KAM-850 Kit

2012 NOV 15

KINEX™ KAM-850

ANTIBODY MICROARRAY KIT
CUSTOMER INFORMATION PACKAGE

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OVERVIEW OF KINEX KAM–850 ANTIBODY MICROARRAY KIT

Figure 1. Kinex™ KAM-850 Antibody Microarray Kit

1. INTRODUCTION

The Kinex™ KAM-850 Antibody Microarray Kit provides an alternative to our Kinex™ Services for clients to perform screening of their cell and tissue lyates in their own laboratories with our latest high content antibody microarray that features >850 pan- and phosphosite-specific antibodies. While our Kinex™ signal transduction protein profiling services are convenient and very cost-effective solutions to assist scientists in the broad discovery of productive research leads such as biomarkers, it can be cost prohibitive to ship frozen samples to Kinexus from overseas. The availability of the KAM-850 Kit allows clients access to our unique antibody microarrays to track the differential binding of dye-labeled proteins in lysates prepared from cells and tissues including cells, fresh or frozen tissues and serum samples. The results can provide novel and useful insights into differences in protein expression, phosphorylation and protein-protein interactions, and define antibody reagents that can be used to follow up on these findings. Our integrated platform of well estabished proteomics and bioinformatics services and proprietary technologies make the Kinex™ KAM-850 Antibody Microarray superior to any other commercially available antibody microarrays. Some of the advantages of our antibody microarrays include highly validated and well characterized antibody probes, wide coverage of cell signaling proteins and pathways, proprietary methods to reduce the rate of false positives and improve sensitivity, extensive follow up services for validation, and complimentary bioinformatics analyses for comparison purposes. In the following sections, we explain how the KAM-850 Antibody Microarray performs and how it stacks up to the competition. In Appendix B, we provide a direct comparison with high content antibody microarrays available from other competitors.

2. HIGHLY VALIDATED ANTIBODIES

Our current full Kinex™ Antibody Microarray Service monitors changes in the expression levels and phosphorylation states of signalling proteins with more than 850 antibodies, which includes approximately 517 pan-specific antibodies (for protein expression) and 337 phospho-site-specific antibodies (for phosphorylation). These antibodies, which have been selected from more than 4600 different commercial antibodies from over 26 companies, have been independently tested by Kinexus to identify many of the best immunological reagents available today to track important signal transduction proteins. Nearly 75% of the tested antibodies failed our tests for potency and specificity. The other top 25% of these antibodies that performed well in Western blotting applications have been incorporated into our Kinex™ Antibody Microarrays. Such cherry-picking is apparently not performed by our competitors, which rely only on one or two suppliers with dubious information about individual antibody performance. When our clients utlize the KAM-850 antibody microarray, upon request, we are pleased to disclose the commercial sources and in some cases, these antibodies are available from Kinexus for as low as US$179. Immunoblots with these particular antibodies are available for easy viewing in "Our Products" section of our main website. A complete listing of all the antibodies printed on the KAM-850 chip is shown in Appendix C, and an MS-Excel file with these antibodies is downloadable from the Kinexus website and provided on a DVD included with the KAM-850 Antibody Microarray Kit.

The classes of targeted proteins and phosphosites with the antibodies on the KAM-850 Antibody Microarray are listed in Table 1 below. The antibodies selected for use in our microarrays have been optimized to work in human, mouse and rat model systems, but have also been shown commonly to work in chicken, bovine, porcine, canine, rabbit, frog, sea star and many other diverse model systems.

Table 1. Families of protein targets for the KAM-850 Antibody Microarray chip. These statistics apply to Lot: K00114 (October 2012) and may be slightly altered in future print runs of this microarray chip. "Redundant" antibodies are those extra antibodies that react with different epitopes on the same protein targets as the "Non-redundant" antibodies or often with multi-phosphorylated phosphorylation site sequences. The other antibodies cover a range of other cellular functions, including cell cycle and apoptosis.

Content	Total	Non-redundant	Redundant
Number of pan-specific antibodies: 517	60.5%		
Number of phospho-specific antibodies: 337	39.5%		
Number of protein kinase antibodies - pan-specific	309	189	120
Number of protein kinase antibodies - phosphosite-specific	157	128	29
Number of protein phosphatase antibodies - pan-specific	38	31	7
Number of protein phosphatase antibodies - phosphosite-specific	6	4	2
Number of stress antibodies - pan-specific	37	22	15
Number of stress antibodies - phosphosite-specific	9	6	3
Number of transcription antibodies - pan-specific	24	20	4
Number of transcription antibodies - phosphosite-specific	51	44	7
Number of other antibodies - pan-specific	109	100	9
Number of other antibodies - phosphosite-specific	114	105	9
Total Number of Antibodies	**854**	**649**	**205**

3. QUALITY CONTROL PROCEDURES

Our antibodies are covalently immobilized on high quality glass surface coated with a proprietary 3-D polymer material to ensure high binding efficiency and specificity. Our microarrays are subjected to stringent quality control measures designed to ensure optimum antibody binding activity, printing consistency, and consistent intra-slide and inter-slide variability. Each microarray also has loading and antibody controls to ensure the distribution of protein is consistent on all fields. The KAM-850 Antibody Microarray chip provides semi-quantitative analyses of the expression and phosphorylation states of cell signalling proteins in two cell and tissue samples. if clients wish to take advantage of our KAM-850 Report Service, quantitative analysis of the strength of the fluorescence signals for each target protein can be provided in duplicate in a Microsoft Excel spreadsheet, which includes the (average) percent change from the control sample, the percent range in error, and Z-ratios.

In internal studies with the latest KAM-850 Antibody Microarray chip, we determined that the median spread between duplicate measurements with the same antibody in printed pairs was about 24% (i.e. the median range from the average of the duplicates was ±11.9% with a standard deviation of 1.0% from testing of 10 fields of 854 antibody pairs per field). The frequency of flagged antibody spots due to dust or mis-printing is less than 0.5%. When the average of duplicate measurements of antibody pairs on each chip was determined for the same sample applied to different KAM-850 Antibody Microarrays, we observed that the median value for the differences in the averages was ±8.1% with a standard deviation of 0.6% from testing of 4 pairs of fields. The dynamic range between the highest and lowest reproducible dye-bound protein signals from these Kinex™ chips exceeded 5000-fold. This performance exceeded that of antibody microarrays from three other competitors tested in our hands.

Figures 2 and 3 below provide images of the Kinex™ KAM-850 Antibody Microarray following a scan for dye-labeled protein from lysates from control and treated cells. To view additional example images or a sample of a Kinex™ KAM-850 Report, please contact one of our Technical Service Representatives.

Figure 2. Scanned image of the entire Kinex™ KAM-850 Antibody Microarray.

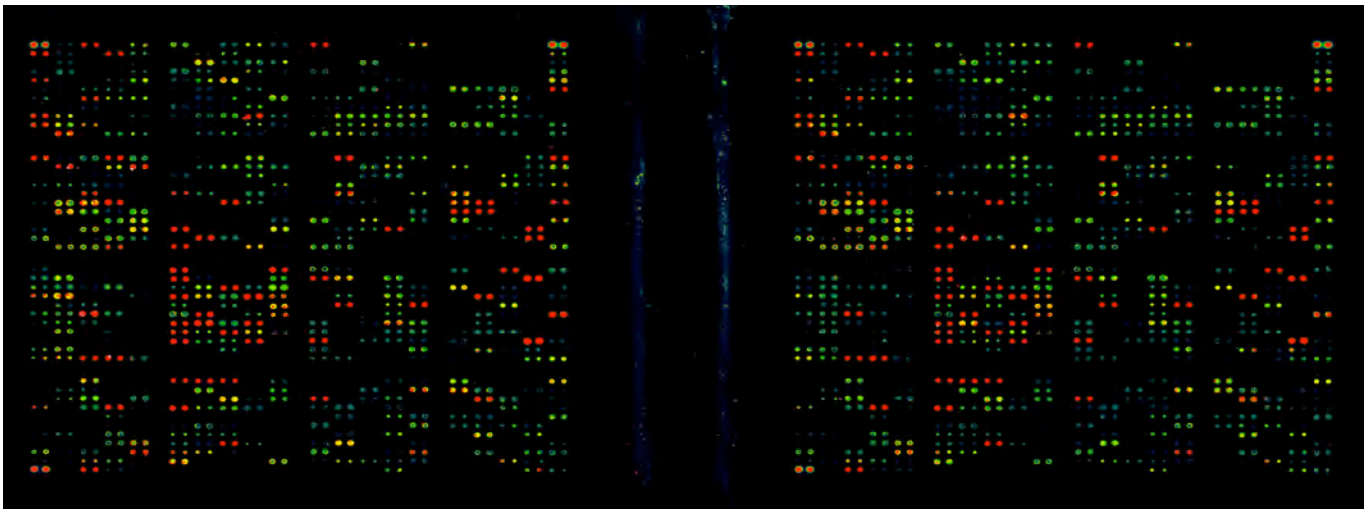
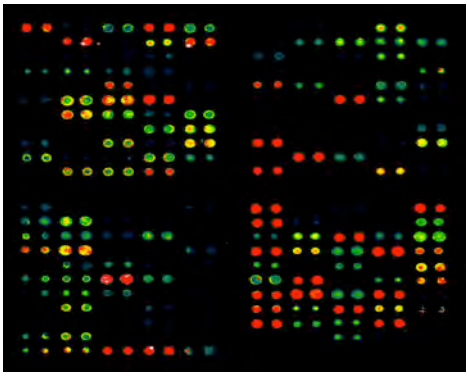


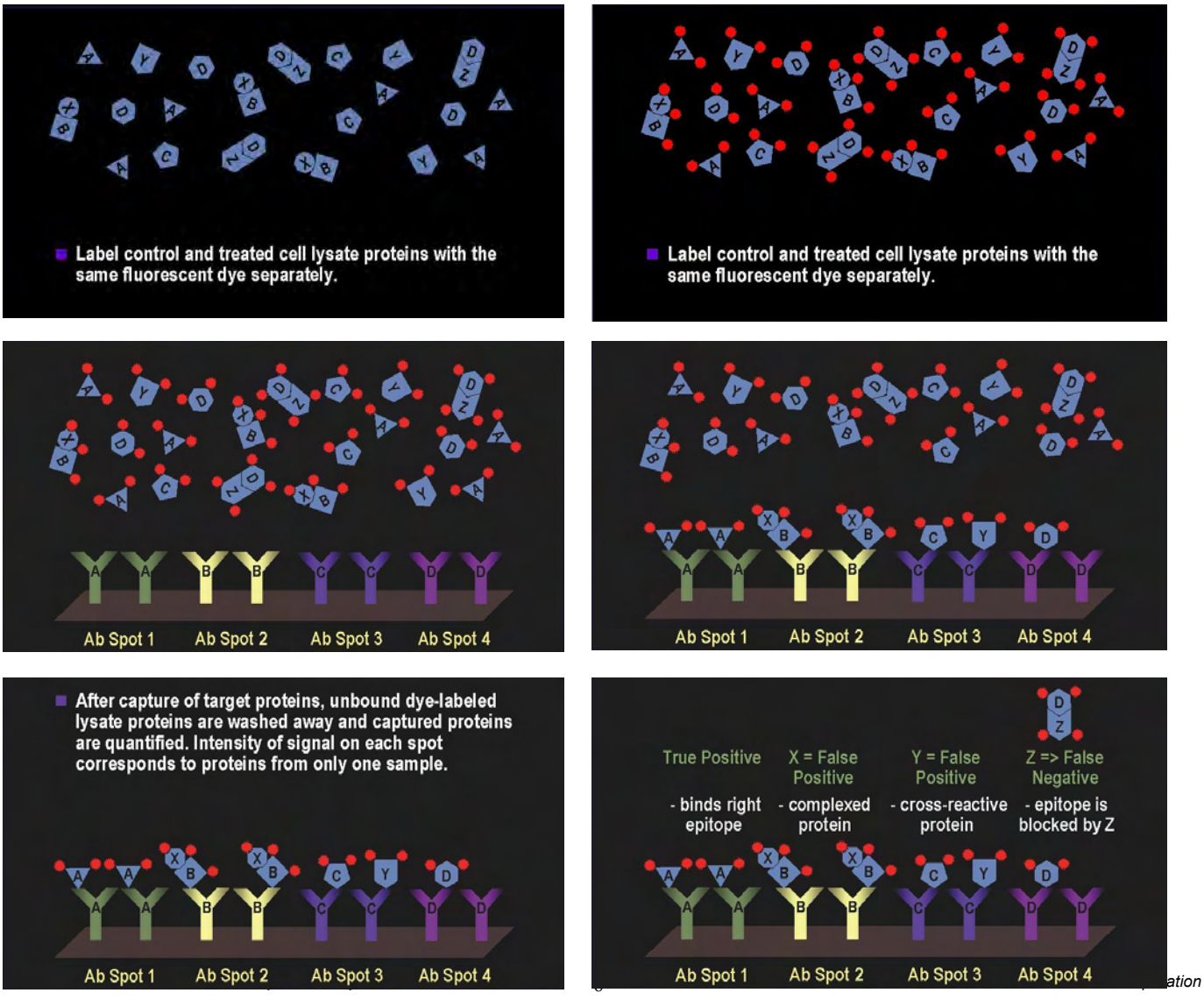
Figure 3. Close up of 4 out of 32 grids on the Kinex™ KAM-850 Antibody Microarray.



4. PRINCIPLES OF BINDING AND DETECTION

The methodology behind the Kinex™ KAM-850 Antibody Microarray is illustrated in Figure 4. The issues of antibody cross-reactivity, protein complexes and epitope masking are highlighted in last panel.

Figure 4. Methodology used in Kinex™ KAM-850 Antibody Microarray.



