Swine
		Mouse	Mus musculus	Female	MFKICD-1	CD-1
				Male	MMKICD-1	
		Rat	Rattus norvegicus	Female	RFKISD-1	Sprague-Dawley
				Male	RMKISD-1	
					RMKEWI-1	Wistar

Organ/Tissue	Animal	Species	Gender	Code	Strain
Liver	Pig	Sus scrofa	Female	PFLIYT-1	YacTan Swine
				PFLIYS-1	Yorkshire Swine
	Mouse	Mus musculus	Female	MFLICD-1	CD-1
			Male	MMLICD-1	
	Rat	Rattus norvegicus	Female	RFLISD-1	Sprague-Dawley
			Male	RMLISD-1	
Lung	Pig	Sus scrofa	Female	PFLUYT-1	YacTan Swine
				PFLUYS-1	Yorkshire Swine
	Mouse	Mus musculus	Female	MFLUCD-1	CD-1
			Male	MMLUCD-1	
	Rat	Rattus norvegicus	Female	RFLUSD-1	Sprague-Dawley
			Male	RMLUSD-1	
Pancreas	Pig	Sus scrofa	Female	PFPAYT-1	YacTan Swine
				PFPAYS-1	Yorkshire Swine
	Mouse	Mus musculus	Female	MFPACD-1	CD-1
			Male	MMPACD-1	
	Rat	Rattus norvegicus	Female	RFPASD-1	Sprague-Dawley
			Male	RMPASD-1	
Spleen	Pig	Sus scrofa	Female	PFSLYT-1	YacTan Swine
				PFSLYS-1	Yorkshire Swine
	Mouse	Mus musculus	Female	MFSLCD-1	CD-1
			Male	MMSLCD-1	
	Rat	Rattus norvegicus	Female	RFSLSD-1	Sprague-Dawley
			Male	RMSLSD-1	
				RMSLWI-1	Wistar



**KINEXUS**

Suite 1, 8755 Ash Street  
Vancouver, B.C  
Canada V6P 6T3

Phone: 1-866-KINEXUS  
Phone: 1-604-323-2547  
Facsimile: 1-604-323-2548  
E-Mail: [info@kinexus.ca](mailto:info@kinexus.ca)  
Internet: [www.kinexus.ca](http://www.kinexus.ca)

## Appendix H. Inventory of Kinexus Antibodies for Immunohistochemistry.

Over 300 antibodies available for detection of protein expression and phosphorylation are listed.

Please note that Kinexus reserves the right to add, delete or substitute antibodies from this list from time to time without notification.

Target Protein Abbreviation	Target Protein Full Name	Ab Target	Ab Type	I.D. Code	Ab Reactivity			Actual Mol. Mass (kDa)	Obsv. Mol. Mass (kDa)	Link - Protein Refseq	Link - Swiss-Prot
		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
14-3-3 z	14-3-3 protein zeta (cross-reacts with other isoforms)	Pan-specific	MmAb	NN001	T	T	T	28	24	<a href="#">NP_003397</a>	<a href="#">P63104</a>
4E-BP1	Eukaryotic translation initiation factor 4E binding protein 1 (PHAS1)	S65	RpAb	PN001	T	T	T	13	17+19+23	<a href="#">NP_004086</a>	<a href="#">Q13541</a>
Adducin a/g	Adducin alpha (ADD1)	S726	RpAb	PN003-PN004	T	T	T	81	122	<a href="#">NP_058432</a>	<a href="#">P35611</a>
AIF	Apoptosis inducing factor (programed cell death protein 8 (PDCD8))	Pan-specific	GpAb	NN002	T	T	T	67	66	<a href="#">NP_004199</a>	<a href="#">O95831</a>
AMPKb	5'-AMP-activated protein kinase subunit beta 1	Pan-specific	MmAb	NK005	T			30	38	<a href="#">NP_006244</a>	<a href="#">Q9Y478</a>
APG1	Hsp 70-related heat shock protein 1 (osmotic stress protein 94 (OSP94))	Pan-specific	RpAb	NN004	T	T	T	94	104	<a href="#">NP_055093</a>	<a href="#">Q95757</a>
APG2	Hsp 70-related heat shock protein 4 (HSP70RY)	Pan-specific	RpAb	NN122	T	T	T	94	114	<a href="#">BAA75062</a>	<a href="#">P34932</a>
Aurora A (AIK) (was called Aurora 2 (AurB))	Aurora Kinase A (serine/threonine protein kinase 6)	Pan-specific	RpAb	NK008-2	T	T	F	39	47	<a href="#">NP_940835</a>	<a href="#">Q14965</a>
B23 (NPM)	B23 (nucleophosmin, numatrin, nucleolar protein NO38)	T199	RpAb	PN008	T	T	T	33	38	<a href="#">NP_002511</a>	<a href="#">P06748</a>
B23 (NPM)	B23 (nucleophosmin, numatrin, nucleolar protein NO38)	T234	RpAb	PN009	T	T	T	33	38	<a href="#">NP_002511</a>	<a href="#">P06748</a>
b-Arrestin	Arrestin beta	Pan-specific	MmAb	NN121	T	T	T	55		<a href="#">NP_004032</a>	<a href="#">P49407</a>
Bax	Apoptosis regulator Bcl2-associated X protein	Pan-specific	RpAb	NN005	T	T	T	21	16	<a href="#">NP_620116</a>	<a href="#">Q07812</a>
Bcl2	B-cell lymphoma protein 2 aloha	Pan-specific	MmAb	NN006	T	T	T	26	24	<a href="#">NP_000624</a>	<a href="#">P10415</a>
Bcl-XL	Bcl2-like protein 1	Pan-specific	MmAb	NN007	T	T	T	26	27	<a href="#">NP_612815</a>	<a href="#">Q07817</a>
Bcl-xS/L	Bcl-xS/L	Pan-specific	RpAb	NN008	T	T	T	~19	27 + 13	<a href="#">NP_612815</a>	<a href="#">Q07817</a>
Bid	BH3 interacting domain death agonist	Pan-specific	GpAb	NN009	T			22	29	<a href="#">NP_001187</a>	<a href="#">P55957</a>
BLNK	B-cell linker protein	Y84	RpAb	PN013	T	T	T	50	53+61	<a href="#">NP_037446</a>	<a href="#">Q75498</a>
BMX (Etk)	Bone marrow X protein-tyrosine kinase	Pan-specific	MmAb	NK012	T	T	T	78	69	<a href="#">NP_001712</a>	<a href="#">P51813</a>
Btk	Bruton's agammaglobulinemia tyrosine kinase	Pan-specific	RpAb	NK014	T	T	F	76	65	<a href="#">NP_000052</a>	<a href="#">Q06187</a>
CaMK1d	Calcium/calmodulin-dependent protein-serine kinase 1 delta	Pan-specific	GpAb	NK016-2	T	T	T	40	43	<a href="#">NP_003647</a>	<a href="#">Q8IU85</a>
CAMK2b	Calcium/calmodulin-dependent protein-serine kinase 2 beta	Pan-specific	MmAb	NK018-2	T	T	T	73	69	<a href="#">NP_742081</a>	<a href="#">Q13554</a>
CaMK4	Calcium/calmodulin-dependent protein-serine kinase 4	Pan-specific	RpAb	NK021	T	T	T	52	65	<a href="#">NP_001735</a>	<a href="#">Q16566</a>
CaMKK	Calcium/calmodulin-dependent protein-serine kinase kinase	Pan-specific	RpAb	NK022	T	T	T	56	52	<a href="#">NP_006540</a>	<a href="#">Q8N5S9</a>
CAS	Cellular apoptosis susceptibility protein (CSE1L)	Pan-specific	MmAb	NN010	T	T	T	110	94	<a href="#">NP_001307</a>	<a href="#">P55060</a>
CASP1	Pro-caspase 1 (Interleukin-1 beta convertase) alpha isoform	Pan-specific	RpAb	NN011-NN125	T	T	T	45	46	<a href="#">NP_001214</a>	<a href="#">P29466</a>
CASP12	Pro-caspase 12 (mouse)	Pan-specific	RpAb	NN020	T	T	T	48	50	<a href="#">NP_033938</a>	<a href="#">Q08736</a>
CASP2	Pro-caspase 2 (ICH1 protease)	Pan-specific	RpAb	NN012	T	T	T	49	43	<a href="#">NP_001215</a>	<a href="#">P42575</a>
CASP4	Pro-caspase 4 (ICH2 protease, ICE(rel)-II)	Pan-specific	RpAb	NN014	T	F	F	43	38	<a href="#">NP_001216</a>	<a href="#">P49662</a>
CASP5	Caspase 5 (ICH3 protease, ICE(rel)-III)	Pan-specific	RpAb	NN015	T	T	T	48	35+23	<a href="#">NP_004338</a>	<a href="#">P51878</a>
CASP6	Pro-caspase 6 (apoptotic protease Mch2)	Pan-specific	MmAb	NN016	T	F	F	33	32	<a href="#">NP_001217</a>	<a href="#">P55212</a>
CASP7	Pro-caspase 7 (ICE-like apoptotic protease 3 (ICE-LAP3), Mch3)	Pan-specific	MmAb	NN017	T	T	T	34	32	<a href="#">NP_01218</a>	<a href="#">P55210</a>
CASP8	Pro-caspase 8 (ICE-like apoptotic protease 5 (ICE-LAP5), Mch5, FLICE, CAP4)	Pan-specific	MmAb	NN018	T	T	T	55	57	<a href="#">NP_001219</a>	<a href="#">Q14790</a>
CASP8	Pro-caspase 8 (ICE-like apoptotic protease 5 (ICE-LAP5), Mch5, FLICE, CAP4)	Pan-specific	MmAb	NN018-2	T	T	T	55	57	<a href="#">NP_001219</a>	<a href="#">Q14790</a>