5. PROPRIETARY DYE

One key advantage of our antibody microarray format is that lysate samples from control and treated cells are labeled with the same dye and analyzed together on the same chip at the same time. In our experience, the use of a two dye, competitive binding system, in which a control sample is labeled with a different dye from the treatment sample and the two samples are mixed and co-incubated with the same regions of the same chips is not advisible. Apart from a 50% reduction in the amount of maximum detectable signal, it generates a much higher rate of false leads. Unlike oligonucleotides such as DNA and RNA, proteins display strong individual differences in their relative affinities for dyes. It should be appreciated that this problem also significantly impacts other proteomics approaches such as DIGE 2D gel analysis where two samples that are labeled with different dyes are mixed prior to electrophoresis. Colour changes seen with spots evident on a DIGE 2D gel may not be related to differences in protein expression but rather to variations in 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 type of special pre-enrichment. This is why we feel that antibody-based detection of proteins with our Kinex™ KAM-850 Antibody Microarrays and follow up Kinetworks™ Custom Screens are superior and complementary methods to undertake broad studies of proteins for signalling network analyses.

6. CHEMICAL CLEAVAGE

Since non-denatured proteins are analyzed by this method, as illustrated in the last panel of Figure 4, there is increased opportunity for false positives and false negatives due to antibody cross-reactivity and blocked epitopes in protein complexes. Many proteins reside in complexes with other proteins and antibodies, and as it is normally necessary to use non-denaturing conditions with antibody microarrays, many apparent changes in protein expressions or phosphorylations may arise from alterations in protein-protein interactions.

In our internal studies with cells from different species, only between 30 to 45% of the protein changes detected on a protein microarray were reproduced by immunoblotting. In addition, about 15 to 20% of the protein changes could not be validated by immunoblotting, because no detectable immunoreactive proteins were evident in these studies as the antibody microarray appears to be about 10-fold or more sensitive than standard Western blotting. It should be appreciated that this high rate of false positives is an inherent problem with all commercial antibody microarrays due to the reliance on non-denaturing conditions for immune capture of target proteins. To help reduce the number of false positives that are typically generated on a protein microarray, we have provided instructions for a chemical digestion step with the KAM-850 Kit in which native proteins are cleaved into larger fragments. This fragmentation leads to dissociation of complexes, but does not destroy most of the epitopes recognized by phosphosite-antibodies. Typical enzymatic cleavage of proteins with proteases such as trypsin causes the loss of most phosphosite epitopes as basic amino acids commonly surround phosphoserine and phosphothreonine sites. This chemical digestion step as an option to reduce the number of false positives for clients that are less interested in tracking protein-protein interactions changes in experimental model systems. The reagents for this chemical cleavage step are NOT provided with the KAM-850 Kit as many users may wish to also observed changes in protein-protein interactions in lysate samples from specimens from humans and animals.

7. COMPLIMENTARY MICROARRAY SCANNING

Clients must be able to scan the KAM-850 Antibody Microarray with captured dye-bound lysate proteins to quantitfy the levels of these proteins and their phosphorylation status in their cell and tissue samples. If suitable microarray

scanners are not locally available, clients have the option of shipping their chips back to Kinexus for complimentary scanning. The processed KAM-850 Antibody Microarray chip should be couriered back in the same plastic array storage receptacle tube in which it was packaged in the KAM-850 Kit. Refrigeration or freezing of the chip is unnecessary for shipping. Clients must arrange and pay for the courier costs for delivery to Kinexus in Vancouver, B.C., Canada. JPEG images of the scanned chip will be returned to the client by e-mail.

8. KAM-850 ANTIBODY MICROARRAY REPORTS

If clients wish Kinexus to quantify the intensities of dye-bound proteins captured on the KAM-850 chip, we offer a supporting service in which we use our proprietary software to average the intensities recorded for each pair of antibody spots to calculate the differences between the control and treated lysate samples. This includes calculations of Z scores and percent changes from control (%CFC). This permits the identification of the most promising biomarkers for further validation by immunoblotting. The Report in pdf and MS-Excel formats is returned back to clients within a 5 day turnaround by e-mail. The cost of this service for each Report in which one control and one experimental samples are compared is US$195. Additional costs may apply is extra comparisons are requested.

9. FOLLOW-UP SERVICES

We highly recommend that all interesting leads generated with the Kinex™ KAM-850 Antibody Microarray should be validated by Western blotting. Such validation is essential with any commercial or custom produced antibody microarray. To assist in this regard, Kinexus offers two cost-effective custom immunoblotting services. Clients can choose from the Kinetworks™ Custom KCPS 1.0 (Multi-Antibody) Protein Screen where any 18 antibodies can be selected and we will optimize it to your model system, or with the Kinetworks™ Custom KCSS 1.0 (Multi-Sample) Protein Screen send up to 8 different samples and choose up to 3 different antibodies, provided the molecular weights are significantly separated by SDS-PAGE. Lysate samples for Kinetworks™ analyses may be shipped without refridgeration to Kinexus following boiling in SDS-PAGE sample buffer. More about these Kinetworks™ services and the necessary forms can be download from our website with the following specific url: http://www.kinexus.ca/ourServices/immunoblotting/custom_profiling/custom_profiling.html

The availability of these Kinetworks™ Custom screens is an important distinguishing feature of our antibody microarray services as clients can have their research leads conveniently and cost-effectively confirmed. The cost savings arising from the use of the Kinexus discovery platform becomes immediately apparent when one considers the purchase costs of individual antibodies and the labour necessary to confirm key antibody results obtained with competitor antibody microarrays. In addition, once the results are confirmed by Western blotting, clients can correlate their data with thousands of other data points from hundreds of different model systems using our KiNET databases, which contain the results from thousands of Kinetworks™ Immunoblots or Kinex™ Antibody Microarray analyses. Over 370 scientific publications have been published that reference the Kinexus Services, of which more than 100 are directly related to the Kinex™ Antibody Microarray Service.

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

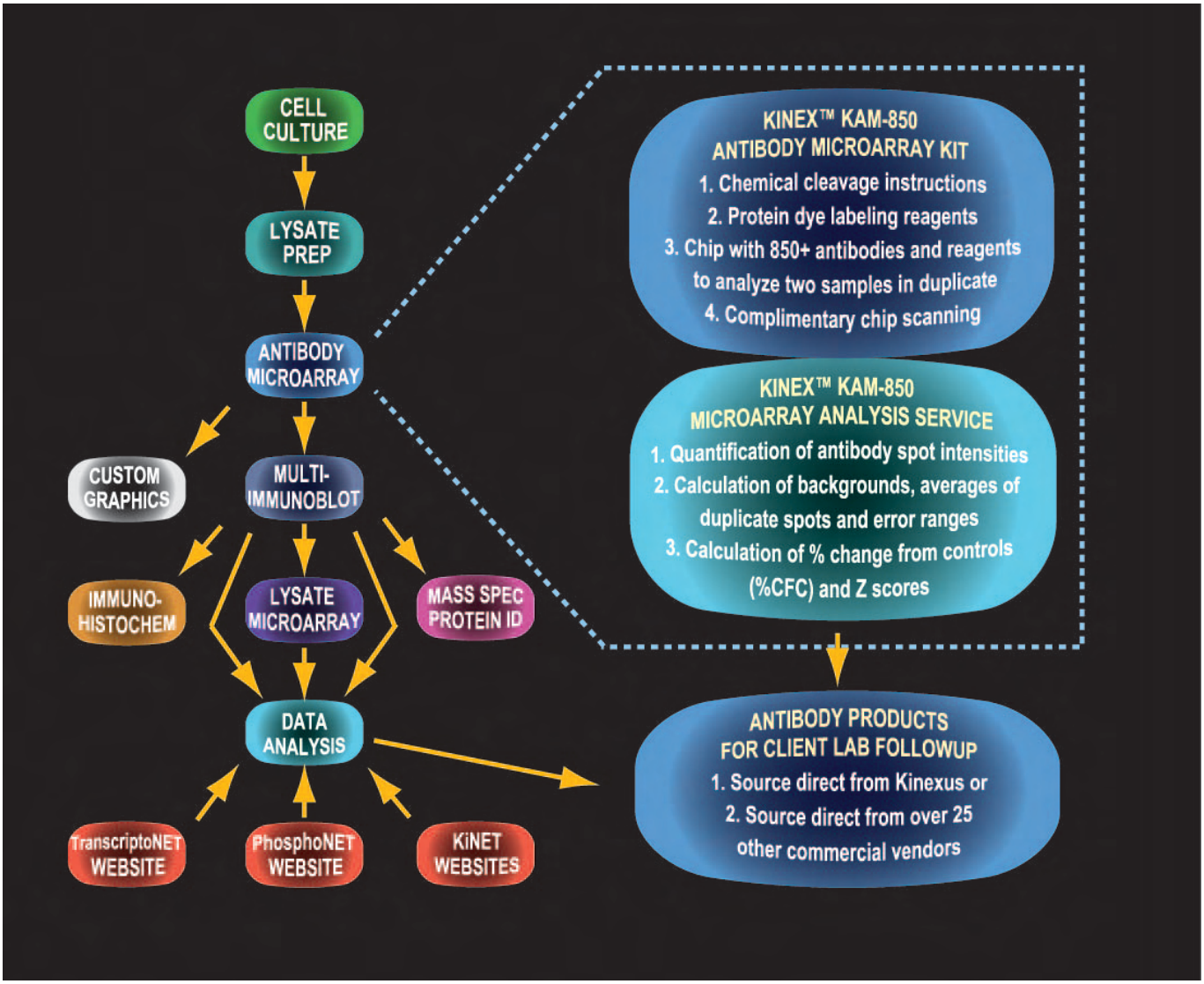
- In vivo services – send us your experimental compounds, proteins or oligonucleotides and we will perform the treatment of cells according to your specification and generate lysates for testing with our microarrays;
- Tissue or cell pellet processing – send us your cell pellets or tissues and we will prepare lysates for you;
- Concentrating – we can increase the concentration of your samples if required;
- Dye-labeling step – we can provide an extra dye-labeling step if your sample concentrations are low;
- Chemical digestion step – we can apply our proprietary cleavage step to reduce false positives;
- Mass spectrometry identification of antibody cross-reactive proteins;
- Custom graphics – we can prepare pathway charts and bar graphs for your scientific publications;
- Custom Microarrays – we can print custom antibody microarrays for your own internal research programs;
- Custom Lysate Microarrays – we can print custom microarrays with hundreds of lysates to allow for further evaluation of the biological robustness of biomarkers identified through our Kinex™ Antibody Microarray services.

The aforementioned services are available for nominal fees. However, Kinexus also offers free services and open access online databases to clients which include the following:

- Free reagents – we can send clients an aliquot of our lysis buffer and protease inhibitor tablets to assist with the sample preparation process. We require just a courier account number to cover the shipping fees;
- KiNET™ Antibody Microarray (KiNET-AM) DataBase – clients can directly compare their Kinex™ Antibody Microarray results with lysates from thousands of other experimental model systems analysed with the same methodology;
- KiNET™ Immunoblotting (KiNET-IB) DataBase – clients can compare the results from their validation immunoblotting data with hundreds of other experiments from hundreds of other model systems.
- PhosphoNET KnowledgeBase – clients can compare interesting phosphosites identified by our microarrays with over 650,000 confirmed and predicted human phosphosites to learn about their evolutionary conservation in up to 20 different species as well as the top kinases predicted to phosphorylate these sites;
- TranscriptoNET KnowledgeBase – clients can compare expression levels identified by our microarrays with the mRNA levels for over 21,000 human genes in 600 different human organs, tissues and cell lines.

Figure 5 outlines how the proteomics and bioinformatics services and products offered by Kinexus integrate into a discovery engine for identification and validation of biomarkers and antibody probes to track them with other detection systems.

Figure 5. The Kinexus integrated platform of proteomics and bioinformatics services and products for biomarker discovery and validation, and antibody probe identification. The Kinex™ KAM-850 Antibody Microarray Kit enables clients to perform initial analyses in their own laboratories, but still gain access to a wide range of follow-up services and products.



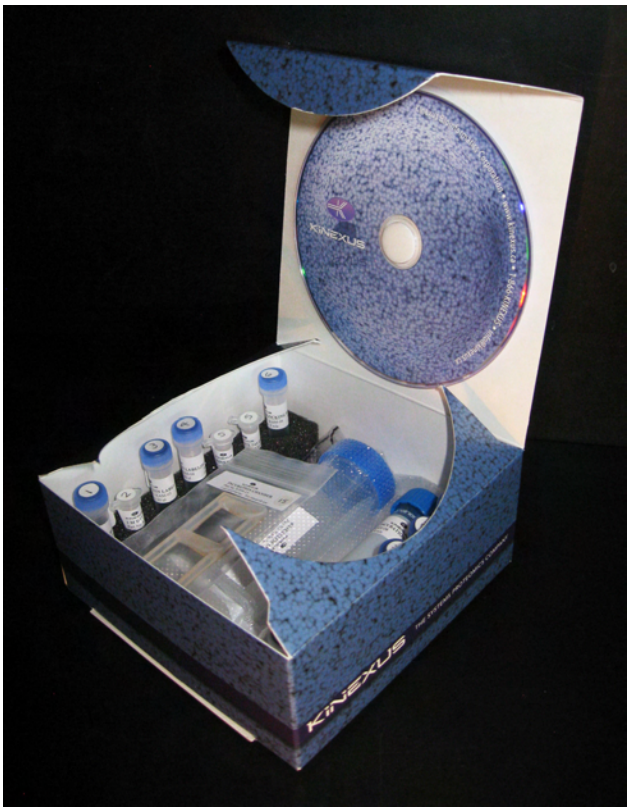


Figure 6. Opened Kinex™ KAM-850 Antibody Microarray Kit.

10. LIST OF COMPONENTS AND ADDITIONAL ITEMS NEEDED

Each Kinex™ KAM-850 Antibody Microarray Kit is designed for processing and probing a pair of protein samples for comparison. It contains all the necessary components required including a KAM-850 microarray chip, reagents and consumables for protein lysate preparation, protein labeling and purification, array blocking, probing and washing. It can be shipped by courier at room temperature. We also offer the KAM-850 microarray chip and the supporting reagents and consumables as separate products. Upon arrival, remove the KAM-850 microarray in the plastic array storage receptacle tube from the kit and store it unopened at -20°C or colder until use. The Kinex 543 Dye vials should also be kept at -20°C. Store the rest of the components of the kit at 4°C, and we recommend that the kit is used within 6 months of receipt.

The KAM-850 Kit contains the following components:

- KAM-850 microarray chip – 1
- Plastic array storage receptacle tube - 1
- Kinexus Protein Lysis Buffer - 1 ml
- Protein Labeling Buffer I – 25 µl

- Protein Labeling Buffer II – 250 µl
- Kinex 543 Dye - 2 vials
- Microspin G25 Columns - 2
- Blocking Buffer I - 2 ml
- Blocking Buffer II – 500 µl
- 10X Incubation Buffer – 4 x 2 ml
- 10X Wash Buffer I - 2 ml
- 10X Wash Buffer II – 2 ml
- 10X Wash Buffer III - 2 ml
- 10X Wash Buffer IV - 2 ml
- KAM-850 2-well Incubation Chamber - 1
- Dithiothreitol powder – 1 mg
- Collection tubes – 2
- A DVD with complete instructional information for KAM-850 processing

Additional components and access to the following lab equipment is needed:

- Pipettes
- Microprobe sonicator or syringes with 26-gauge needles
- Homogenizer or French Press (for tissues)
- Roche Mini Complete Protease Tablet
- Benchtop ultracentrifuge or microcentrifuge
- Benchtop swing bucket centrifuge (optional)
- Spectrophotometer equipped with a visible light source
- Vortexer
- Aluminum foil
- Bradford Protein Assay reagents
- Benchtop orbital shaker
- Rotator
- Compressed N_2 (optional)
- Microarray scanner (e.g. ScanArray® Express Microarray Scanner from Perkin-Elmer, GenePix 400B Microarray Scanner from Molecular Devices)

11. QUANTITY OF LYSATE REQUIRED

The amount of lysate protein required for the Kinex™ Antibody Microarray analysis is 50 µg per sample at an approximate concentration of 2 mg/ml. Two lysate samples are tested on the same microarray chip. A lysate preparation buffer is provided with the Kinex™ Antibody Microarray Kit. Alternative lysate buffers may be used, but they must NOT contain Tris or reagents carrying reactive amine groups. Lysate samples should be stored frozen prior to dye labeling and application to the microarray chip.

12. FORMS TO BE COMPLETED

Only one is initially necessary and is provided with this information package in Appendice A. The Kinex™ KAM-850 Kit Product Order Form should be completed and transmitted back to Kinexus by facsimile or e-mail to place an order for the product. Additional forms are provided on a DVD that is sent with the Kinex™ KAM-850 Kit. These include a Kinex™ KAM-850 Scanning Service Order Form, which should be sent along to Kinexus with the lysate-incubated KAM-850 chip in the event that clients would like to have scanned as a complimentary service. If the KAM-850 chip is being sent to Kinexus from outside of Canada, it will be necessary to complete a commercial invoice form for passing Canadian Customs. Clients are responsible for arranging shipping of microarrays sent to Kinexus and paying the courier costs. If clients wish to have Kinexus provide a KAM-850 Analysis Report, they should fill out a KAM-850 Analysis Report Service Order Form and submit it by e-mail with a high resolution Tiff image of the scanned KAM-850 chip or by courier along with the lysate-incubated microarray.

A. Kinex™ KAM-850 Kit Product Order Form (KABM-POF)

Please ensure:

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

Form: KABM-POF

KINEX™ KAM-850 ANTIBODY MICROARRAY KIT

PRODUCT ORDER FORM

KINEXUS ORDER NUMBER
For Kinexus internal use only.

CUSTOMER INFORMATION ☐ REPEAT CUSTOMER OR ☐ NEW CUSTOMER

☐ Dr. ☐ Mr. ☐ Ms.

Name of Authorized Representative or Principal Investigator | *Title/Position*

Company Name or Institute | *Department*

Street Address

City | *State or Province* | *Country* | *Zip or Postal Code*

Email Address | *(Area Code) Telephone Number* | *(Area Code) Facsimile Number*

Contact Person (if different from Authorized Representative) | *Email Address* | *(Area Code) Telephone Number*

BILLING INFORMATION

The complete Kinex™ KAM-850 Antibody Microarray Kit is offered to allow clients to track the expression and phosphorylation of cell signalling proteins with ~850 pan- and phosphosite-specific antibodies in two (2) cell/tissue lysate samples with duplicate measurements on one chip with all of the supporting reagents. The Kinex™ KAM-850 Antibody Microarray Chip and Supporting Reagents are also available separately. Clients have the option of sending the processed KAM-850 microarray to Kinexus to obtain a high quality TIFF image of the scanned chip with dye labeled proteins. There is no additional fee for the scanning service. Kinexus can also provide a Kinex™ KAM-850 Antibody Microarray Analysis Report for quantification of the scanned chip for an additional US$195 upon completion of a KAM-850 Analysis Report Service Order Form (KAMR-SOF), which is provided with the Kit.

INTRODUCTORY PRICE – US $749 PER COMPLETE KAM-850 ANTIBODY MICROARRAY KIT

Total # of Complete Kinex™ KAM-850 Antibody Microarrays Kits ordered: _____ @ US $749 per complete kit = $_____
Total # of Kinex™ KAM-850 Antibody Microarrays Chips ordered: _____ @ US $499 per chip = $_____
Total # of Kinex™ KAM-850 Supporting Reagent Kits ordered: _____ @ US $299 per reagent kit = $_____

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

TOTAL COST FOR THIS ORDER (excluding courier shipping costs) = $_____

FOR CANADIAN CUSTOMERS ONLY:
Add an additional 12% to the above total for GST (No. 893907329 RT0001): + $_____ = $_____
TOTAL AMOUNT PAYABLE IN U.S FUNDS

PAYMENT METHOD

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

Print Cardholder Name | *Visa Number* | *Expires (M/Y)* | *Cardholder Signature*

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

☐ Dr ☐ Mr ☐ Ms

Accounts Payable Contact Name | *Company Name or Institute*

Street Address | *City*

State or Province | *Country* | *Zip or Postal Code* | *(Area Code) Telephone Number*

AUTHORIZATION

CUSTOMER AGREES TO PAY FOR THE ORDERED ITEMS AND ASSOCIATED SHIPPING COSTS. IN THE EVENT THAT AN ORDER IS CANCELLED FOLLOWING SHIPPING AND THE UNOPENED PRODUCT IS RETURNED WITHIN 1 MONTH, A US $150 PER KIT RE-STOCKING FEE WITH APPLY.

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

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

High Content Antibody Microarray Competitor Analysis

Performed in-house by Kinexus Bioinformatics Corporation
Date: 2012 November 1

Company	Kinexus	FullMoon	Sigma	Hypromatrix	Raybiotech	R&D Systems
Array name	KAM-850 Antibody Microarray	Phospho Explorer Antibody Microarray	Panorama® Antibody Array – XPRESS Profiler725	Signal Transduction AntibodyArrayTM	RTK Phosphorylation Array 1	Human Phospho-Receptor Tyrosine Kinase Array Kit
Catalogue ID	KABM-K	PEX100	XP725	HM3000	AAH-PRTK-1-8	ARY001B
Total number of distinct antibodies	**854**	**1318**	**725**	**399**	**0**	**49**
Non-redundant - Pan antibodies (1)	362	354	579	395	71	49
Non-redundant Phospho antibodies (2)	287	283	27	2	0	0
Redundant - Pan antibodies	155	380	114	2	0	0
Redundant Phospho antibodies	50	301	5	0	0	0
Non-redundant Pan antibodies - Kinases (3)	189	113	75	70	71	49
Non-redundant Pan antibodies - Phosphatases (4)	31	6	10	10	0	0
Overlap of Phosphosite- and Pan-specific antibodies (1)	Almost no overlap	Almost complete overlap	Almost no overlap	Only 2 phosphosite-specific antibodies	Only generic phosphotyrosine-specific antibodies	Only generic phosphotyrosine-specific antibodies
Number of chips (5)	1	2	2	1	1	1
Number of fields per chip (6)	2	1	1	1	8	4
Number of cell/tissue lysates testable (6)	2	2	2	1	8	4
Number of replicates per field	2	2	2	1	2	2
Total number of antibody spots and configuration per kit	1 x 854 x 2 x 2 = 3,416	2 x 1318 x 2 = 5,272	2 x 725 x 2 = 2,900	1 x 399 x 1 = 399	1 x 71 x 8 x 2 = 1,152	1 x 49 x 4 x 2 = 392
Spot diameter	150-200 µm	220-250 µm	300 µm	NA (7)	NA	NA
Median range in duplicates from average (8)	12%	4%	8%	NA	NA	NA
Dynamic range (9)	>5000-fold	1250-fold	1000-fold	NA	NA	NA
Human reactivity (10)	Yes	Yes	Yes	Yes	Yes	Yes
Array type	3D matrix coated glass slide	3D polymer coated glass slide	Nitrocellulose-coated Whatman FAST® glass slide	Nitrocellulose membrane	Option of membrane or glass chip	Nitrocellulose membrane
Recommended or provided detection	Non-competitive/ Single dye	Non-competitive/ Single dye	Competitive/ Two dye	Non-competitive/ Antibody	Non-competitive/Biotinylated Antibody	Non-competitive/HRP Antibody
Price - chip/array only (11)	$499	$1,300	NA	$980	NA	NA
Price per antibody spot (11)	**15¢**	**25¢**	NA	**$2.45**	NA	NA
Kit price - chip/array + reagents (12)	$749	1,300 + 300 + 50 = $,1650	1,930 + 100 = $,2030	NA	$1,030	$495
Kit price per antibody spot (12)	**22¢**	**31¢**	**70¢**	NA	**89.¢**	**$1.26**
Service price - chip/array report generation (13)	$199	No	No	No	No	No
Service price per sample (13)	$885*/$1,498**	$1,950	NA	NA	NA	NA
Service Cost per sample per spot (13)	**52¢*/88¢****	**74¢**	NA	NA	NA	NA
Citations via Google Scholar (14)	65	17	11	13	13	27
Antibody microarray database access	Yes (15)	No	No	No	No	No
Follow-up Western blotting service	Yes (16)	No	No	No	No	No

Company	Kinexus	FullMoon	Sigma	Hypromatrix	Raybiotech	R&D Systems
Case Study 1: Samonella infected HeLa cells (17)	% of antibodies showing ≥50% changes from untreated control: 224/803=27.9%	% of antibodies showing ≥50% changes from untreated control: 6/1318=0.5%	NA	NA	NA	NA
Case Study 2: EGF treated A431 cells (18)	% of antibodies showing ≥50% changes from untreated control: 44/604=7.3%	NA	% of antibodies showing ≥50% changes from untreated control: 6/224=2.7%	NA	NA	NA

Notes

1. Non-redundant antibodies refers to those that target a particular protein or phosphosite. Redundant antibodies correspond to additional antibodies that target a protein for which a non-redundant antibody is already provided, but a different epitope in that protein may be selected. Pan-specific antibodies recognize the target proteins whether they are phosphorylated or not, except in the case of the Phospho Explorer Antibody Microarray from Full Moon. In this case, their pan-specific antibodies recognize only the dephosphorylated forms of the target proteins on their microarray. Consequently, these antibodies do not provide an accurate measure of the changes in total target protein levels due to expression changes.
2. Phospho-antibodies recognize distinct phosphorylation site sequences when they are phosphorylated. For some array, generic phospho-tyrosine, phospho-threonine and phospho-serine antibodies may also be included.
3. Number of distinct protein kinases for which pan-specific antibodies are available in the printed array.
4. Number of distinct protein protein phosphatases for which pan-specific antibodies are available in the printed array.
5. Number of glass slides or membranes provided for the price shown.
6. Number of distinct fields per slide. In a non-competitive, single dye-binding application, 1 sample would be analyzed per field. In a competitive, two dye-binding application, 2 samples would be analyzed per field. However, due to differential dye binding by proteins, it is necessary to perform another microarray analysis with identical samples and protocols, except the dyes are switched between the samples. The competitive, two dye-binding methodology is not recommended due to this problem and because of poorer dynamic range.
7. NA = Not available or not applicable
8. Median error range is estimated from the difference of duplicate antibody spot measurements with the average of recorded signals from these average spots. The percent error is generally reduced with stronger detected antibody spot signals.
9. Dynamic range is based on the highest and lowest detected signals that have percent errors within 20% of the recorded spot signal strength.
10. U.S. pricing is based on the purchase of only arrays without any support reagents if available from manufacturer. Shipping not included. Number of spots includes duplicates.
11. For the Full Moon microarray kits, supporting reagents must be purchased separately for $300, but this does not include the cost of the dye for labeling proteins. We have added another $50 to cover this. For the Sigma microarray kits, supporting reagents are included, but this excludes the purchase of two dyes, which would be about $100 extra.
12. Clients can send processed microarray chips to Kinexus for generation of a Report that includes data analyses and identification of leads for follow-up.
13. Clients can send cell/tissue lysate samples to Kinexus and Full Moon for antibody microarray analyses as a service. Kinexus offers non-confidential* and fully confidential** pricing options. Non-confidential results may be placed in the open-access KiNET website after a 6 month hold.
14. Based on searches with Google Scholar that includes the name of the company and the specific kit. This approach may not capture all literature references, but it provides equitable search parameters. Over one hundred literature references to the Kinex™ antibody microarrays can be generated with broader search terms.
15. Kinexus provides open-access to its online KiNET Antibody Microarray database with the results from over 2000 different Kinex™ KAM analyses as well as Kinetworks™ multi-immunoblotting data from over 6000 other cell/tissue lysate samples from its KiNET Immunoblotting database.
16. Kinexus provides a custom multi-immunoblotting service in which 18 different leads from the Kinex™ KAM-850 Antibody Microarray can be confirmed by Western blotting for $650. per sample with a 2-3 week turn-around.
17. About 19% of the phosphosite- and 18% of the pan-specific antibody targets on the Full lMoon microarray are similarly tracked with the Kinex™ microarray. For this study, the Kinex™ KAM-800 Antibody Microarray chip was originally used. In a parallel study with similar cell lysates, Samonella was observed to induce significant changes in 24% of 9508 different phosphosites in 1973 HeLa cell proteins (Lindsay et al. (2011) Science Signaling 4 (191), rs9. [DOI:10.1126/sciscignal.2001668]).
18. For this study, the Panorama® Cell Signaling (CSAA1) microarray and Kinex™ KAM-650 antibody microarrays were tested.