Target Protein Abbreviation	Target Protein Full Name	Ab Target	Ab Type	I.D. Code	Ab Reactivity			Actual Mol. Mass (kDa)	Obsv. Mol. Mass (kDa)	Link - Protein Refseq	Link - Swiss-Prot
		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
CASP9	Pro-caspase 9 (ICE-like apoptotic protease 6 (ICE-LAP6), Mch6, APAF3)	Pan-specific	MmAb	NN019	T	T	F	46	42	<a href="#">NP_033938</a>	<a href="#">P55211</a>
Catenin b	Catenin (cadherin-associated protein) beta 1	Pan-specific	RpAb	NN021	T	T	T	85	91	<a href="#">NP_001895</a>	<a href="#">P35222</a>
Catenin b	Catenin (cadherin-associated protein) beta 1	S45	RpAb	PN016	T	T	T	85	84	<a href="#">NP_001895</a>	<a href="#">P35222</a>
Caveolin 2	Caveolin 2	Pan-specific	MmAb	NN022	T	T	T	20		<a href="#">NP_001224</a>	<a href="#">P51636</a>
Caveolin 2	Caveolin 2	S23	RpAb	PN017	T	T	T	18	18	<a href="#">NP_001224</a>	<a href="#">P51636</a>
Caveolin 2	Caveolin 2	S36	RpAb	PN018	T	T	T	18	18	<a href="#">NP_001224</a>	<a href="#">P51636</a>
CD45	Leukocyte common antigen CD45 receptor-tyrosine phosphatase (LCA, T200)	Pan-specific	MmAb	NP001	T	T	T	147	173	<a href="#">NP_002829</a>	<a href="#">P08575</a>
Cdc25B	Cell division cycle 25B phosphatase	Pan-specific	MmAb	NP002	T	T	T	65+64+61	63	<a href="#">NP_004349</a>	<a href="#">P30305</a>
Cdc25C	Cell division cycle 25C phosphatase	Pan-specific	RpAb	NP003	T	T	T	53	56	<a href="#">NP_001781</a>	<a href="#">P30307</a>
CDC42	Cell division control protein 42 homolog	Pan-specific	MmAb	NN024	T	T	T	22		<a href="#">NP_001782</a>	<a href="#">P60953</a>
CDK1	Cyclin-dependent protein-serine kinase 1	Pan-specific	MmAb	NK025-2	T	T	T	34	26	<a href="#">NP_001777</a>	<a href="#">P06493</a>
CDK1/2	Cyclin-dependent protein-serine kinase 1/2	T14+Y15	RpAb	PK006	T	T	T	34	28	<a href="#">NP_001777</a>	<a href="#">P06493</a>
CDK1/2	Cyclin-dependent protein-serine kinase 1/2	Y15	RpAb	PK007-3	T	T	T	34	27	<a href="#">NP_001777</a>	<a href="#">P06493</a>
CDK1/2	Cyclin-dependent protein-serine kinase 1/2	T161/T160	RpAb	PK008	T	T	T	34	27	<a href="#">NP_001777</a>	<a href="#">P06493</a>
CDK2	Cyclin-dependent protein-serine kinase 2	Pan-specific	MmAb	NK026-3	T	T	T	34	27	<a href="#">NP_001789</a>	<a href="#">P24941</a>
CDK4	Cyclin-dependent protein-serine kinase 4	Pan-specific	MmAb	NK027	T	T	T	34	26	<a href="#">NP_000066</a>	<a href="#">P11802</a>
CDK5	Cyclin-dependent protein-serine kinase 5	Pan-specific	RpAb	NK028	T	T	T	33	24	<a href="#">NP_004926</a>	<a href="#">Q00535</a>
CDK6	Cyclin-dependent protein-serine kinase 6	Pan-specific	MmAb	NK029	T	T	T	37	33	<a href="#">NP_001250</a>	<a href="#">Q00534</a>
CDK7	Cyclin-dependent protein-serine kinase 7	Pan-specific	MmAb	NK030-2	T	T	T	39	36	<a href="#">NP_001790</a>	<a href="#">P50613</a>
CDK9	Cyclin-dependent protein-serine kinase 9	Pan-specific	RpAb	NK032	T	T	T	43	34	<a href="#">NP_001252</a>	<a href="#">P50750</a>
Chk1	Checkpoint protein-serine kinase 1	Pan-specific	MmAb	NK034	T	T	F	54	48	<a href="#">NP_001265</a>	<a href="#">Q14757</a>
Chk2	Checkpoint protein-serine kinase 2	Pan-specific	RpAb	NK035	T	T	T	61	60	<a href="#">NP_009125</a>	<a href="#">Q96017</a>
c-IAP1	Cellular inhibitor of apoptosis protein 1 (baculoviral IAP repeat-containing protein 3, apoptosis inhibitor 2 (API2))	Pan-specific	RpAb	NN025	T	T	T	68		<a href="#">NP_001156</a>	<a href="#">Q13490</a>
CK2a	Casein protein-serine kinase 2 alpha/ alpha prime	Pan-specific	RpAb	NK041	T	T	T	45 + 41	34+38.5	<a href="#">NP_001887</a>	<a href="#">P68400</a>
Cofilin	Cofilin 1	Pan-specific	MmAb	NN026	T	T	T	19		<a href="#">NP_005498</a>	<a href="#">P23528</a>
Cofilin 1	Cofilin 1	S3	RpAb	PN019	T	T	T	18	15	<a href="#">NP_005498</a>	<a href="#">P23528</a>
Cofilin 2	Cofilin 2	S3	RpAb	PN020	T	T	T	19	16	<a href="#">NP_068733</a>	<a href="#">Q9Y281</a>
COT	Osaka thyroid oncogene protein-serine kinase (Tol2)	Pan-specific	RpAb	NK042	T	T	T	53	54	<a href="#">NP_005195</a>	<a href="#">P41279</a>
COX2	Cyclo-oxygenase 2 (prostaglandin G/H synthase 2 precursor)	Pan-specific	MmAb	NN027	T	T	T	69	69	<a href="#">NP_000954</a>	<a href="#">P35354</a>
CPG16/CaMKinas	Serine/threonine-protein kinase DCAMK1	Pan-specific	MmAb	NK043	T	T	T	82 + 43	82 + 48	<a href="#">NP_004725</a>	<a href="#">Q15075</a>
CREB1	cAMP response element binding protein 1	S129+S133	RpAb	PN023	T	T	T	37	36	<a href="#">NP_004370</a>	<a href="#">P16220</a>
Crystallin aB	Crystallin alpha B (heat-shock 20 kDa like-protein)	S19	RpAb	PN025	T	T	T	20	18	<a href="#">NP_001876</a>	<a href="#">P02511</a>
Crystallin aB	Crystallin alpha B (heat-shock 20 kDa like-protein)	S45	RpAb	PN110	T	T	T	20	18	<a href="#">NP_001876</a>	<a href="#">P02511</a>
Csk	C-terminus of Src tyrosine kinase	Pan-specific	MmAb	NK044	T	T	T	51	44	<a href="#">NP_004374</a>	<a href="#">P41240</a>
CytoC	Cytochrome C	Pan-specific	RpAb	NN033	T	T	T	12	11	<a href="#">NP_061820</a>	<a href="#">P99999</a>
DAPK1	Death-associated protein kinase 1	Pan-specific	RpAb	NK045	T	T	T	160	158	<a href="#">NP_004929</a>	<a href="#">P53355</a>
DAXX	Death-associated protein 6 (BING2)	Pan-specific	RpAb	NN034	T	T	T	81	137	<a href="#">NP_001341</a>	<a href="#">Q9UER7</a>
DFF45	DNA fragmentation factor alpha (ICAD) 45-kDa subunit	Pan-specific	MmAb	NN035-NN126	T		T	45	41	<a href="#">NP_004392</a>	<a href="#">Q00273</a>
Dok1/p62dok	Docking protein 1	Pan-specific	MmAb	NN037	T			62		<a href="#">NP_001372</a>	<a href="#">Q99704</a>
eEF2K	Elongation factor-2 protein-serine kinase	Pan-specific	RpAb	NK051	T	T	T	82	103	<a href="#">NP_037434</a>	<a href="#">Q00418</a>
EGFR	Epidermal growth factor receptor-tyrosine kinase	Pan-specific	RpAb	NK052-2	T	T	T	134	171	<a href="#">NP_005219</a>	<a href="#">P00533</a>

Target Protein Abbreviation	Target Protein Full Name	Ab Target	Ab Type	I.D. Code	Ab Reactivity			Actual Mol. Mass (kDa)	Obsv. Mol. Mass (kDa)	Link - Protein Refseq	Link - Swiss-Prot
		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1068	RpAb	PK009	T	T	T	134	175	<a href="#">NP_005219</a>	<a href="#">P00533</a>
EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1148	RpAb	PK010	T	T	T	134	174	<a href="#">NP_005219</a>	<a href="#">P00533</a>
EGFR	Epidermal growth factor receptor-tyrosine kinase	Y1173	RmAb	PK011	T	T	T	134	174	<a href="#">NP_005219</a>	<a href="#">P00533</a>
eIF2a	Eukaryotic translation initiation factor 2 alpha	Pan-specific	MmAb	NN038	T	T	T	36	33	<a href="#">NP_004085</a>	<a href="#">P05198</a>
eIF2a	Eukaryotic translation initiation factor 2 alpha	S51	RpAb	PN028-1	T	T	T	36	33	<a href="#">NP_004085</a>	<a href="#">P05198</a>
eIF4E	Eukaryotic translation initiation factor 4 (mRNA cap binding protein)	Pan-specific	MmAb	NN039	T			25		<a href="#">NP_001959</a>	<a href="#">P06730</a>
eIF4E	Eukaryotic translation initiation factor 4 (mRNA cap binding protein)	S209	RpAb	PN030-2	T	T	T	25	24	<a href="#">NP_001959</a>	<a href="#">P06730</a>
ErbB2	ErbB2 (Neu) receptor-tyrosine kinase	Pan-specific	MmAb	NK054-1	T	T	T	138	182	<a href="#">NP_004439</a>	<a href="#">P04626</a>
Erk1/2	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	T202+Y204	RpAb	PK014-PK015-1	T	T	T	43	41	<a href="#">AAA36142.1</a>	<a href="#">P27361</a>
Erk1-CT	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)	Pan-specific	RpAb	NK055-NK056	T	T	T	43	42	<a href="#">AAA36142.1</a>	<a href="#">P27361</a>
Erk2	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	Pan-specific	RpAb	NK056	T	T	T	41	39	<a href="#">NP_002736</a>	<a href="#">P28482</a>
Erk6	Mitogen-activated protein-serine kinase p38 gamma (MAPK12)	Pan-specific	RpAb	NK059-1	T	T	T	42	46	<a href="#">NP_002960</a>	<a href="#">P53778</a>
ERP57	ER protein 57 kDa (protein disulfide isomerase-associated 3; 58 kDa glucose regulated protein)	Pan-specific	MmAb	NN040	T	F	F	57	49	<a href="#">NP_005304</a>	<a href="#">P30101</a>
ERP72	ER protein 72 kDa (protein disulfide isomerase-associated 4)	Pan-specific	RpAb	NN041	T	T	T	73	76	<a href="#">NP_004902</a>	<a href="#">P13667</a>
FAK	Focal adhesion protein-tyrosine kinase	Pan-specific	RpAb	NK060	T	T	T	119	116	<a href="#">NP_005598</a>	<a href="#">Q05397</a>
FAK	Focal adhesion protein-tyrosine kinase	S843	RpAb	PK022-2	T	T	T	119	113	<a href="#">NP_005598</a>	<a href="#">Q05397</a>
FAS	Tumor necrosis factor superfamily member 6 (Apo1, CD95)	Pan-specific	RpAb	NN042	T	T	T	38	45	<a href="#">NP_003789</a>	<a href="#">P25445</a>
FasL	Tumor necrosis factor ligand, member 6	Pan-specific	MmAb	NN043	T	T	T	31	31	<a href="#">NP_000630</a>	<a href="#">P48023</a>
Fos	Fos-c FBJ murine osteosarcoma oncoprotein-related transcription factor	T232	RpAb	PN033	T	T	T	41	57	<a href="#">NP_005243</a>	<a href="#">P01100</a>
Fyn	Fyn proto-oncogene-encoded protein-tyrosine kinase	Pan-specific	MmAb	NK065	T	T	T	61	48	<a href="#">NP_002028</a>	<a href="#">P06241</a>
GAP-43	Growth associated protein 43 (Neuromodulin)	S41	RpAb	PN098	T	T	T	43	43	<a href="#">NP_002036</a>	<a href="#">P17677</a>
GRK2	G protein-coupled receptor-serine kinase 2	Pan-specific	RpAb	NK067	T	T	T	80	74	<a href="#">NP_001610</a>	<a href="#">P25098</a>
GroEL	GroEL homolog (may correspond to Hsp60)	Pan-specific	RpAb	NN046	T	T	T	61	50	<a href="#">NP_002147</a>	<a href="#">P10809</a>
Grp75	Glucose regulated protein 75	Pan-specific	MmAb	NN047	T	T	T	74	68	<a href="#">NP_004125</a>	<a href="#">P38646</a>
Grp78	Glucose regulated protein 78	Pan-specific	RpAb	NN048	T	T	T	72	73	<a href="#">NP_005338</a>	<a href="#">P11021</a>
Grp94	Glucose regulated protein 94 (endoplasmic)	Pan-specific	RpAb	NN049	T	T	T	92	95	<a href="#">NP_003290</a>	<a href="#">P14625</a>
GSK3a/b	Glycogen synthase-serine kinase 3 alpha	Pan-specific	MmAb	NK069-NK070	T	T	T	51	45	<a href="#">NP_063937</a>	<a href="#">P49840</a>
GSK3a/b	Glycogen synthase-serine kinase 3 alpha	S21	RpAb	PK026-PK027-1	T	T	T	51	45	<a href="#">NP_063937</a>	<a href="#">P49840</a>
GSK3a/b	Glycogen synthase-serine kinase 3 alpha	Y279/ Y216	RpAb	PK028-PK029-1	T	T	T	51	45	<a href="#">NP_063937</a>	<a href="#">P49840</a>
hHR23B	UV excision repair protein RAD23 homolog B	Pan-specific	MmAb	NN050	T	T	F	43	60	<a href="#">NP_002865</a>	<a href="#">P54727</a>
Hip	Hsp70/Hsc70 interacting protein (ST13)	Pan-specific	RpAb	NN051	T	T	T	41	46	<a href="#">NP_003923</a>	<a href="#">P50502</a>
Hsc70	Heat shock 70 kDa protein 8	Pan-specific	MmAb	NN054	T	T	T	71	64	<a href="#">NP_006588</a>	<a href="#">P11142</a>
HSF4	Heat shock transcription factor 4	Pan-specific	MmAb	NN055	T	T	F	53	44	<a href="#">NP_001529</a>	<a href="#">Q9ULV5</a>
Hsp25	Heat shock 27 kDa protein beta 1 (HspB1)	Pan-specific	RpAb	NN056	T	T	T	23	22	<a href="#">NP_001531</a>	<a href="#">P04792</a>
Hsp25	Heat shock 27 kDa protein beta 1 (HspB1)	S86	RpAb	PN042-3	T	T	T	23	23	<a href="#">NP_038588</a>	<a href="#">P14602</a>
Hsp27	Heat shock 27 kDa protein beta 1 (HspB1)	S15	RpAb	PN040-1	T	F	T	23	23	<a href="#">NP_001531</a>	<a href="#">P04792</a>
Hsp27	Heat shock 27 kDa protein beta 1 (HspB1)	S78	RpAb	PN041	T	F	T	23	23	<a href="#">NP_001531</a>	<a href="#">P04792</a>