Summary

This competitor analysis clearly demonstrates that the Kinex™ KAM-850 Antibody Microarray is superior to all of its competitors with respect to:

- largest coverage of diverse non-redundant target proteins and phosphosites:
- largest total number of protein kinase and protein phosphatases targets;
- minimization of overlap of epitopes to permit highest pairing of phosphosite- and pan-specific antibodies;
- improved analyses with novel chemical cleavage of lysate proteins, non-competitive, single dye methodology, and usage of same chip for two samples ;
- greatest dynamic range of detection;
- lowest pricing per antibody spot regardless of whether clients purchase only the KAM-850 chip, the kit or utlize our convenient proteomics services;
- greatest validation in the scientific literature from the most published scientific reports using the Kinex™ antibody microarrays;
- online, open-access to the results of thousands of other studies using the Kinex™ antibody microarrays; and
- the ability to have lead results from the KAM-850 chips confirmed for clients with a convenient and economical Western blotting service.

It is unclear where the antibodies printed on the arrays of our competitors are sourced from, and in some cases, they state that they will not reveal this. However, our antibodies have been cherry-picked from over 25 different vendors, and selected from the top 25% of all of the more than 4500 antibodies independently and stringently tested by Kinexus. We are pleased to disclose the commercial sources of antibodies that prove to be interesting and useful to our clients. We are happy to assist our clients in planning their studies and helping to interpret their results with our friendly and knowledgeable service representatives. Over 1650 scientists in over 35 countries world-wide have benefited from our powerful suite of proteomics and bioinformatics services. You can see more for less from Kinexus than from any of our competitors, and we have the data to prove it.

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Kinex™ KAM-850 Antibody Microarray - Antibody List

Updated: 2012 November 1

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
1	NN001	14-3-3 z	Pan-specific	14-3-3 protein zeta (cross-reacts with other isoforms)	MmAb	NP_003397	P63104	1	1	4	1					
2	NN166	4E-BP1	Pan-specific	Eukaryotic translation initiation factor 4E binding protein 1 (PHAS1)	RpAb	NP_004086	Q13541	1	1	6	1					
3	PN001	4E-BP1	S65	Eukaryotic translation initiation factor 4E binding protein 1 (PHAS1)	RpAb	NP_004086	Q13541	1	1	8	1					
4	PN114	4E-BP1	T45	Eukaryotic translation initiation factor 4E binding protein 1 (PHAS1)	RpAb	NP_004086	Q13541	1	1	10	1					
5	PN128	4E-BP1	T70	Eukaryotic translation initiation factor 4E binding protein 1 (PHAS1)	RpAb	NP_004086	Q13541	1	1	2	2					
6	NK001	Abl	Pan-specific	Abelson proto-oncogene-encoded protein-tyrosine kinase	MmAb	NP_005148	P00519	1	1	4	2		•			
7	PN002	AcCoA carboxylase	S80	Acetyl coenzyme A carboxylase	RpAb	NP_000655	Q13085	1	1	6	2					
8	NN135-1	Acetylated Lysine	Pan-specific	Acetylated Lysine	RpAb	NA	NA	1	1	8	2					
9	NN135-2	Acetylated Lysine	Pan-specific	Acetylated Lysine	MmAb	NA	NA	1	1	10	2	•				
10	NK002	ACK1	Pan-specific	Activated p21cdc42Hs protein-serine kinase	RpAb	NP_005772	Q07912	1	1	2	3		•			
11	PN003-PN004	Adducin a	S726	Adducin alpha (ADD1)	RpAb	NP_058432	P35611	1	1	4	3					
12	NN002	AIF	Pan-specific	Apoptosis inducing factor (programed cell death protein 8 (PDCD8))	GpAb	NP_004199	O95831	1	1	6	3					
13	NN003	AK2	Pan-specific	Adenylate kinase 2	RpAb	NP_001616	P54819	1	1	8	3					
14	NK003	ALK	Pan-specific	Anaplastic lymphoma kinase	RpAb	NP_004295.2	Q9UM73	1	1	10	3		•			
15	NK004	ALS2CR7 (PFTAIRE2)	Pan-specific	Amyotrophic lateral sclerosis 2 chromosomal region candidate gene protein-serine kinase 7	RpAb	NP_631897	Q96Q40	1	1	2	4		•			
16	PK002	AMPKa1/2	T183	5'-AMP-activated protein kinase subunit alpha 1/2	RpAb	NP_006242	Q13131	1	1	4	4		•			
17	NK006	ANKRD3	Pan-specific	Ankyrin repeat domain protein-serine kinase 3 (RIPK4, DIK)	RpAb	NP_065690	P57078	1	1	6	4		•			
18	NN004	APG1	Pan-specific	Hsp 70-related heat shock protein 1 (osmotic stress protein 94 (OSP94))	RpAb	NP_055093	O95757	1	1	8	4	•			•	
19	NN122	APG2	Pan-specific	Hsp 70-related heat shock protein 4 (HSP70RY)	RpAb	NP_002145.3	P34932	1	1	10	4				•	
20	PN189	APP	T668	Amyloid beta A4 protein	RpAb	NP_000475.1	P05067	1	1	2	5					
21	NN121	Arrestin b1	Pan-specific	Arrestin beta 1	MmAb	NP_004032	P49407	1	1	4	5					
22	PN133	Arrestin b1	S412	Arrestin beta 1	RpAb	NP_004032	P49407	1	1	6	5					
23	NK007	ASK1 (MAP3K5)	Pan-specific	Apoptosis signal regulating protein-serine kinase	RpAb	NP_005914	Q99683	1	1	8	5		•			
24	NK007-2	ASK1 (MAP3K5)	Pan-specific	Apoptosis signal regulating protein-serine kinase	RpAb	NP_005914	Q99683	1	1	10	5	•	•			
25	PK143	ASK1 (MAP3K5)	S1046	Apoptosis signal regulating protein-serine kinase	RpAb	NP_005914	Q59GL6	1	1	2	6		•			
26	NN160	ATF2	Pan-specific	Activating transcription factor 2 (CRE-BP1)	RpAb	NP_001871	P15336	1	1	4	6			•		
27	PN006-1	ATF2	T69 + T71	Activating transcription factor 2 (CRE-BP1)	RpAb	NP_001871	P15336	1	1	6	6			•		
28	PN115	ATF2	S112	Activating transcription factor 2 (CRE-BP1)	RpAb	NP_001871	P15336	1	1	8	6			•		
29	NK008-2	Aurora A (AIK)	Pan-specific	Aurora Kinase A (serine/threonine protein kinase 6)	RpAb	NP_940835	O14965	1	1	10	6		•			
30	NK193	Aurora B (AIM-1)	Pan-specific	Aurora Kinase B (serine/threonine protein kinase 12)	RpAb	NP_004208	Q96GD4	1	1	2	7		•			
31	NK009	Aurora C (AIK3)	Pan-specific	Aurora Kinase C (serine/threonine-protein kinase 13)	RpAb	NP_003151	Q9UQB9	1	1	4	7		•			
32	NK010	Axl	Pan-specific	Axl proto-oncogene-encoded protein-tyrosine kinase	RpAb	NP_001690	P30530	1	1	6	7		•			
33	PN008	B23 (NPM)	T199	B23 (nucleophosmin, numatrin, nucleolar protein NO38)	RpAb	NP_002511	P06748	1	1	8	7					
34	PN008-2	B23 (NPM)	T199	B23 (nucleophosmin, numatrin, nucleolar protein NO38)	RpAb	NP_002511	P06748	1	1	10	7	•				
35	PN009	B23 (NPM)	T234/T237	B23 (nucleophosmin, numatrin, nucleolar protein NO38)	RpAb	NP_002511	P06748	1	1	2	8					
36	PN012-1	Bad	S99	Bcl2-antagonist of cell death protein	RpAb	NP_004313	Q92934	1	1	4	8					
37	NN000	Bak	Pan-specific	Bcl2 homologous antagonist/killer (BCK2L7)	RpAb	NP_001179	Q16611	1	1	6	8					
38	NN005	Bax	Pan-specific	Apoptosis regulator Bcl2-associated X protein	RpAb	NP_620116	Q07812	1	1	8	8					
39	NN006	Bcl2	Pan-specific	B-cell lymphoma protein 2 alpha	MmAb	NP_000624	P10415	1	1	10	8					
40	NN006-1	Bcl2	Pan-specific	B-cell lymphoma protein 2 alpha	RpAb	NP_000624	P10415	1	1	2	9	•				
41	NN007	Bcl-xL	Pan-specific	Bcl2-like protein 1	MmAb	NP_612815	Q07817	1	1	4	9					
42	NN008	Bcl-xS/L	Pan-specific	Bcl2-like protein 1	RpAb	NP_612815	Q07817	1	1	6	9					
43	PK164	Bcr	Y177	Breakpoint cluster region protein	RpAb	NP_004318.3	P11274	1	1	8	9		•			
44	NN009	Bid	Pan-specific	BH3 interacting domain death agonist	GpAb	NP_001187	P55957	1	1	10	9					
45	NK011	BLK	Pan-specific	B lymphoid tyrosine kinase	RpAb	NP_001706	P51451	1	1	2	10		•			
46	PN013	BLNK	Y84	B-cell linker protein	RpAb	NP_037446	Q75498	1	1	4	10					
47	NK012	BMX (Etk)	Pan-specific	Bone marrow X protein-tyrosine kinase	MmAb	NP_001712	P51813	1	1	6	10		•			
48	PK003	BMX (Etk)	Y40	Bone marrow X protein-tyrosine kinase	RpAb	NP_001712	P51813	1	1	8	10		•			
49	PN014	BRCA1	S1497	Breast cancer type 1 susceptibility protein	RpAb	NP_009225	P38398	1	1	10	10					
50	PN116	BRCA1	S1423	Breast cancer type 1 susceptibility protein	RpAb	NP_009225	P38398	1	1	2	11					
51	NK013	BRD2	Pan-specific	Bromodomain-containing protein-serine kinase 2	RpAb	NP_005095	P25440	1	1	4	11		•			
52	NK014	Btk	Pan-specific	Bruton's agammaglobulinemia tyrosine kinase	RpAb	NP_000052	Q06187	1	1	6	11		•			
53	PK004	Btk	Y223	Bruton's agammaglobulinemia tyrosine kinase	RpAb	NP_000052	Q06187	1	1	8	11		•			
54	NK015	BUB1A	Pan-specific	BUB1 mitotic checkpoint protein-serine kinase	RpAb	NP_004327	O43683	1	1	10	11		•			
55	NN174	CA9	Pan-specific	Carbonic anhydrase 9	RpAb	NP_001207.2	Q16790	1	2	2	1					
56	PN015	Caldesmon	S789	Caldesmon	RpAb	NP_004333	Q05682	1	2	4	1					
57	NN136-2	Calnexin	Pan-specific	Calnexin	RpAb	NP_001019820.1	P27824	1	2	6	1					
58	NN137-1	Calreticulin	Pan-specific	Calreticulin	RpAb	NP_004334.1.	P27797	1	2	8	1					
59	NK211	CAMK1a	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase 1 alpha	GpAb	NP_003647.1	Q14012	1	2	10	1		•			
60	NK016-1	CaMK1d	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase 1 delta	RpAb	NP_003647	Q8IU85	1	2	2	2		•			
61	NK016-2	CaMK1d	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase 1 delta	GpAb	NP_003647	Q8IU85	1	2	4	2	•	•			
62	PK005-1	CaMK2a	T286	Calcium/calmodulin-dependent protein-serine kinase 2 alpha	RpAb	NP_741960	Q9UQM7	1	2	6	2		•			
63	NK018-2	CAMK2b	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase 2 beta	MmAb	NP_742081	Q13554	1	2	8	2		•			
64	NK019-2	CAMK2d	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase 2 delta	RpAb	NP_742126	Q13557	1	2	10	2		•			
65	NK021	CaMK4	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase 4	RpAb	NP_001735	Q16566	1	2	2	3		•			
66	NK021-2	CaMK4	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase 4	RpAb	NP_001735	Q16566	1	2	4	3	•	•			
67	NK021-3	CaMK4	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase 4	RpAb	NP_001735	Q16566	1	2	6	3	•	•			
68	NK022	CaMKK (CaMKK2)	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase kinase	RpAb	NP_006540	Q8N5S9	1	2	8	3		•			