Target Protein Abbreviation	Target Protein Full Name	Ab Target	Ab Type	I.D. Code	Ab Reactivity			Actual Mol. Mass (kDa)	Obsv. Mol. Mass (kDa)	Link - Protein Refseq	Link - Swiss-Prot
		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
Hsp27	Heat shock 27 kDa protein beta 1 (HspB1)	S82	RpAb	PN042-2	T	T	T	23	22	<a href="#">NP_001531</a>	<a href="#">P04792</a>
Hsp40	DnaJ homolog, subfamily B member 1	Pan-specific	MmAb	NN057	T	T	T	38	34	<a href="#">NP_006136</a>	<a href="#">P25685</a>
Hsp47	Heat shock 47 kDa protein (collagen-binding protein 1, collin 1)	Pan-specific	MmAb	NN058	T	T	T	46	41	<a href="#">NP_001226</a>	<a href="#">P29043</a>
Hsp60 (Myobact-Hsp65)	Heat shock 60 kDa protein 1 (chaperonin, CPN60)	Pan-specific	MmAb	NN059-2	T	T	T	61	50	<a href="#">NP_002147</a>	<a href="#">P10809</a>
Hsp70	Heat shock 70 kDa protein 1	Pan-specific	MmAb	NN060	T	T	T	70	61	<a href="#">NP_005336</a>	<a href="#">P08107</a>
Hsp90	Heat shock 90 kDa protein alpha	Pan-specific	MmAb	NN061	T	T	T	85	84	<a href="#">NP_005339</a>	<a href="#">P07900</a>
HspBP1	Hsp70 binding protein 1	Pan-specific	MmAb	NN063	F	F	T	39		<a href="#">NP_036399</a>	<a href="#">Q95351</a>
Huntingtin	Huntington's disease protein	S421	RpAb	PN103	T	T	T	350	350	<a href="#">NP_002102</a>	<a href="#">P42858</a>
IkBa	Inhibitor of NF-kappa-B alpha (MAD3)	Pan-specific	RpAb	NN064	T	T	T	36	36	<a href="#">NP_065390</a>	<a href="#">P25963</a>
IkBb	Inhibitor of NF-kappa-B beta (thyroid receptor interacting protein 9)	Pan-specific	RpAb	NN065	T	T	T	38	45	<a href="#">NP_002494</a>	<a href="#">Q15653</a>
IKKa	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	Pan-specific	RpAb	NK075-3	T	T	T	85	81	<a href="#">NP_001269</a>	<a href="#">Q15111</a>
IKKb	Inhibitor of NF-kappa-B protein-serine kinase beta	Pan-specific	RpAb	NK076-1	T	T	T	87	87	<a href="#">NP_001547</a>	<a href="#">Q14920</a>
IKKg/NEMO	I-kappa-B kinase gamma/NF-kappa-B essential modulator	Pan-specific	MmAb	NK077	T			48		<a href="#">NP_003630</a>	<a href="#">Q9Y6K9</a>
Insulin Receptor b	Insulin receptor beta chain	Pan-specific	MmAb	NK079	T			95		<a href="#">NP_000199</a>	<a href="#">P06213</a>
IRAK4	Interleukin 1 receptor-associated kinase 4	Pan-specific	RpAb	NK083-1	T	T	T	52	50	<a href="#">NP_057207</a>	<a href="#">Q9NWZ3</a>
JAK1	Janus protein-tyrosine kinase 1	Pan-specific	RpAb	NK084-2	T	T	T	132	116	<a href="#">NP_002218</a>	<a href="#">P23458</a>
JAK2	Janus protein-tyrosine kinase 2	Pan-specific	RpAb	NK085	T	T	T	131	110	<a href="#">NP_004963</a>	<a href="#">Q60674</a>
JNK	Jun N-terminus protein-serine kinases (stress-activated protein kinase (SAPK)) 1/2/3	Pan-specific	RpAb	NK088	T	T	T	44+48+53	39+44	<a href="#">NP_002741</a>	<a href="#">P45983</a>
JNK	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK))	T183/Y185	RpAb	PK035-1	T	T	T	44 + 48 + 53	48+44+39+37	<a href="#">NP_002741</a>	<a href="#">P45983</a>
Jun	Jun proto-oncogene-encoded AP1 transcription factor	Pan-specific	MmAb	NN066	T			39		<a href="#">NP_002219</a>	<a href="#">P05412</a>
Jun	Jun proto-oncogene-encoded AP1 transcription factor	S63	RpAb	PN047	T	T	T	36	40+39+38	<a href="#">NP_002219</a>	<a href="#">P05412</a>
Jun	Jun proto-oncogene-encoded AP1 transcription factor	S73	RpAb	PN048-3	T	T	T	36	43+40+38	<a href="#">NP_002219</a>	<a href="#">P05412</a>
KAP	Cyclin-dependent kinase associated phosphatase (CDK inhibitor 3, CIP2)	Pan-specific	RpAb	NP004	T	T	T	24	33	<a href="#">NP_005183</a>	<a href="#">Q16667</a>
LAR	LCA antigen-related (LAR) receptor tyrosine phosphatase	Pan-specific	MmAb	NP005	T	T	T	212	147	<a href="#">NP_002831</a>	<a href="#">P10586</a>
Lck	Lymphocyte-specific protein-tyrosine kinase	Pan-specific	MmAb	NK092-2	T	T	T	58	45	<a href="#">NP_005347</a>	<a href="#">P06239</a>
Lck	Lymphocyte-specific protein-tyrosine kinase	S157	RpAb	PK039	T	T	T	58	46 + 54	<a href="#">NP_005347</a>	<a href="#">P06239</a>
Lck	Lymphocyte-specific protein-tyrosine kinase	Y191	RpAb	PK040	T	T	T	58	46	<a href="#">NP_005347</a>	<a href="#">P06239</a>
Lck	Lymphocyte-specific protein-tyrosine kinase	Y504	RpAb	PK041	T	T	F	58	46	<a href="#">NP_005347</a>	<a href="#">P06239</a>
LIMK1	LIM domain kinase 1	Pan-specific	MmAb	NK093	T			73		<a href="#">NP_002305</a>	<a href="#">P53667</a>
LIMK1/2	LIM domain kinase 1	Y508/T505	RpAb	PK042-PK118	T	T	T	73 / 72		<a href="#">NP_002305</a>	<a href="#">P53667</a>
Lyn	Yes-related protein-tyrosine kinase	Pan-specific	MmAb	NK095	T	T	T	58	47	<a href="#">NP_002341</a>	<a href="#">P07948</a>
Lyn	Yes-related protein-tyrosine kinase	Y507	RpAb	PK043	T	T	T	58	46	<a href="#">NP_002341</a>	<a href="#">P07948</a>
MEK1	MAPK/ERK protein-serine kinase 1 (MKK1)	Pan-specific	MmAb	NK099	T	T	T	43	40	<a href="#">NP_002746</a>	<a href="#">Q02750</a>
MEK1	MAPK/ERK protein-serine kinase 1 (MKK1)	T291	RpAb	PK046-1	T	T	T	43	42	<a href="#">NP_002746</a>	<a href="#">Q02750</a>
MEK1	MAPK/ERK protein-serine kinase 1 (MKK1)	S297	RpAb	PK047-2	T	T	T	43	42	<a href="#">NP_002746</a>	<a href="#">Q02750</a>
MEK1	MAPK/ERK protein-serine kinase 1 (MKK1)	T385	RpAb	PK048-1	T	T	T	43	42	<a href="#">NP_002746</a>	<a href="#">Q02750</a>
MEK2	MAPK/ERK protein-serine kinase 2 (MKK2)	Pan-specific	MmAb	NK100-1	T	T	T	44	41	<a href="#">AAH00471.1</a>	<a href="#">P36507</a>

Target Protein Abbreviation	Target Protein Full Name	Ab Target	Ab Type	I.D. Code	Ab Reactivity			Actual Mol. Mass (kDa)	Obsv. Mol. Mass (kDa)	Link - Protein Refseq	Link - Swiss-Prot
		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
MEK2 human	MAPK/ERK protein-serine kinase 2 (MKK2) (human)	T394	RpAb	PK049	T	F	F	44	42	<a href="#">AAH00471.1</a>	<a href="#">P36507</a>
MEK3/6	MAPK/ERK protein-serine kinase 3/6 (MKK3/6)	S189/S207	RpAb	PK051	T	T	T	36	35	<a href="#">NP_002747</a>	<a href="#">P46734</a>
MEK3b	MAPK/ERK protein-serine kinase 3 beta isoform (MKK3 beta)	Pan-specific	MmAb	NK102	T	T	T	39		<a href="#">NP_659731</a>	<a href="#">P46734</a>
MEK4	MAPK/ERK protein-serine kinase 4 (MKK4)	Pan-specific	RpAb	NK103	T	T	T	44	38	<a href="#">NP_003001</a>	<a href="#">P45985</a>
MEK6	MAPK/ERK protein-serine kinase 6 (MKK6)	Pan-specific	RpAb	NK105-1	T	T	T	37+ 31	32	<a href="#">NP_002749</a>	<a href="#">P52564</a>
MEK7	MAPK/ERK protein-serine kinase 7 (MKK7)	Pan-specific	GpAb	NK106	T	T	T	47	40	<a href="#">NP_005034</a>	<a href="#">Q14733</a>
MKP1	MAP kinase phosphatase 1 (CL100, VH1)	Pan-specific	RpAb	NP006	T	T	T	39	38	<a href="#">NP_004408</a>	<a href="#">P28562</a>
MKP2	MAP kinase phosphatase 2 (VH2)	Pan-specific	MmAb	NP007	T	T	T	43	40	<a href="#">NP_001385</a>	<a href="#">Q13115</a>
Mn SOD	Manganese superoxide dismutase (SOD2)	Pan-specific	RpAb	NN068	T	T	T	25	19	<a href="#">NP_000627</a>	<a href="#">P04179</a>
Mos	Moloney sarcoma oncogene-encoded protein-serine kinase	Pan-specific	RpAb	NK112	T	T	T	38	33	<a href="#">NP_005363</a>	<a href="#">P00540</a>
MSH2	DNA mismatch repair protein mutS homolog2, colon cancer, nonpolyposis type 1	Pan-specific	MmAb	NN069	T	T	T	105	100	<a href="#">NP_000242</a>	<a href="#">P43246</a>
Msk1	Mitogen & stress-activated protein-serine kinase 1	S376	RpAb	PK058	T	T	T	90	71+78	<a href="#">NP_004746</a>	<a href="#">Q75582</a>
MST1	Mammalian STE20-like protein-serine kinase 1 (KRS2)	Pan-specific	MmAb	NK113-2	T	T	T	56	58	<a href="#">NP_006273</a>	<a href="#">Q13043</a>
MST2	Mammalian STE20-like protein-serine kinase 2 (KRS1)	Pan-specific	RpAb	NK114	T	T	T	56	52	<a href="#">NP_006272</a>	<a href="#">Q13188</a>
MST3	Mammalian STE20-like protein-serine kinase 3	Pan-specific	MmAb	NK115	T	T	T	49		<a href="#">NP_003567</a>	<a href="#">Q9Y6E0</a>
NFkappaB p50	NF-kappa-B p50 nuclear transcription factor	Pan-specific	RpAb	NN070	T	T	T	~48	121.5+46	<a href="#">NP_003989</a>	<a href="#">P19838</a>
NFkappaB p65	NF-kappa-B p65 nuclear transcription factor	Pan-specific	RpAb	NN071	T	T	T	~65	64	<a href="#">NP_003989</a>	<a href="#">Q04206</a>
NFkB p65 (Rel A)	NF-kappa-B p65 nuclear transcription factor	S276	RpAb	PN053	T	T	T	64	64	<a href="#">NP_003989</a>	<a href="#">Q04206</a>
Nip1	Bcl2/adenovirus E1B 19kD-interacting protein 1	Pan-specific	MmAb	NN072	T	T	T	31	24	<a href="#">NP_001196</a>	<a href="#">Q12981</a>
p107	Retinoblastoma (Rb) protein-related p107 (PRB1)	Pan-specific	RpAb	NN083	T	T	T	128	107	<a href="#">P28749</a>	<a href="#">P28749</a>
p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	T180+Y182	RpAb	PK060-1	T	T	T	41	40+38+36	<a href="#">NP_001306</a>	<a href="#">Q16539</a>
p38a MAPK	Mitogen-activated protein-serine kinase p38 alpha	Pan-specific	RpAb	NK120-3	T	T	T	41	38	<a href="#">NP_001306</a>	<a href="#">Q16539</a>
p53	Tumor suppressor protein p53 (antigenNY-CO-13)	Pan-specific	MmAb	NN082	T	F	T	44	49	<a href="#">NP_000537</a>	<a href="#">P04637</a>
p53	Tumor suppressor protein p53 (antigenNY-CO-13)	S392	RpAb	PN057-2	T	T	F	44	49	<a href="#">NP_000537</a>	<a href="#">P04637</a>
p73	Tumor suppressor protein p73	Pan-specific	MmAb	p73	T	T	T	73		<a href="#">NP_005418</a>	<a href="#">Q15350</a>
PAC1	Dual specificity MAP kinase protein phosphatase	Pan-specific	GpAb	NP008	F	T	F	34	40	<a href="#">NP_004409</a>	<a href="#">Q05923</a>
PAK1	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	Pan-specific	RpAb	NK122	T	T	T	61	64	<a href="#">NP_002567</a>	<a href="#">Q13153</a>
PAK1/2/3	p21-activated kinase 1/2/3 (serine/threonine-protein kinase PAK 1/2/3)	S144/S141/S154	RpAb	PK061	T	T	T	61/ 58 / 61	58 / 53	<a href="#">NP_002567</a>	<a href="#">Q13153</a>
PAK3	p21-activated kinase 3 (beta) (serine/threonine-protein kinase PAK 3)	Pan-specific	GpAb	NK123	T	T	T	61	60	<a href="#">NP_002569</a>	<a href="#">Q75914</a>
PARP1	Poly [ADP-ribose] polymerase 1 (ADPRT)	Pan-specific	RpAb	NN085-1	T	T	T	113	21+88+111.5	<a href="#">NP_001609</a>	<a href="#">P09874</a>
Pax2	Paired box protein 2	S394	RpAb	PN058	T	T	T	45	37	<a href="#">Q02962</a>	<a href="#">Q02962</a>
Paxillin	Paxillin 1	Pan-specific	MmAb	NN086	T			68		<a href="#">NP_002850</a>	<a href="#">P49023</a>
Paxillin 1	Paxillin 1	Y31	RpAb	PN059	T	T	T	65	70	<a href="#">NP_002850</a>	<a href="#">P49023</a>
Paxillin 1	Paxillin 1	Y118	RpAb	PN060-1	T	T	T	65	69	<a href="#">NP_002850</a>	<a href="#">P49023</a>
PCNA	Proliferating cell nuclear antigen	Pan-specific	MmAb	NN087	T	T	T	29	33	<a href="#">NP_002583</a>	<a href="#">P12004</a>
PDK1	3-phosphoinositide-dependent protein-serine kinase 1	Pan-specific	GpAb	NK126-2	T	T	T	63	59	<a href="#">NP_002604</a>	<a href="#">Q15530</a>
PDK1	3-Phosphoinositide-dependent protein-serine kinase 1	S244	RpAb	PK066	T	T	T	63	56/59	<a href="#">NP_002604</a>	<a href="#">Q15530</a>
PED15 (PEA15)	Phosphoprotein-enriched in diabetes/astrocytes 15	S116	RpAb	PN061	T	T	T	15	12	<a href="#">NP_003759</a>	<a href="#">Q15121</a>