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
69	NN010	CAS	Pan-specific	Cellular apoptosis susceptibility protein (CSE1L)	MmAb	NP_001307	P55060	1	2	10	3					
70	NK023	CASK/Lin2	Pan-specific	Calcium/calmodulin-dependent protein-serine kinase (Lin2 homolog)	MmAb	NP_001119526.1	O14936	1	2	2	4		•			
71	NN011	CASP1	Pan-specific	Caspase 1 (Interleukin-1 beta convertase)	RpAb	NP_001214	P29466	1	2	4	4					
72	NN011-2	CASP1	Pan-specific	Caspase 1 (Interleukin-1 beta convertase)	RpAb	NP_001214	P29466	1	2	6	4	•				
73	NN013	CASP3	Pan-specific	Caspase 3 (apopain, cysteine protease CPP32)	RpAb	NP_004337	P42574	1	2	8	4					
74	NN013-3	CASP3	Pan-specific	Caspase 3 (apopain, cysteine protease CPP32)	RpAb	NP_004337	P42574	1	2	10	4	•				
75	NN016	CASP6	Pan-specific	Caspase 6 (apoptotic protease Mch2)	MmAb	NP_001217	P55212	1	2	2	5					
76	NN017	CASP7	Pan-specific	Caspase 7 (ICE-like apoptotic protease 3 (ICE-LAP3), Mch3)	MmAb	NP_01218	P55210	1	2	4	5					
77	NN017-2	CASP7	Pan-specific	Caspase 7 (ICE-like apoptotic protease 3 (ICE-LAP3), Mch3)	RpAb	NP_01218	P55210	1	2	6	5	•				
78	NN019-2	CASP9	Pan-specific	Caspase 9 (ICE-like apoptotic protease 6 (ICE-LAP6), Mch6, APAF3)	RpAb	NP_033938	P55211	1	2	8	5					
79	PN162	Catenin a	S641	Catenin (cadherin-associated protein) alpha	RpAb	NP_001894.2	P35221	1	2	10	5			•		
80	PN166	Catenin b	S33	Catenin (cadherin-associated protein) beta 1	RpAb	NP_001895	P35222	1	2	2	6			•		
81	PN167	Catenin b	Y333	Catenin (cadherin-associated protein) beta 1	RpAb	NP_001895	P35222	1	2	4	6			•		
82	NN021	Catenin b1	Pan-specific	Catenin (cadherin-associated protein) beta 1	RpAb	NP_001895	P35222	1	2	6	6			•		
83	NN021-1	Catenin b1	Pan-specific	Catenin (cadherin-associated protein) beta 1	RpAb	NP_001895	P35222	1	2	8	6	•		•		
84	NN167	Caveolin 1	Pan-specific	Caveolin 1	RpAb	NP_001744.2	Q03135	1	2	10	6					
85	PN147	Caveolin 1	Y14	Caveolin 1	RpAb	NP_001744.2	Q03135	1	2	2	7					
86	NN022-1	Caveolin 2	Pan-specific	Caveolin 2	MmAb	NP_001224	P51636	1	2	4	7					
87	PN018	Caveolin 2	S36	Caveolin 2	RpAb	NP_001224	P51636	1	2	6	7					
88	PN171	Cbl	Y700	Signal transduction protein CBL	RpAb	NP_005179.2	P22681	1	2	8	7					
89	NP001	CD45	Pan-specific	Leukocyte common antigen CD45 receptor-tyrosine phosphatase (LCA, T200)	MmAb	NP_002829	P08575	1	2	10	7					•
90	NP002	Cdc25B	Pan-specific	Cell division cycle 25B phosphatase	MmAb	NP_004349	P30305	1	2	2	8					•
91	NP003	Cdc25C	Pan-specific	Cell division cycle 25C phosphatase	RpAb	NP_001781	P30307	1	2	4	8					•
92	PP005	Cdc25C	S216	Cell division cycle 25C phosphatase	RpAb	NP_002882.3	P30307	1	2	6	8					•
93	NK024	CDC2L5 (CHED)	Pan-specific	Cell division cycle 2-like protein-serine kinase 5	RpAb	NP_003709	Q14004	1	2	8	8		•			
94	NN023	Cdc34	Pan-specific	Cell division cycle 34 (ubiquitin-conjugating ligase)	MmAb	NP_004350	P49427	1	2	10	8					
95	NN024	Cdc42	Pan-specific	Cell division control protein 42 homolog	MmAb	NP_001782	P60953	1	2	2	9					
96	NK025-1	CDK1 (CDC2)	Pan-specific	Cyclin-dependent protein-serine kinase 1	MmAb	NP_001777	P06493	1	2	4	9		•			
97	NK025-2	CDK1 (CDC2)	Pan-specific	Cyclin-dependent protein-serine kinase 1	MmAb	NP_001777	P06493	1	2	6	9	•	•			
98	NK025-3	CDK1 (CDC2)	Pan-specific	Cyclin-dependent protein-serine kinase 1	MmAb	NP_001777	P06493	1	2	8	9	•	•			
99	NK025-4	CDK1 (CDC2)	Pan-specific	Cyclin-dependent protein-serine kinase 1	RpAb	NP_001777	P06493	1	2	10	9	•	•			
100	NK025-5	CDK1 (CDC2)	Pan-specific	Cyclin-dependent protein-serine kinase 1	MmAb	NP_001777	P06493	1	2	2	10	•	•			
101	NK025-6	CDK1 (CDC2)	Pan-specific	Cyclin-dependent protein-serine kinase 1	RpAb	NP_001777	P06493	1	2	4	10	•	•			
102	PK006	CDK1/2	T14+Y15	Cyclin-dependent protein-serine kinase 1/2	RpAb	NP_001777	P06493	1	2	6	10	•	•			
103	PK007-1	CDK1/2	Y15	Cyclin-dependent protein-serine kinase 1/2	RpAb	NP_001777	P06493	1	2	8	10		•			
104	PK007-2	CDK1/2	Y15	Cyclin-dependent protein-serine kinase 1/2	RpAb	NP_001777	P06493	1	2	10	10	•	•			
105	PK007-3	CDK1/2	Y15	Cyclin-dependent protein-serine kinase 1/2	RpAb	NP_001777	P06493	1	2	2	11	•	•			
106	PK008	CDK1/2	T161	Cyclin-dependent protein-serine kinase 1/2	RpAb	NP_001777	P06493	1	2	4	11		•			
107	NK033	CDK10	Pan-specific	Cyclin-dependent protein-serine kinase 10 [PISSLRE]	RpAb	NP_003665	Q15131	1	2	6	11		•			
108	NK026-2	CDK2	Pan-specific	Cyclin-dependent protein-serine kinase 2	RpAb	NP_001789	P24941	1	2	8	11		•			
109	NK026-3	CDK2	Pan-specific	Cyclin-dependent protein-serine kinase 2	MmAb	NP_001789	P24941	1	2	10	11	•	•			
110	NK026-4	CDK2	Pan-specific	Cyclin-dependent protein-serine kinase 2	RpAb	NP_001789	P24941	1	3	2	1	•	•			
111	NK026-5	CDK2	Pan-specific	Cyclin-dependent protein-serine kinase 2	RpAb	NP_001789	P24941	1	3	4	1	•	•			
112	NK026-6	CDK2	Pan-specific	Cyclin-dependent protein-serine kinase 2	RpAb	NP_001789	P24941	1	3	6	1	•	•			
113	NK026-7	CDK2	Pan-specific	Cyclin-dependent protein-serine kinase 2	MmAb	NP_001789	P24941	1	3	8	1	•	•			
114	NK027	CDK4	Pan-specific	Cyclin-dependent protein-serine kinase 4	MmAb	NP_000066	P11802	1	3	10	1		•			
115	NK027-2	CDK4	Pan-specific	Cyclin-dependent protein-serine kinase 4	RpAb	NP_000066	P11802	1	3	2	2	•	•			
116	NK028-1	CDK5	Pan-specific	Cyclin-dependent protein-serine kinase 5	RpAb	NP_004926	Q00535	1	3	4	2		•			
117	NK028-2	CDK5	Pan-specific	Cyclin-dependent protein-serine kinase 5	RpAb	NP_004926	Q00535	1	3	6	2	•	•			
118	NK028-4	CDK5	Pan-specific	Cyclin-dependent protein-serine kinase 5	RpAb	NP_004926	Q00535	1	3	8	2	•	•			
119	NK028-5	CDK5	Pan-specific	Cyclin-dependent protein-serine kinase 5	MmAb	NP_004926	Q00535	1	3	10	2	•	•			
120	NK029	CDK6	Pan-specific	Cyclin-dependent protein-serine kinase 6	MmAb	NP_001250	Q00534	1	3	2	3		•			
121	NK029-2	CDK6	Pan-specific	Cyclin-dependent protein-serine kinase 6	RpAb	NP_001250	Q00534	1	3	4	3	•	•			
122	NK029-3	CDK6	Pan-specific	Cyclin-dependent protein-serine kinase 6	RpAb	NP_001250	Q00534	1	3	6	3	•	•			
123	PK165	CDK6	Y13	Cyclin-dependent protein-serine kinase 6	RpAb	NP_001250	Q00534	1	3	8	3		•			
124	NK030-2	CDK7	Pan-specific	Cyclin-dependent protein-serine kinase 7	MmAb	NP_001790	P50613	1	3	10	3		•			
125	NK030-3	CDK7	Pan-specific	Cyclin-dependent protein-serine kinase 7	MmAb	NP_001790	P50613	1	3	2	4	•	•			
126	NK031-2	CDK8	Pan-specific	Cyclin-dependent protein-serine kinase 8	RpAb	NP_001252	P49336	1	3	4	4		•			
127	NK031-4	CDK8	Pan-specific	Cyclin-dependent protein-serine kinase 8	RpAb	NP_001252	P49336	1	3	6	4	•	•			
128	NK031-5	CDK8	Pan-specific	Cyclin-dependent protein-serine kinase 8	GpAb	NP_001252	P49336	1	3	8	4	•	•			
129	NK032	CDK9	Pan-specific	Cyclin-dependent protein-serine kinase 9	RpAb	NP_001252	P50750	1	3	10	4		•			
130	NK199	CDKL1	Pan-specific	Cyclin-dependent kinase-like 1	RpAb	NP_004187.2	Q00532	1	3	2	5		•			
131	NK034	Chk1	Pan-specific	Checkpoint protein-serine kinase 1	MmAb	NP_001265	O14757	1	3	4	5		•			
132	NK034-2	Chk1	Pan-specific	Checkpoint protein-serine kinase 1	RpAb	NP_001265	O14757	1	3	6	5	•	•			
133	PK162	Chk1	S280	Checkpoint protein-serine kinase 1	RpAb	NP_001265	O14757	1	3	8	5		•			
134	NK035	Chk2	Pan-specific	Checkpoint protein-serine kinase 2	RpAb	NP_009125	O96017	1	3	10	5		•			
135	PK119	Chk2	T68	Checkpoint protein-serine kinase 2	RpAb	NP_009125	O96017	1	3	2	6		•			
136	NN025	c-IAP1	Pan-specific	Cellular inhibitor of apoptosis protein 1 (baculoviral IAP repeat-containing protein 3, apoptosis inhibitor 2 (API2))	RpAb	NP_001156	Q13490	1	3	4	6					
137	NK036	CK1d	Pan-specific	Casein protein-serine kinase 1 delta	GpAb	NP_001884	P48730	1	3	6	6		•			
138	NK037-1	CK1e	Pan-specific	Casein protein-serine kinase 1 epsilon	MmAb	NP_001885	P49674	1	3	8	6		•			
139	NK198	CK1g	Pan-specific	Casein kinase I gamma 1 isoform	RpAb	NP_071331	Q8IXA3	1	3	10	6		•			
140	NK040	CK1g2	Pan-specific	Casein protein-serine kinase 1 gamma 2	RpAb	NP_001310	P78368	1	3	2	7		•			
141	NK041	CK2a	Pan-specific	Casein protein-serine kinase 2 alpha/ alpha prime	RpAb	NP_001887	P68400	1	3	4	7		•			
142	PK167	CK2a	T360/S362	Casein protein-serine kinase 2 alpha/ alpha prime	RpAb	NP_001887	P68400	1	3	6	7		•			
143	PN130	c-Myc	T58/S62	Myc proto-oncogene protein	RpAb	NP_002458.2	P01106	1	3	8	7			•		
144	NN026	Cofilin 1	Pan-specific	Cofilin 1	MmAb	NP_005498	P23528	1	3	10	7					
145	PN019	Cofilin 1	S3	Cofilin 1	RpAb	NP_005498	P23528	1	3	2	8					
146	PN020	Cofilin 2	S3	Cofilin 2	RpAb	NP_068733	Q9Y281	1	3	4	8					
147	PN148	Connexin 43	S368	Gap junction alpha-1 protein	RpAb	NP_000156.1	P17302	1	3	6	8					
148	PN022-2	Cortactin	Y466	Cortactin (amplaxin) (mouse)	RpAb	NP_031829	Q14247	1	3	8	8					