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		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
PERP	p53-induced protein PIGPC1	Pan-specific	RpAb	NN088	T	T	T	21	30	NP_071404	Q9H230
PI3K p110 delta	Phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta isoform	Pan-specific	RpAb	NK191	T	T	T	120	120	NP_005017	Q00329
PI3-Kinase	Phosphatidylinositol 3-kinase regulatory subunit alpha	Pan-specific	MmAb	NN089	T			85		NP_852664	P27986
PKA Ca/b	cAMP-dependent protein-serine kinase catalytic subunit aloha/beta	T197	RpAb	PK067	T	T	T	40	39	NP_002721	P17612
PKA Cb	cAMP-dependent protein-serine kinase catalytic subunit beta	S338	RpAb	PK068	T	T	T	40	39	NP_002722	P22694
PKA R2b	cAMP-dependent protein-serine kinase regulatory type 2 subunit beta	S114	RpAb	PK070	T	T	T	46	38	NP_004148	P31323
PKBa (Akt1)	Protein-serine kinase B alpha	Pan-specific	MmAb	NK129	T	T	T	56	58	NP_005154	P31749
PKBa (Akt1)	Protein-serine kinase B alpha	T308	RpAb	PK071-2	T	T	T	56	56/60	NP_005154	P31749
PKBa (Akt1)	Protein-serine kinase B alpha	S473	RpAb	PK072-3	T	T	T	56	56/59	NP_005154	P31749
PKCa	Protein-serine kinase C alpha	Pan-specific	MmAb	NK132	T	T	T	77	79	NP_002728	P17252
PKCa	Protein-serine kinase C alpha	S657	RpAb	PK073	T	T	T	77	79	NP_002728	P17252
PKCa/b2	Protein-serine kinase C aloha/beta 2	T638/T641	RpAb	PK074	T	T	T	77 / 77	78/80	NP_002728	P17252
PKCb1	Protein-serine kinase C beta 1	Pan-specific	RpAb	NK133	T	T	T	77	79	NP_002729	P05771
PKCb1/2	Protein-serine kinase C beta 1/2	T500	RpAb	PK075	T	T	T	77 / 77	79	NP_997700	P05771
PKCb2	Protein-serine kinase C beta 2	T641	RpAb	PK076-1	T	T	T	77	79	NP_002729	P05771
PKCd	Protein-serine kinase C delta	Pan-specific	RpAb	NK135	T	T	T	77	72	NP_006245	Q05655
PKCd	Protein-serine kinase C delta	Y313	RpAb	PK077-1	T	T	T	77	74	NP_006245	Q05655
PKCd	Protein-serine kinase C delta	T507	RpAb	PK078	T	T	T	77	70+74	NP_006245	Q05655
PKCd	Protein-serine kinase C delta	S645	RpAb	PK079	T	T	T	77	74	NP_006245	Q05655
PKCd	Protein-serine kinase C delta	S664	RpAb	PK080	T	T	T	77	74	NP_006245	Q05655
PKCe	Protein-serine kinase C epsilon	Pan-specific	RpAb	NK136	T	T	T	84	93	NP_005391	Q02156
PKCe	Protein-serine kinase C epsilon	S729	RpAb	PK081-2	T	T	T	84	91	NP_005391	Q02156
PKCg	Protein-serine kinase C gamma	Pan-specific	RpAb	NK137	T	T	T	78	79	NP_002730	P05129
PKCg	Protein-serine kinase C gamma	T674	RpAb	PK084	T	T	T	78	78/81	NP_002730.1	P05129
PKCh	Protein-serine kinase C eta	S674	RpAb	PK086	T	T	T	78	79	NP_006246	P24723
PKCi	Protein-serine kinase C lambda/iota	Pan-specific	RpAb	NK138	T	T	T	67	60	NP_002731	P41743
PKCi	Protein-serine kinase C lambda/iota	T555	RpAb	PK087	T	T	T	67	79	NP_002731	P41743
PKCm (PKD)	Protein-serine kinase C mu (Protein kinase D)	S738+S742	RpAb	PK092	T	T	T	102	122	NP_002733	Q15139
PKCm (PKD)	Protein-serine kinase C mu (Protein kinase D)	S910	RpAb	PK093-1	T	T	T	102	122	NP_002733	Q15139
PKCm (PKD)	Protein-serine kinase C mu (Protein kinase D)	S910	RpAb	PK093-2	T	T	T	102	122	NP_002733	Q15139
PKCt	Protein-serine kinase C theta	Pan-specific	MmAb	NK140	T	T	T	82	75	NP_006248	Q04759
PKCt	Protein-serine kinase C theta	T538	RpAb	PK088	T	T	T	82	74	NP_006248	Q04759
PKCt	Protein-serine kinase C theta	S676	RpAb	PK089	T	T	T	82	74	NP_006248	Q04759
PKCt	Protein-serine kinase C theta	S695	RpAb	PK090	T	T	T	82	74	NP_006248	Q04759
PKCz	Protein-serine kinase C zeta	Pan-specific	RpAb	NK141	T	T	T	68	79	NP_002735	Q05513
PKCz/l	Protein-serine kinase C zeta/lambda	T410/T403	RpAb	PK091	T	T	T	68 / 67	79	NP_002735	Q05513
PKD (PKCm)	Protein-serine kinase C mu (Protein kinase D)	Pan-specific	RpAb	NK142	T	T	T	102	113	NP_002733	Q15139
PKR1	Double stranded RNA dependent protein-serine kinase	Pan-specific	MmAb	NK144-1	T	T	T	62	76+70	NP_002750	P19525
PKR1	Double-stranded RNA-dependent protein-serine kinase	T451	RpAb	PK094-1	T	T	T	62	76+69	NP_002750	P19525

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		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
Plk1	Polo-like protein-serine kinase 1	Pan-specific	MmAb	NK145	T	T	T	68	51	<a href="#">NP_005021</a>	<a href="#">P53350</a>
Plk1	Polo-like protein-serine kinase 1	T210	RpAb	PK117	T	T	T	68	68	<a href="#">NP_005021</a>	<a href="#">P53350</a>
Plk2 (SNK)	Polo-like protein kinase 2 (serum -inducible kinase (SNK))	Pan-specific	RpAb	NK146	T	T	T	78	69	<a href="#">NP_006613</a>	<a href="#">Q9NYY3</a>
Plk3 (CNK)	Polo-like protein kinase 3 (cytokine- inducible kinase (CNK))	Pan-specific	RpAb	NK147	T	T	T	72	69	<a href="#">NP_004064</a>	<a href="#">Q9H4B4</a>
PP1/Ca	Protein-serine phosphatase 1 - catalytic subunit - alpha isoform	Pan-specific	RpAb	NP009	T	T	T	38	34	<a href="#">NP_002699</a>	<a href="#">P62136</a>
PP1/Ca	Protein-serine phosphatase 1 - catalytic subunit - alpha isoform	T320	RpAb	PP001	T	T	T	38	35	<a href="#">NP_002699</a>	<a href="#">P62136</a>
PP1/Cb	Protein-serine phosphatase 1 - catalytic subunit - beta isoform	Pan-specific	RpAb	NP010	T	T	T	37	34	<a href="#">NP_002700</a>	<a href="#">P62140</a>
PP1/Cg	Protein-serine phosphatase 1 - catalytic subunit - gamma isoform	Pan-specific	RpAb	NP011	T	T	T	37	33	<a href="#">NP_002701</a>	<a href="#">P36873</a>
PP2A/Aa/b	Protein-serine phosphatase 2A - A regulatory subunit - alpha and beta isoforms	Pan-specific	RpAb	NP012	T	T	T	65	50	<a href="#">NP_002707</a>	<a href="#">P30153</a>
PP2A/Ca	Protein-serine phosphatase 2A - catalytic subunit alpha isoform	Pan-specific	MmAb	NP013-NP014	T	T	T	36	33	<a href="#">NP_002706</a>	<a href="#">P67775</a>
PP2A/Ca	Protein-serine phosphatase 2A - catalytic subunit beta isoform	Pan-specific		NP013-NP014	T	T	T	36	31	<a href="#">NP_004147</a>	<a href="#">P62714</a>
PP2B/Aa	Protein-serine phosphatase 2B - catalytic subunit - alpha isoform	Pan-specific	RpAb	NP015	T	T	T	59	55	<a href="#">NP_000935</a>	<a href="#">Q08209</a>
PP2Cab	Protein-serine phosphatase 2C - catalytic subunit - alpha isoform	Pan-specific	RpAb	NP016-NP031	T	T	T	42	44	<a href="#">NP_066283</a>	<a href="#">P35813</a>
PP2Cd	Protein-serine phosphatase 2C - catalytic subunit - delta isoform	Pan-specific	MmAb	NP018	T	T	T	67	41.5+45.5	<a href="#">NP_110395</a>	<a href="#">Q15297</a>
PP4/A'2	Protein-serine phosphatase 4 regulatory subunit (PPX/A'2)	Pan-specific	RmAb	NP019	T	T	T	107	116	<a href="#">NP_005125</a>	<a href="#">Q8TF05</a>
PP4C	Protein-serine phosphatase X - catalytic subunit (PPX/C)	Pan-specific	RpAb	NP020	T	T	T	35	33	<a href="#">NP_002711</a>	<a href="#">P60510</a>
PP5C	Protein-serine phosphatase 5 - catalytic subunit (PPT)	Pan-specific	MmAb	NP021	T	T	T	57	50	<a href="#">NP_006238</a>	<a href="#">P53041</a>
PP6C	Protein-serine phosphatase 6 - catalytic subunit (PPVC)	Pan-specific	RpAb	NP022	T	T	T	35	28+30.5	<a href="#">NP_002712</a>	<a href="#">Q00743</a>
PRAS40	Proline-rich Akt substrate 40 kDa (Akt1S1)	T246	RpAb	PN062	T	T	T	27	44	<a href="#">NP_115751</a>	<a href="#">Q96B36</a>
PRK1/2	Protein kinase C-related protein-serine kinase 1	T774	RpAb	PK095-PK096	T	T	T	104	126	<a href="#">NP_002732</a>	<a href="#">Q16512</a>
PTEN	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and protein phosphatase and tensin homolog deleted on chromosome 10	Pan-specific	MmAb	NP023	T	T	T	47	54	<a href="#">NP_000305</a>	<a href="#">P60484</a>
PTP1B	Protein-tyrosine phosphatase 1B	Pan-specific	MmAb	NP024	T	T	T	50	44	<a href="#">NP_002818</a>	<a href="#">P18031</a>
PTP1C	Protein-tyrosine phosphatase 1C (SHP1, SHPTP1)	Pan-specific	MmAb	NP025	T	T	T	68	56	<a href="#">NP_002822</a>	<a href="#">P29350</a>
PTP1D	Protein-tyrosine phosphatase 1D (SHP2, SHPTP2, Syp, PTP2C)	Pan-specific	MmAb	NP026	T	T	T	68	67	<a href="#">NP_002825</a>	<a href="#">Q06124</a>
PTP-PEST	Protein-tyrosine phosphatase with PEST sequences (PTPG1, PTPN12)	Pan-specific	RpAb	NP027	T	T	T	88	91	<a href="#">NP_002826</a>	<a href="#">Q05209</a>
Pyk2	Protein-tyrosine kinase 2	Y579	RpAb	PK097-1	T	T	F	116	122	<a href="#">NP_775268</a>	<a href="#">Q14289</a>
Rac1	Ras-related C3 botulinum toxin substrate 1	Pan-specific	MmAb	NN092	T			21		<a href="#">NP_001782</a>	<a href="#">P60953</a>
Rac1/cdc42	Ras-related C3 botulinum toxin substrate 1	S71	RpAb	PN063-1	T	T	T	21	21	<a href="#">NP_008839</a>	<a href="#">P60953</a>
Rad17	Rad17 homolog	S645	RpAb	PN064	T	T		77	58+64+68	<a href="#">NP_579921</a>	<a href="#">Q75943</a>
Raf1	Raf1 proto-oncogene-encoded protein-serine kinase	Pan-specific	RpAb	NK155	T	T	T	73	68+75.5	<a href="#">NP_002871</a>	<a href="#">P04049</a>
Raf1	Raf1 proto-oncogene-encoded protein-serine kinase	S259	RpAb	PK098	T	T	T	84	63+68	<a href="#">NP_002871</a>	<a href="#">P04049</a>

Target Protein Abbreviation	Target Protein Full Name	Ab Target	Ab Type	I.D. Code	Ab Reactivity			Actual Mol. Mass (kDa)	Obsv. Mol. Mass (kDa)	Link - Protein Refseq	Link - Swiss-Prot
		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
RafB	RafB proto-oncogene-encoded protein-serine kinase	Pan-specific	RpAb	NK156	T	T	T	84	88	<a href="#">NP_004324</a>	<a href="#">P15056</a>
Rb	Retinoblastoma-associated protein 1	Pan-specific	MmAb	NN093	T	T	T	106	95	<a href="#">NP_000312</a>	<a href="#">P06400</a>
Rb	Retinoblastoma-associated protein 1	T356	RpAb	PN065	T	T	T	106	127	<a href="#">NP_000312</a>	<a href="#">P06400</a>
Rb	Retinoblastoma-associated protein 1	S612	RpAb	PN066	T	T	T	106	127	<a href="#">NP_000312</a>	<a href="#">P06400</a>
Rb	Retinoblastoma-associated protein 1	S780	RpAb	PN067	T	T	T	106	127	<a href="#">NP_000312</a>	<a href="#">P06400</a>
Rb	Retinoblastoma-associated protein 1	S807	RpAb	PN068	T	T	T	106	127	<a href="#">NP_000312</a>	<a href="#">P06400</a>
Rb	Retinoblastoma-associated protein 1	S807+S811	RpAb	PN069	T	T	T	106	127	<a href="#">NP_000312</a>	<a href="#">P06400</a>
Rb	Retinoblastoma-associated protein 1	T821	RpAb	PN070	T	T	T	106	127	<a href="#">NP_000312</a>	<a href="#">P06400</a>
Rb	Retinoblastoma-associated protein 1	T826	RpAb	PN071	T	T	T	106	127	<a href="#">NP_000312</a>	<a href="#">P06400</a>
RIP2/RICK	Receptor-interacting serine/threonine-protein kinase 2 (RIPK2)	Pan-specific	MmAb	NK157	T			61		<a href="#">NP_003812</a>	<a href="#">Q43353</a>
RIPK	Receptor-interacting protein-serine kinase 1	Pan-specific	MmAb	NK158	T	T	T	76	90	<a href="#">NP_003795</a>	<a href="#">Q13546</a>
ROCK-1/ROKb	RhoA protein-serine kinase beta	Pan-specific	MmAb	NK160	T	T	T	158		<a href="#">NP_005397</a>	<a href="#">Q13464</a>
RONa	Macrophage-stimulating protein receptor alpha chain	Pan-specific	MmAb	NK161	T			40		<a href="#">NP_002438</a>	<a href="#">Q04912</a>
RSK1	Ribosomal S6 protein-serine kinase 1	Pan-specific	RpAb	NK164	T	T	T	83	79	<a href="#">NP_002944</a>	<a href="#">Q15418</a>
RSK1/2	Ribosomal S6 protein-serine kinase 1/2	S221/S227	RpAb	PK099	T	T	T	83 / 84	89+78+70	<a href="#">NP_002944</a>	<a href="#">Q15418</a>
RSK1/3 (p90RSK)	Ribosomal S6 protein-serine kinase 1/3	T359+S363/T356+S360	RpAb	PK103	T	T	T	83 / 84	89+78+70	<a href="#">NP_002944</a>	<a href="#">Q15418</a>
RSK2	Ribosomal S6 protein-serine kinase 2	Pan-specific	RpAb	NK165	T	T	T	84	74	<a href="#">NP_004577</a>	<a href="#">P51812</a>
S6	40S ribosomal protein S6	S235	RpAb	PN073	T	T	T	29	38	<a href="#">NP_001001</a>	<a href="#">P62753</a>
S6Ka	p70 ribosomal protein-serine S6 kinase alpha	Pan-specific	MmAb	NK168-NK169	T	T	T	56	69	<a href="#">NP_003152</a>	<a href="#">P23443</a>
S6Ka	p70/p85 ribosomal protein-serine S6 kinase alpha	T229	RpAb	PK104	T	T	T	56+85	69+80	<a href="#">NP_003152</a>	<a href="#">P23443</a>
S6Ka	p70/p85 ribosomal protein-serine S6 kinase alpha	T421+S424	RpAb	PK105	T	T	T	56+85	69+80	<a href="#">NP_003152</a>	<a href="#">P23443</a>
S6Ka	p70/p85 ribosomal protein-serine S6 kinase alpha	T389	RpAb	PK106	T	T	T	56+85	69+80	<a href="#">NP_003152</a>	<a href="#">P23443</a>
Shc1	SH2 domain-containing transforming protein 1	Y349+Y350	RpAb	PN074-1	T	T	T	63	68+49	<a href="#">NP_003020</a>	<a href="#">P29353</a>
SHP2	Protein-tyrosine phosphatase 1D (SHPTP2, Svp, PTP2C)	S576	RpAb	PP004	T	T	T	68	48+70	<a href="#">NP_002825</a>	<a href="#">Q06124</a>
Smac/DIABLO	Second mitochondria-derived activator of caspase	Pan-specific	RpAb	NN095	T	T	T	27	19	<a href="#">NP_620308</a>	<a href="#">Q9NR28</a>
Smad2	SMA- and mothers against decapentaplegic homolog 2	S465+S467	RpAb	PN076	T	T	T	52	53	<a href="#">IP_00100365</a>	<a href="#">Q15796</a>
Smad2/3	SMA- and mothers against decapentaplegic homolog 2/3	Pan-specific	MmAb	NN096	T			58		<a href="#">NP_005892</a>	<a href="#">Q15796</a>
SOCS4	Suppressor of cytokine signalling 4 (SOCS7)	Pan-specific	RpAb	NN097	T	T	T	51	54	<a href="#">NP_543143</a>	<a href="#">Q8WXH5</a>
SOD (Cu/Zn)	Superoxide dismutase 1	Pan-specific	RpAb	NN098	T	T	T	16	16	<a href="#">NP_000445</a>	<a href="#">Q6ND84</a>
SODD	Silencer of death domains (Bcl2 associated athanogene 4 (BAG4))	Pan-specific	RpAb	NN099	T	T	T	50	75	<a href="#">NP_004865</a>	<a href="#">Q95429</a>
Src	Src proto-oncogene-encoded protein-tyrosine kinase	Pan-specific	MmAb	NK172	T	T	T	60	48	<a href="#">NP_005408</a>	<a href="#">P12931</a>
Src	Src proto-oncogene-encoded protein-tyrosine kinase	Y529	RpAb	PK108	T	T	T	60	48+46	<a href="#">NP_005408</a>	<a href="#">P12931</a>
STAT1	Signal transducer and activator of transcription 1 alpha	Pan-specific	RpAb	NN102-NN124	T	T	T	87	88	<a href="#">NP_009330</a>	<a href="#">P42224</a>
STAT1	Signal transducer and activator of transcription 1	S727	RpAb	PN078	T	T	T	87	83	<a href="#">NP_009330</a>	<a href="#">P42224</a>
STAT1	Signal transducer and activator of transcription 1	Y701	RpAb	PN079	T	T	T	87	86	<a href="#">NP_009330</a>	<a href="#">P42224</a>
STAT2	Signal transducer and activator of transcription 2	Pan-specific	RpAb	NN103	T	T	T	98	111	<a href="#">NP_005410</a>	<a href="#">P52630</a>
STAT3	Signal transducer and activator of transcription 3	S727	RpAb	PN081	T	T	T	88	81	<a href="#">NP_003141</a>	<a href="#">P40763</a>
STAT3	Signal transducer and activator of transcription 3	Y705	RmAb	PN082	T	T	T	88	81	<a href="#">NP_003141</a>	<a href="#">P40763</a>