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
149	NK042	COT	Pan-specific	Osaka thyroid oncogene protein-serine kinase (Tpl2)	RpAb	NP_005195	P41279	1	3	10	8		•			
150	NK042-2	COT	Pan-specific	Osaka thyroid oncogene protein-serine kinase (Tpl2)	RpAb	NP_005195	P41279	1	3	2	9	•	•			
151	NN027	COX2	Pan-specific	Cyclo-oxygenase 2 (prostaglandin G/H synthase 2 precursor)	MmAb	NP_000954	P35354	1	3	4	9					
152	NK043	CPG16/CaMKinase VI	Pan-specific	Serine/threonine-protein kinase DCAMKL1	MmAb	NP_004725	O15075	1	3	6	9		•			
153	PN023	CREB1	S129+S133	cAMP response element binding protein 1	RpAb	NP_004370	P16220	1	3	8	9			•		
154	PN024	CREB1	S133	cAMP response element binding protein 1	RpAb	NP_004370	P16220	1	3	10	9			•		
155	PN024-2	CREB1	S133	cAMP response element binding protein 1	RpAb	NP_004370	P16220	1	3	2	10	•		•		
156	NN149-1	Crystallin aB	Pan-specific	Crystallin alpha B (heat-shock 20 kDa like-protein)	RpAb	NP_001876	P02511	1	3	4	10				•	
157	NN149-2	Crystallin aB	Pan-specific	Crystallin alpha B (heat-shock 20 kDa like-protein)	MmAb	NP_001876	P02511	1	3	6	10	•			•	
158	NN149-3	Crystallin aB	Pan-specific	Crystallin alpha B (heat-shock 20 kDa like-protein)	MmAb	NP_001876	P02511	1	3	8	10				•	
159	PN025	Crystallin aB	S19	Crystallin alpha B (heat-shock 20 kDa like-protein)	RpAb	NP_001876	P02511	1	3	10	10				•	
160	PN110	Crystallin aB	S45	Crystallin alpha B (heat-shock 20 kDa like-protein)	RpAb	NP_001876	P02511	1	3	2	11				•	
161	NK044	Csk	Pan-specific	C-terminus of Src tyrosine kinase	MmAb	NP_004374	P41240	1	3	4	11		•			
162	NK044-2	Csk	Pan-specific	C-terminus of Src tyrosine kinase	RpAb	NP_004374	P41240	1	3	6	11	•	•			
163	NN028	Cyclin A	Pan-specific	Cyclin A1	RpAb	NP_003905	P78396	1	3	8	11					
164	NN029	Cyclin B1	Pan-specific	Cyclin B1	MmAb	NP_114172	P14635	1	3	10	11					
165	PN190	Cyclin B1	S147	Cyclin B1	RpAb	NP_114172	P14635	1	4	2	1					
166	NN030-1	Cyclin D1	Pan-specific	Cyclin D1 (PRAD1)	RmAb	NP_444284	P24385	1	4	4	1					
167	NN030-2	Cyclin D1	Pan-specific	Cyclin D1 (PRAD1)	RpAb	NP_444284	P24385	1	4	6	1	•				
168	NN031	Cyclin E	Pan-specific	Cyclin E1	MmAb	NP_001229	P24864	1	4	8	1					
169	PN191	Cyclin E	T395	Cyclin E1	RpAb	NP_001229	P24864	1	4	10	1					
170	NN032	Cyclin G1	Pan-specific	Cyclin G1	RpAb	NP_004051	P51959	1	4	2	2					
171	NN033	CytoC	Pan-specific	Cytochrome C	RpAb	NP_061820	P99999	1	4	4	2					
172	PN026	Dab1	Y198	Disabled homolog 1	RpAb	NP_066566	O75553	1	4	6	2					
173	NK210	DAPK1	Pan-specific	Death-associated protein kinase 1	RpAb	NP_004929	P53355	1	4	8	2		•			
174	NK046	DAPK2	Pan-specific	Death-associated protein kinase 2	RpAb	NP_055141	Q9UIK4	1	4	10	2		•			
175	NN034	DAXX	Pan-specific	Death-associated protein 6 (BING2)	RpAb	NP_001341	Q9UER7	1	4	2	3					
176	NN163	DDIT3(CHOP)	Pan-specific	DNA damage-inducible transcript 3 protein	MmAb	NP_001181986.1	P35639	1	4	4	3					
177	NN035-NN126	DFF35	Pan-specific	DNA fragmentation factor alpha (ICAD) 35-kDa subunit	MmAb	NP_004392	O00273	1	4	6	3					
178	NK219	DGKz	Pan-specific	Diacylglycerol kinase zeta	RpAb	NP_963290	Q13574	1	4	8	3					
179	NK048	DNAPK	Pan-specific	DNA-activated protein-serine kinase	RpAb	NP_008835	P78527	1	4	10	3		•			
180	NK048-2	DNAPK	Pan-specific	DNA-activated protein-serine kinase	MmAb	NP_008835	P78527	1	4	2	4	•	•			
181	PN027	Dok2	Y139	Docking protein 2	RpAb	NP_034201	O60496	1	4	4	4					
182	PN027-2	Dok2	Y139	Docking protein 2	RpAb	NP_034201	O60496	1	4	6	4	•				
183	NK050	DRAK2	Pan-specific	DAP kinase-related apoptosis-inducing protein-serine kinase 2 (STK17B)	RpAb	NP_004217	O94768	1	4	8	4		•			
184	NK051	eEF2K	Pan-specific	Elongation factor-2 protein-serine kinase	RpAb	NP 037434	O00418	1	4	10	4		•			
185	NN175	EFNA5	Pan-specific	Ephrin-A5	RpAb	NP_001953.1	P52803	1	4	2	5					
186	PN173	EFNB2	Y316	EPH-related receptor tyrosine kinase ligand 5	RpAb	NP_004084.1	P52799	1	4	4	5		•			
187	NK052-1	EGFR	Pan-specific	Epidermal growth factor receptor-tyrosine kinase	RpAb	NP_005219	P00533	1	4	6	5		•			
188	PK010	EGFR	Y1172	Epidermal growth factor receptor-tyrosine kinase	RpAb	NP_005219	P00533	1	4	8	5		•			
189	PK010-2	EGFR	Y1172	Epidermal growth factor receptor-tyrosine kinase	RpAb	NP_005219	P00533	1	4	10	5	•	•			
190	PK011-1	EGFR	Y1197	Epidermal growth factor receptor-tyrosine kinase	RpAb	NP_005219	P00533	1	4	2	6		•			
191	PK121	EGFR	T693	Epidermal growth factor receptor-tyrosine kinase	RpAb	NP_005219	P00533	1	4	4	6		•			
192	PK122-1	EGFR	Y1092	Epidermal growth factor receptor-tyrosine kinase	RpAb	NP_005219	P00533	1	4	6	6		•			
193	PK123	EGFR	Y1110	Epidermal growth factor receptor-tyrosine kinase	RpAb	NP_005219	P00533	1	4	8	6		•			
194	NN038-1	eIF2a	Pan-specific	Eukaryotic translation initiation factor 2 alpha	RpAb	NP_004085	P05198	1	4	10	6					
195	PN028-1	eIF2a	S52	Eukaryotic translation initiation factor 2 alpha	RpAb	NP_004085	P05198	1	4	2	7					
196	PN028-2	eIF2a	S52	Eukaryotic translation initiation factor 2 alpha	RpAb	NP_004085	P05198	1	4	4	7	•				
197	PN172	eIF4B	S422	Eukaryotic translation initiation factor 4B	RpAb	NP_001408.2	P23588	1	4	6	7					
198	NN039-1	eIF4E	Pan-specific	Eukaryotic translation initiation factor 4 (mRNA cap binding protein)	MmAb	NP_001959	P06730	1	4	8	7					
199	PN030-1	eIF4E	S209	Eukaryotic translation initiation factor 4 (mRNA cap binding protein)	RpAb	NP_001959	P06730	1	4	10	7					
200	PN030-2	eIF4E	S209	Eukaryotic translation initiation factor 4 (mRNA cap binding protein)	RpAb	NP_001959	P06730	1	4	2	8	•				
201	PN031	eIF4G	S1107	Eukaryotic translation initiation factor 4 gamma 1	RpAb	NP_004944	Q04637	1	4	4	8					
202	PN193	eIF4G	S1232	Eukaryotic translation initiation factor 4 gamma 1	RpAb	NP_004944	Q04637	1	4	6	8					
203	NN168	Elk-1	Pan-specific	ETS domain-containing protein Elk-1	RpAb	NP_001107595.1	P19419	1	4	8	8			•		
204	PN149	Elk-1	S383	ETS domain-containing protein Elk-1	RpAb	NP_001107595.1	P19419	1	4	10	8			•		
205	PN170	Elk-1	S389	ETS domain-containing protein Elk-1	RpAb	NP_001107595.1	P19419	1	4	2	9			•		
206	NN173	Epcam	Pan-specific	Epithelial cell adhesion molecule	RpAb	NP_002345.2	P16422	1	4	4	9					
207	NK053	EphA1	Pan-specific	Ephrin type-A receptor 1 protein-tyrosine kinase	RpAb	NP_005223	P21709	1	4	6	9		•			
208	PN198	ER-alpha	S104	estrogen receptor alpha	RpAb	NP_000116.2	P03372	1	4	8	9			•		
209	NK054-1	ErbB2 (HER2)	Pan-specific	ErbB2 (Neu) receptor-tyrosine kinase	MmAb	NP_004439	P04626	1	4	10	9		•			
210	NK054-2	ErbB2 (HER2)	Pan-specific	ErbB2 (Neu) receptor-tyrosine kinase	RpAb	NP_004439	P04626	1	4	2	10	•	•			
211	PK013-1	ErbB2 (HER2)	Y1248	ErbB2 (Neu) receptor-tyrosine kinase	RpAb	NP_004439	P04626	1	4	4	10		•			
212	PK013-2	ErbB2 (HER2)	Y1248	ErbB2 (Neu) receptor-tyrosine kinase	RpAb	NP_004439	P04626	1	4	6	10	•	•			
213	PK134	ErbB2 (HER2)	T686	ErbB2 (Neu) receptor-tyrosine kinase	RpAb	NP_004439	P04626	1	4	8	10		•			
214	PK163	ErbB3	Y1328	Tyrosine kinase-type cell surface receptor HER3	RpAb	NP_001005915.1	P21860	1	4	10	10		•			
215	NK055-NK056	Erk1 + Erk2	Pan-specific	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)+Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	\36142.1, NP_002	P27361	1	4	4	11		•			
216	NK055-NK056-2	Erk1 + Erk2	Pan-specific	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)+Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	\36142.1, NP_002	P27361	1	4	6	11	•	•			
217	NK055-NK056-4	Erk1 + Erk2	Pan-specific	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)+Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	\36142.1, NP_002	P27361	1	4	8	11	•	•			
218	NK055-NK056-5	Erk1 + Erk2	Pan-specific	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)+Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	\36142.1, NP_002	P27361	1	4	10	11	•	•			
219	NK055-NK056-6	Erk1 + Erk2	Pan-specific	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)+Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	\36142.1, NP_002	P27361	2	1	2	1	•	•			
220	NK055-NK056-8	Erk1 + Erk2	Pan-specific	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)+Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	\36142.1, NP_002	P27361	2	1	4	1	•	•			
221	PK168-PK169	Erk1 + Erk2	Y204	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)+Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	\36142.1, NP_002	P27361	2	1	6	1		•			
222	PK170-PK171	Erk1 + Erk2	T202	Extracellular regulated protein-serine kinase 1 (p44 MAP kinase)+Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	\36142.1, NP_002	P27361	2	1	8	1		•			