Target Protein Abbreviation	Target Protein Full Name	Ab Target	Ab Type	I.D. Code	Ab Reactivity			Actual Mol. Mass (kDa)	Obsv. Mol. Mass (kDa)	Link - Protein Refseq	Link - Swiss-Prot
		Human	Human		Human	Mouse	Rat	Human	Human	Human	Human
STI1	Stress induced phosphoprotein 1 (Hsc70/Hsp90 organizing protein (Hoo))	Pan-specific	MmAb	NN108	T	T	T	63	59	<a href="#">NP_006810</a>	<a href="#">P31948</a>
Syk	Spleen protein-tyrosine kinase	Pan-specific	MmAb	NK174	T	T	T	72	71	<a href="#">NP_003168</a>	<a href="#">P43405</a>
Tau	Microtubule-associated protein tau	S515	RpAb	PN085	T	T	T	79	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
Tau	Microtubule-associated protein tau	S515+S518	RpAb	PN086	T	T	T	79	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
Tau	Microtubule-associated protein tau	S530	RpAb	PN088	T	T	T	79	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
Tau	Microtubule-associated protein tau	S578	RpAb	PN089	T	T	T	79	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
Tau	Microtubule-associated protein tau	S712	RpAb	PN090	T	T	T	79	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
Tau	Microtubule-associated protein tau	S716	RpAb	PN091	T	T	T	79	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
Tau	Microtubule-associated protein tau	S720	RpAb	PN092	T	T	T	79	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
Tau	Microtubule-associated protein tau	S202	RpAb	PN106	T	T	T	79	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
Tau	Microtubule-associated protein tau	S422	RpAb	PN107	T	T	T	78	Multiple bands between 40-75 kDa	<a href="#">NP_005901</a>	<a href="#">P10636</a>
TBK1	Tank-binding protein 1	Pan-specific	RpAb	NN109-2	T	T	T	84	80	<a href="#">NP_037386</a>	<a href="#">Q9UHD2</a>
TRADD	Tumor necrosis factor receptor type 1 associated	Pan-specific	MmAb	NN110	T	T	F	34	40	<a href="#">NP_003789</a>	<a href="#">Q15628</a>
Trail	Tumor necrosis factor-related apoptosis-inducing ligand	Pan-specific	RpAb	NN111	T	T	T	33		<a href="#">NP_003801</a>	<a href="#">P50591</a>
Tyk2	Protein-tyrosine kinase 2 (Jak-related)	Pan-specific	RpAb	NK181	T	T	T	134	144	<a href="#">NP_003322</a>	<a href="#">P29597</a>
Tyro10	Neurotrophic receptor-tyrosine kinase of discoidin	Pan-specific	RpAb	NK183-2	T	T	T	97	111	<a href="#">NP_006173</a>	<a href="#">Q16832</a>
Tyro3	Tyrosine-protein kinase receptor TYRO3	Pan-specific	MmAb	NK182	T			97		<a href="#">NP_006284</a>	<a href="#">Q06418</a>
VHR	Dual specificity protein phosphatase 3	Pan-specific	MmAb	NP030	T	F	T	20	18	<a href="#">NP_004081</a>	<a href="#">P51452</a>
XIAP	X-linked inhibitor of apoptosis protein (baculoviral IAP	Pan-specific	RpAb	NN112	T	T	T	57	48	<a href="#">NP_001158</a>	<a href="#">P98170</a>
Yes	Yamaguchi sarcoma proto-oncogene-encoded tyrosine	Pan-specific	MmAb	NK186	T	T	T	61	54	<a href="#">NP_005424</a>	<a href="#">P07947</a>
ZAP70	Zeta-chain (TCR) associated protein-tyrosine kinase_70	Pan-specific	MmAb	NK187	T	T	T	70	78	<a href="#">NP_003168</a>	<a href="#">P43403</a>
ZAP70/Syk	Zeta-chain (TCR) associated protein-tyrosine kinase_70	Y319/Y352	RpAb	PK109	T	T	T	70	71	<a href="#">NP_001070</a>	<a href="#">P43403</a>

# COMMERCIAL INVOICE

<b>DATE OF EXPORTATION</b>	<b>EXPORT REFERENCES</b> (not required)
<b>SHIPPER/EXPORTER</b>	<b>CONSIGNEE</b>  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
<b>COUNTRY OF EXPORT</b>	<b>TERMS OF SALE</b> Not for resale, sample for analysis
<b>COUNTRY OF ORIGIN</b>	<b>PURPOSE</b> Research and development
<b>COUNTRY OF ULTIMATE DESTINATION</b> Canada	<b>EXPORTING CARRIER</b> Federal Express International
<b>INTERNATIONAL AIR WAYBILL NUMBER</b> Federal Express Number:	

NO. OF PKGS	TYPE OF PACKAGING	QUANTITY OF SAMPLES	COMPLETE AND ACCURATE COMMODITY DESCRIPTION	UNIT VALUE
	<input type="checkbox"/> FedEx Letter <input type="checkbox"/> FedEx Pak <input type="checkbox"/> Box <input type="checkbox"/> Other	Total number of tubes:	Non hazardous, non infectious tissue samples embedded in paraffin blocks for research and development testing purposes. Samples are not for resale and there is no commercial value.	\$1.00 per sample
TOTAL NO. OF PACKAGES		TOTAL WEIGHT OF PACKAGES		TOTAL DECLARED VALUE
				\$

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## SIGNATURE AND STATUS OF AUTHORIZED PERSON

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

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<b>COUNTRY OF ORIGIN</b>		<b>PURPOSE</b> Research and development	
<b>COUNTRY OF ULTIMATE DESTINATION</b> Canada		<b>EXPORTING CARRIER</b> Federal Express International	
<b>INTERNATIONAL AIR WAYBILL NUMBER</b> Federal Express Number:			

NO. OF PKGS	TYPE OF PACKAGING	QUANTITY OF SAMPLES	COMPLETE AND ACCURATE COMMODITY DESCRIPTION	UNIT VALUE
	— FedEx Letter — FedEx Pak — Box — Other	<i>Total number of tubes:</i>	Non hazardous, non infectious tissue frozen 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).	<b>\$1.00</b> <i>per sample</i>
<b>TOTAL NO. OF PACKAGES</b>			<b>TOTAL WEIGHT OF PACKAGES</b>	<b>TOTAL DECLARED VALUE</b> \$

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<b>COUNTRY OF ULTIMATE DESTINATION</b> Canada	<b>EXPORTING CARRIER</b> Federal Express International
<b>INTERNATIONAL AIR WAYBILL NUMBER</b> Federal Express Number:	

NO. OF PKGS	TYPE OF PACKAGING	QUANTITY OF SAMPLES	COMPLETE AND ACCURATE COMMODITY DESCRIPTION	UNIT VALUE
	<input type="checkbox"/> FedEx Letter <input type="checkbox"/> FedEx Pak <input type="checkbox"/> Box <input type="checkbox"/> Other	<i>Total number of slides:</i>	Non hazardous, non infectious tissue sections on glass slides for research and development diagnostic purposes. Samples are not for resale and there is no commercial value.	<b>\$1.00</b> <i>per sample</i>
<b>TOTAL NO. OF PACKAGES</b>			<b>TOTAL WEIGHT OF PACKAGES</b>	<b>TOTAL DECLARED VALUE</b>
				\$

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