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
223	NK056	Erk2	Pan-specific	Extracellular regulated protein-serine kinase 2 (p42 MAP kinase)	RpAb	NP_002736	P28482	2	1	10	1		•			
224	NK057-2	Erk3	Pan-specific	Extracellular regulated protein-serine kinase 3	RpAb	NP_002739	Q16659	2	1	2	2		•			
225	NK058	Erk4	Pan-specific	Extracellular regulated protein-serine kinase 4	RpAb	NP_002738	Q13164	2	1	4	2		•			
226	NK206-1	Erk5	Pan-specific	Extracellular regulated protein-serine kinase 5 (Big MAP kinase 1 (BMK1))	RpAb	NP_620602	Q13164	2	1	6	2		•			
227	NK206-2	Erk5	Pan-specific	Extracellular regulated protein-serine kinase 5 (Big MAP kinase 1 (BMK1))	RpAb	NP_620602	Q13164	2	1	8	2	•	•			
228	NK206-3	Erk5	Pan-specific	Extracellular regulated protein-serine kinase 5 (Big MAP kinase 1 (BMK1))	GpAb	NP_620602	Q13164	2	1	10	2	•	•			
229	PK016	Erk5	T218+Y220	Extracellular regulated protein-serine kinase 5 (Big MAP kinase 1 (BMK1))	RpAb	NP_620602	Q13164	2	1	2	3		•			
230	PK016-3	Erk5	T218+Y220	Extracellular regulated protein-serine kinase 5 (Big MAP kinase 1 (BMK1))	RpAb	NP_620602	Q13164	2	1	4	3	•	•			
231	NN040	ERP57	Pan-specific	ER protein 57 kDa (protein disulfide isomerase-associated 3; 58 kDa glucose regulated protein)	MmAb	NP_005304	P30101	2	1	6	3					
232	NN041	ERP72	Pan-specific	ER protein 72 kDa (protein disulfide isomerase-associated 4)	RpAb	NP_004902	P13667	2	1	8	3					
233	PN174	Ezrin	T567	cytovillin 2	RpAb	NP_001104547.1	P15311	2	1	10	3					
234	PN175	Ezrin	Y353	cytovillin 2	RpAb	NP_001104547.1	P15311	2	1	2	4					
235	NK060	FAK	Pan-specific	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	4	4		•			
236	PK017	FAK	Y397	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	6	4		•			
237	PK017-1	FAK	Y397	Focal adhesion protein-tyrosine kinase	MmAb	NP_005598	Q05397	2	1	8	4	•	•			
238	PK018-3	FAK	Y576	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	10	4		•			
239	PK020	FAK	S722	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	2	5		•			
240	PK020-3	FAK	S722	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	4	5	•	•			
241	PK021	FAK	S732	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	6	5		•			
242	PK022-2	FAK	S8431	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	8	5		•			
243	PK024	FAK	S910	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	10	5		•			
244	PK151	FAK	Y576/Y577	Focal adhesion protein-tyrosine kinase	RpAb	NP_005598	Q05397	2	1	2	6		•			
245	NN042	FAS	Pan-specific	Tumor necrosis factor superfamily member 6 (Apo1, CD95)	RpAb	NP_003789	P25445	2	1	4	6					
246	NN043	FasL	Pan-specific	Tumor necrosis factor ligand, member 6	MmAb	NP_000630	P48023	2	1	6	6					
247	NK061	Fes	Pan-specific	Fes/Fps protein-tyrosine kinase	RpAb	NP_001996	P07332	2	1	8	6		•			
248	NN172	FHL2	Pan-specific	Four and a half LIM domains protein 2	RpAb	NP_001034581.1	Q14192	2	1	10	6					
249	NN127	FKBP52	Pan-specific	FK506-binding protein 4	MmAb	NP_002005	Q02790	2	1	2	7					
250	PN194	FKHR	S256	Forkhead box protein O1	RpAb	NP_002006.2	Q12778	2	1	4	7			•		
251	PN195	FKHR	S319	Forkhead box protein O1	RpAb	NP_002006.2	Q12778	2	1	6	7			•		
252	PN145-PN032	FKHRL1	T32	Forkhead-like transcription factor 1 (FOXO3A)	RpAb	NP_001446	O43524	2	1	8	7			•		
253	N145-PN032-PN1	FKHRL1	T32	Forkhead-like transcription factor 1 (FOXO3A)	RmAb	NP_001446	O43524	2	1	10	7	•		•		
254	NN044	Fos	Pan-specific	Fos-c FBJ murine osteosarcoma oncoprotein-related transcription factor	RpAb	NP_005243	P01100	2	1	2	8			•		
255	PN033	Fos	T232	Fos-c FBJ murine osteosarcoma oncoprotein-related transcription factor	RpAb	NP_005243	P01100	2	1	4	8			•		
256	PN146	FRS2	Y348	Fibroblast growth factor receptor substrate 2	RpAb	NP_001036020.1	Q8WU20	2	1	6	8					
257	NK065	Fyn	Pan-specific	Fyn proto-oncogene-encoded protein-tyrosine kinase	MmAb	NP_002028	P06241	2	1	8	8		•			
258	PN192	Gab1	Y627	GRB2-associated binder 1	RpAb	NP_002030.2	Q13480	2	1	10	8					
259	PN098	GAP-43	S41	Growth associated protein 43 (Neuromodulin)	RpAb	NP_002036	P17677	2	1	2	9					
260	PN196	GATA1	S142	Erythroid transcription factor	RpAb	NP_002040.1	P15976	2	1	4	9			•		
261	NK066	GCK	Pan-specific	Germinal centre protein-serine kinase	GpAb	NP_004570	Q12851	2	1	6	9		•			
262	PN034	GFAP	S8	Glial fibrillary acidic protein	MmAb	NP_002046	P14136	2	1	8	9					
263	PN178	GluR1	S849	Glutamate receptor 1	RpAb	NP_000818.2	P42261	2	1	10	9					
264	NN045	GNB2L1	Pan-specific	Guanine nucleotide-binding protein beta (receptor for activated C kinase 1 (RACK1))	RpAb	NP_006089	P63244	2	1	2	10					
265	NK067	GRK2 (BARK1)	Pan-specific	G protein-coupled receptor-serine kinase 2	RpAb	NP_001610	P25098	2	1	4	10		•			
266	PK025	GRK2 (BARK1)	S670	G protein-coupled receptor-serine kinase 2	RpAb	NP_001610	P25098	2	1	6	10		•			
267	NK068	GRK3 (BARK2)	Pan-specific	G protein-coupled receptor-serine kinase 3	RpAb	NP_005151	P35626	2	1	8	10		•			
268	NN046	GroEL	Pan-specific	GroEL homolog (may correspond to Hsp60)	RpAb	NP_002147	P10809	2	1	10	10				•	
269	NN047	Grp75	Pan-specific	Glucose regulated protein 75	MmAb	NP_004125	P38646	2	1	2	11				•	
270	NN048	Grp78	Pan-specific	Glucose regulated protein 78	RpAb	NP_005338	P11021	2	1	4	11				•	
271	NN048-2	Grp78	Pan-specific	Glucose regulated protein 78	RpAb	NP_005338	P11021	2	1	6	11	•			•	
272	NN049	Grp94	Pan-specific	Glucose regulated protein 94 (endoplasmin)	RpAb	NP_003290	P14625	2	1	8	11				•	
273	NK069-NK070	GSK3a	Pan-specific	Glycogen synthase-serine kinase 3 alpha	MmAb	NP_063937	P49840	2	1	10	11		•			
274	NK069-NK070-2	GSK3a	Pan-specific	Glycogen synthase-serine kinase 3 alpha	MmAb	NP_063937	P49840	2	2	2	1	•	•			
275	PK026-PK027-1	GSK3a	S21	Glycogen synthase-serine kinase 3 alpha	RpAb	NP_063937	P49840	2	2	4	1		•			
276	PK028-PK029-1	GSK3a	Y279	Glycogen synthase-serine kinase 3 alpha	RpAb	NP_063937	P49840	2	2	6	1		•			
277	NK070	GSK3b	Pan-specific	Glycogen synthase-serine kinase 3 beta	RpAb	NP_002084	P49841	2	2	8	1		•			
278	NK070-1	GSK3b	Pan-specific	Glycogen synthase-serine kinase 3 beta	RpAb	NP_002084	P49841	2	2	10	1	•	•			
279	NK071	Haspin	Pan-specific	Haploid germ cell-specific nuclear protein-serine kinase	RpAb	NP_114171	Q8TF76	2	2	2	2		•			
280	NN169	HDAC4	Pan-specific	Histone deacetylase 4	RpAb	NP_006028.2	Q13480	2	2	4	2					
281	N179-PN180-PN1	HDAC4	S246	Histone deacetylase 4	RpAb	NP_006028.2	Q13480	2	2	6	2					
282	PN188	HDAC5	S498	Histone deacetylase 5	RpAb	NP_001015053.1	Q9UQL6	2	2	8	2					
283	NN050	hHR23B	Pan-specific	UV excison repair protein RAD23 homolog B	MmAb	NP_002865	P54727	2	2	10	2					
284	NN051	Hip	Pan-specific	Hsp70/Hsc70 interacting protein (ST13)	RpAb	NP_003923	P50502	2	2	2	3				•	
285	PN035	Histone H1	iospho CDK1 sit	Histone H1 phosphorylated	RpAb	NP_005316	Q02539	2	2	4	3					
286	PN036	Histone H2A.X	S140	Histone H2A variant X	MmAb	NP_002096	P16104	2	2	6	3					
287	PN037	Histone H2B	S15	Histone H2B	RpAb	NP_778225	P33778	2	2	8	3					
288	PN038	Histone H3	S11	Histone H3.3	RpAb	NP_003521	P84243	2	2	10	3					
289	PN039	Histone H3	S29	Histone H3.3	RpAb	NP_003521	P84243	2	2	2	4					
290	PN100	Histone H3	T12	Histone H3.3	RpAb	NP_003521	P84243	2	2	4	4					
291	PN101	Histone H3	T4	Histone H3.3	RpAb	NP_003521	P84243	2	2	6	4					
292	PN101-2	Histone H3	T4	Histone H3.3	RmAb	NP_003521	P84243	2	2	8	4	•				
293	NN052	HO1	Pan-specific	Heme oxygenase 1	RpAb	NP_002124	P09601	2	2	10	4				•	
294	NN053	HO2	Pan-specific	Heme oxygenase 2	RpAb	NP_002125	P30519	2	2	2	5				•	
295	NK072	Hpk1	Pan-specific	Hematopoetic progenitor protein-serine kinase 1	GpAb	NP_009112	Q92918	2	2	4	5		•			
296	NN054	Hsc70	Pan-specific	Heat shock 70 kDa protein 8	MmAb	NP_006588	P11142	2	2	6	5				•	
297	NN054-2	Hsc70	Pan-specific	Heat shock 70 kDa protein 8	RpAb	NP_006588	P11142	2	2	8	5	•			•	
298	NN055	HSF4	Pan-specific	Heat shock transcription factor 4	MmAb	NP_001529	Q9ULV5	2	2	10	5				•	
299	NN062	Hsp105	Pan-specific	Heat shock 105 kDa protein	RpAb	NP_006635	Q92598	2	2	2	6				•	
300	NN152-1	Hsp27	Pan-specific	Heat shock 27 kDa protein beta 1 (HspB1)	RpAb	NP_001531	P04792	2	2	4	6				•	
301	PN040-1	Hsp27	S15	Heat shock 27 kDa protein beta 1 (HspB1)	RpAb	NP_001531	P04792	2	2	6	6				•	

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
302	PN040-2	Hsp27	S15	Heat shock 27 kDa protein beta 1 (HspB1)	RpAb	NP_001531	P04792	2	2	8	6	•			•	
303	PN041	Hsp27	S78	Heat shock 27 kDa protein beta 1 (HspB1)	RpAb	NP_001531	P04792	2	2	10	6				•	
304	PN042-1	Hsp27	S82	Heat shock 27 kDa protein beta 1 (HspB1)	RpAb	NP_001531	P04792	2	2	2	7				•	
305	PN042-2	Hsp27	S82	Heat shock 27 kDa protein beta 1 (HspB1)	RpAb	NP_001531	P04792	2	2	4	7	•			•	
306	PN042-3	Hsp27	S82	Heat shock 27 kDa protein beta 1 (HspB1)	RpAb	NP_001531	P04792	2	2	6	7	•			•	
307	NN057	Hsp40	Pan-specific	DnaJ homolog, subfamily B member 1	MmAb	NP_006136	P25685	2	2	8	7				•	
308	NN057-2	Hsp40	Pan-specific	DnaJ homolog, subfamily B member 1	MmAb	NP_006136	P25685	2	2	10	7	•			•	
309	NN057-3	Hsp40	Pan-specific	DnaJ homolog, subfamily B member 1	RpAb	NP_006136	P25685	2	2	2	8	•			•	
310	NN058	Hsp47	Pan-specific	Heat shock 47 kDa protein (collagen-binding protein 1, colligin 1)	MmAb	NP_001226	P29043	2	2	4	8				•	
311	NN059-1	Hsp60	Pan-specific	Heat shock 60 kDa protein 1 (chaperonin, CPN60)	MmAb	NP_002147	P10809	2	2	6	8				•	
312	NN059-2	Hsp60	Pan-specific	Heat shock 60 kDa protein 1 (chaperonin, CPN60)	MmAb	NP_002147	P10809	2	2	8	8	•			•	
313	NN059-3	Hsp60	Pan-specific	Heat shock 60 kDa protein 1 (chaperonin, CPN60)	MmAb	NP_002147	P10809	2	2	10	8	•			•	
314	NN060	Hsp70	Pan-specific	Heat shock 70 kDa protein 1	MmAb	NP_005336	P08107	2	2	2	9				•	
315	NN060-2	Hsp70	Pan-specific	Heat shock 70 kDa protein 1	MmAb	NP_005336	P08107	2	2	4	9	•			•	
316	NN060-3	Hsp70	Pan-specific	Heat shock 70 kDa protein 1	RpAb	NP_005336	P08107	2	2	6	9	•			•	
317	NN164	Hsp90a	Pan-specific	Heat shock 90 kDa protein alpha	MmAb	NP_005339	P07900	2	2	8	9				•	
318	NN061	Hsp90a/b	Pan-specific	Heat shock 90 kDa protein alpha/beta	MmAb	NP_005339	P07900	2	2	10	9				•	
319	NN061-16	Hsp90a/b	Pan-specific	Heat shock 90 kDa protein alpha/beta	RpAb	NP_005339	P07900	2	2	2	10	•			•	
320	NN061-2	Hsp90a/b	Pan-specific	Heat shock 90 kDa protein alpha/beta	MmAb	NP_005339	P07900	2	2	4	10	•			•	
321	NN061-3	Hsp90a/b	Pan-specific	Heat shock 90 kDa protein alpha/beta	MmAb	NP_005339	P07900	2	2	6	10	•			•	
322	NN061-4	Hsp90a/b	Pan-specific	Heat shock 90 kDa protein alpha/beta	MmAb	NP_005339	P07900	2	2	8	10	•			•	
323	NN165	Hsp90b	Pan-specific	Heat shock 90 kDa protein beta	MmAb	NP_031381	P08238	2	2	10	10				•	
324	NN165-1	Hsp90b	Pan-specific	Heat shock 90 kDa protein beta	RpAb	NP_031381	P08238	2	2	2	11	•			•	
325	PN176	Hsp90b	S254	Heat shock 90 kDa protein beta	RpAb	NP_031381	P08238	2	2	4	11				•	
326	NN063	HspBP1	Pan-specific	Hsp70 binding protein 1	MmAb	NP_036399	O95351	2	2	6	11				•	
327	PN103	Huntingtin	S421	Huntington's disease protein	RpAb	NP_002102	P42858	2	2	8	11					
328	NN130	I1PP2A	Pan-specific	Acidic leucine-rich nuclear phosphoprotein 32 family member A	RpAb	NP_006296	P39687	2	2	10	11					
329	NN131	I2PP2A	Pan-specific	Protein SET	RpAb	NP_003002	Q01105	2	3	2	1					
330	NK073	ICK	Pan-specific	Intestinal cell protein-serine kinase (MAK-related kinase (MRK)	RpAb	NP_057597	Q9UPZ9	2	3	4	1		•			
331	NK074	IGF1R	Pan-specific	Insulin-like growth factor 1 receptor protein-tyrosine kinase	RpAb	NP_000866	P08069	2	3	6	1		•			
332	PK152	IGF1R	Y1280	Insulin-like growth factor 1 receptor protein-tyrosine kinase	RpAb	NP_000866	P08069	2	3	8	1		•			
333	PK153	IGF1R	Y1165/Y1166	Insulin-like growth factor 1 receptor protein-tyrosine kinase	RpAb	NP_000866	P08069	2	3	10	1		•			
334	PK139	IGF1Rb/IRb	Y1161/Y1185	Insulin-like growth factor 1 /Insulin receptorreceptor beta	RpAb	NP_000866	P08069	2	3	2	2		•			
335	NN064	IkBa	Pan-specific	Inhibitor of NF-kappa-B alpha (MAD3)	RpAb	NP_065390	P25963	2	3	4	2					
336	NN064-2	IkBa	Pan-specific	Inhibitor of NF-kappa-B alpha (MAD3)	RpAb	NP_065390	P25963	2	3	6	2	•				
337	NN064-4	IkBa	Pan-specific	Inhibitor of NF-kappa-B alpha (MAD3)	RpAb	NP_065390	P25963	2	3	8	2	•				
338	PN164	IkBa	Y42	Inhibitor of NF-kappa-B alpha (MAD3)	RpAb	NP_065390	P25963	2	3	10	2					
339	NN065	IkBb	Pan-specific	Inhibitor of NF-kappa-B beta (thyroid receptor interacting protein 9)	RpAb	NP_002494	Q15653	2	3	2	3					
340	PN168	IkBe	S22	NF-kappa-B inhibitor epsilon	RpAb	NP_004547.2	O00221	2	3	4	3					
341	NK075-1	IKKa	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	RpAb	NP_001269	O15111	2	3	6	3		•			
342	NK075-2	IKKa	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	MmAb	NP_001269	O15111	2	3	8	3	•	•			
343	NK075-3	IKKa	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	RpAb	NP_001269	O15111	2	3	10	3	•	•			
344	NK075-4	IKKa	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	RpAb	NP_001269	O15111	2	3	2	4	•	•			
345	NK075-5	IKKa	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	RpAb	NP_001269	O15111	2	3	4	4	•	•			
346	NK075-6	IKKa	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	MmAb	NP_001269	O15111	2	3	6	4	•	•			
347	PK030-PK031	IKKa	S180	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	RpAb	NP_001269	O15111	2	3	8	4		•			
348	PK154	IKKa	T23	Inhibitor of NF-kappa-B protein-serine kinase alpha (CHUK)	RpAb	NP_001269	O15111	2	3	10	4		•			
349	NK076-1	IKKb	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase beta	RpAb	NP_001547	O14920	2	3	2	5		•			
350	NK076-2	IKKb	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase beta	RpAb	NP_001547	O14920	2	3	4	5	•	•			
351	NK076-3	IKKb	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase beta	RpAb	NP_001547	O14920	2	3	6	5		•			
352	NK076-4	IKKb	Pan-specific	Inhibitor of NF-kappa-B protein-serine kinase beta	MmAb	NP_001547	O14920	2	3	8	5	•	•			
353	NN161	IKKg (NEMO)	Pan-specific	I-kappa-B kinase gamma/NF-kappa-B essential modulator	MmAb	NP_003630	Q9Y6K9	2	3	10	5		•			
354	NK078-2	ILK1	Pan-specific	Integrin-linked protein-serine kinase 1	RpAb	NP_034692	Q13418	2	3	2	6		•			
355	NK078-3	ILK1	Pan-specific	Integrin-linked protein-serine kinase 1	RpAb	NP_034692	Q13418	2	3	4	6	•	•			
356	PN043	Integrin a4	S1027	Integrin alpha 4 (VLA4)	RpAb	NP_000876	P13612	2	3	6	6					
357	PN044	Integrin b1	S785	Integrin beta 1 (fibronectin receptor beta subunit, CD29 antigen)	RpAb	NP_002202	P05556	2	3	8	6					
358	NK079	IR	Pan-specific	Insulin receptor beta chain	MmAb	NP_000199	P06213	2	3	10	6		•			
359	PK032-1	IR (INSR)	Y999	Insulin receptor	RpAb	NP_000199	P06213	2	3	2	7		•			
360	PK033	IR/IGF1R (INSR)	Y1189/Y1190	Insulin receptor / Insulin-like growth factor 1 receptor	RpAb	NP_000866	P06213	2	3	4	7		•			
361	NK080	IRAK1	Pan-specific	Interleukin 1 receptor-associated kinase 1 (Pelle-like protein kinase)	RpAb	NP_001560	P51617	2	3	6	7		•			
362	NK080-2	IRAK1	Pan-specific	Interleukin 1 receptor-associated kinase 1 (Pelle-like protein kinase)	RpAb	NP_001560	P51617	2	3	8	7	•	•			
363	NK081	IRAK2	Pan-specific	Interleukin 1 receptor-associated kinase 2	RpAb	NP_001561	O43187	2	3	10	7		•			
364	NK081-2	IRAK2	Pan-specific	Interleukin 1 receptor-associated kinase 2	RpAb	NP_001561	O43187	2	3	2	8	•	•			
365	NK082	IRAK3	Pan-specific	Interleukin 1 receptor-associated kinase 3	RpAb	NP_009130	Q9Y616	2	3	4	8		•			
366	NK083-1	IRAK4	Pan-specific	Interleukin 1 receptor-associated kinase 4	RpAb	NP_057207	Q9NWZ3	2	3	6	8		•			
367	NK083-2	IRAK4	Pan-specific	Interleukin 1 receptor-associated kinase 4	RpAb	NP_057207	Q9NWZ3	2	3	8	8	•	•			
368	PN045	IRS1	Y612	Insulin receptor substrate 1	RpAb	NP_005535	P35568	2	3	10	8					
369	PN046-2	IRS1	Y1179	Insulin receptor substrate 1	RpAb	NP_005535	P35568	2	3	2	9					
370	PN117	IRS1	S312	Insulin receptor substrate 1	RpAb	NP_005535	P35568	2	3	4	9					
371	PN118	IRS1	S639	Insulin receptor substrate 1	RpAb	NP_005535	P35568	2	3	6	9					
372	NK084-1	JAK1	Pan-specific	Janus protein-tyrosine kinase 1	RpAb	NP_002218	P23458	2	3	8	9		•			
373	NK084-2	JAK1	Pan-specific	Janus protein-tyrosine kinase 1	RpAb	NP_002218	P23458	2	3	10	9	•	•			
374	PK126	JAK1	Y1034	Janus protein-tyrosine kinase 1	RpAb	NP_002218	P23458	2	3	2	10		•			
375	NK085	JAK2	Pan-specific	Janus protein-tyrosine kinase 2	RpAb	NP_004963	O60674	2	3	4	10		•			
376	PK034-1	JAK2	Y1007+Y1008	Janus protein-tyrosine kinase 2	RpAb	NP_004963	O60674	2	3	6	10		•			
377	PK034-2	JAK2	Y1007+Y1008	Janus protein-tyrosine kinase 2	RpAb	NP_004963	O60674	2	3	8	10	•	•			
378	NK086	JAK3	Pan-specific	Janus protein-tyrosine kinase 3	MmAb	NP_000206	P52333	2	3	10	10		•			
379	NK087	JIK (TAO3)	Pan-specific	STE20-like protein-serine kinase	RpAb	NP_057365	Q9UHG7	2	3	2	11		•			
380	NK217	JNK1	Pan-specific	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK)) 1	MmAb	NP_620637.1	P45983	2	3	4	11		•			
381	NK088-1	JNK1/2/3	Pan-specific	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK)) 1/2/3	RpAb	NP_002741	P45983	2	3	6	11	•	•			
382	NK088-2	JNK1/2/3	Pan-specific	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK)) 1/2/3	MmAb	NP_002741	P45983	2	3	8	11	•	•			

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
383	NK088-3	JNK1/2/3	Pan-specific	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK)) 1/2/3	RpAb	NP_002741	P45983	2	3	10	11	•	•			
384	PK035-1	JNK1/2/3	T183 + Y185	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK)) 1/2/3	RpAb	NP_002741	P45983	2	4	2	1		•			
385	PK035-2	JNK1/2/3	T183 + Y185	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK)) 1/2/3	RpAb	NP_002741	P45983	2	4	4	1	•	•			
386	PK035-4	JNK1/2/3	T183 + Y185	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK)) 1/2/3	RpAb	NP_002741	P45983	2	4	6	1	•	•			
387	NK189	JNK2	Pan-specific	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPK)) 2	RpAb	NP_002744	P45984	2	4	8	1		•			
388	NK196	JNK2/3	Pan-specific	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPKa/b)) 2/3	RpAb	NP_002743.3	P45984	2	4	10	1	•	•			
389	NK197	JNK3	Pan-specific	Jun N-terminus protein-serine kinase (stress-activated protein kinase (SAPKb)) 3	RpAb	NP_002744.1	P53779	2	4	2	2		•			
390	NN162	Jun	Pan-specific	Jun proto-oncogene-encoded AP1 transcription factor	MmAb	NP_002219	P05412	2	4	4	2			•		
391	PN047	Jun	S63	Jun proto-oncogene-encoded AP1 transcription factor	RpAb	NP_002219	P05412	2	4	6	2			•		
392	PN048-1	Jun	S73	Jun proto-oncogene-encoded AP1 transcription factor	RpAb	NP_002219	P05412	2	4	8	2			•		
393	PN048-2	Jun	S73	Jun proto-oncogene-encoded AP1 transcription factor	RpAb	NP_002219	P05412	2	4	10	2	•		•		
394	PN154	Jun	S243	Jun proto-oncogene-encoded AP1 transcription factor	RpAb	NP_002219	P05412	2	4	2	3			•		
395	PN155	Jun	Y170	Jun proto-oncogene-encoded AP1 transcription factor	RpAb	NP_002219	P05412	2	4	4	3			•		
396	PN163	Jun	T91	Jun proto-oncogene-encoded AP1 transcription factor	RpAb	NP_002219	P05412	2	4	6	3			•		
397	NP004	KAP	Pan-specific	Cyclin-dependent kinase associated phosphatase (CDK inhibitor 3, CIP2)	RpAb	NP_005183	Q16667	2	4	8	3					•
398	NN153	KDEL receptor 1	Pan-specific	ER lumen protein retaining receptor 1	MmAb	NP_006792.1	P24390	2	4	10	3					
399	NK089	KHS	Pan-specific	Kinase homologous to SPS1/STE20 (MAP kinase kinase kinase protein-serine kinase 5 (MEKKK5)	GpAb	NP_006566	Q9Y4K4	2	4	2	4		•			
400	PK036	Kit	Y703	Kit/Steel factor receptor-tyrosine kinase	RpAb	NP_006566	P10721	2	4	4	4		•			
401	PK037	Kit	Y730	Kit/Steel factor receptor-tyrosine kinase	RpAb	NP_006566	P10721	2	4	6	4		•			
402	PK038	Kit	Y936	Kit/Steel factor receptor-tyrosine kinase	RpAb	NP_006566	P10721	2	4	8	4		•			
403	PK150	Kit	Y721	Kit/Steel factor receptor-tyrosine kinase	RpAb	NP_006566	Q9Y4K4	2	4	10	4		•			
404	NK090	Ksr1	Pan-specific	Protein-serine kinase suppressor of Ras 1	RpAb	NP_055053.1	Q8IVT5	2	4	2	5		•			
405	NK090-2	Ksr1	Pan-specific	Protein-serine kinase suppressor of Ras 1	GpAb	NP_055053.1	Q8IVT5	2	4	4	5	•	•			
406	NP005	LAR	Pan-specific	LCA antigen-related (LAR) receptor tyrosine phosphatase	MmAb	NP_002831	P10586	2	4	6	5					•
407	NK091	LATS1	Pan-specific	Large tumor suppressor 1 protein-serine kinase (WARTS)	RpAb	NP_004681	O95835	2	4	8	5		•			
408	NK092-2	Lck	Pan-specific	Lymphocyte-specific protein-tyrosine kinase	MmAb	NP_005347	P06239	2	4	10	5		•			
409	NK092-3	Lck	Pan-specific	Lymphocyte-specific protein-tyrosine kinase	MmAb	NP_005347	P06239	2	4	2	6	•	•			
410	PK039	Lck	S158	Lymphocyte-specific protein-tyrosine kinase	RpAb	NP_005347	P06239	2	4	4	6		•			
411	PK040	Lck	Y192	Lymphocyte-specific protein-tyrosine kinase	RpAb	NP_005347	P06239	2	4	6	6		•			
412	PK041	Lck	Y505	Lymphocyte-specific protein-tyrosine kinase	RpAb	NP_005347	P06239	2	4	8	6		•			
413	PK149	Lck	Y394	Lymphocyte-specific protein-tyrosine kinase	MmAb	NP_005347	P06239	2	4	10	6		•			
414	NK093	LIMK1	Pan-specific	LIM domain kinase 1	MmAb	NP_002305	P53667	2	4	2	7		•			
415	PK042-PK144	LIMK1	Y507+T508	LIM domain kinase 1	RpAb	NP_002305	P53667	2	4	4	7		•			
416	NK095	Lyn	Pan-specific	Yes-related protein-tyrosine kinase	MmAb	NP_002341	P07948	2	4	6	7		•			
417	PK043	Lyn	Y508	Yes-related protein-tyrosine kinase	RpAb	NP_002341	P07948	2	4	8	7		•			
418	NK096	MAK	Pan-specific	Male germ cell-associated protein-serine kinase	RpAb	NP_005897	P20794	2	4	10	7		•			
419	NK097	MAPKAPK2	Pan-specific	Mitogen-activated protein kinase-activated protein kinase 2	GpAb	NP_116584	P49137	2	4	2	8		•			
420	PK044	MAPKAPK2	T222	Mitogen-activated protein kinase-activated protein kinase 2	RpAb	NP_004750	P49137	2	4	4	8		•			
421	PN049-PN112-1	MAPKAPK2a	T334	Mitogen-activated protein kinase-activated protein kinase 2 alpha	RpAb	NP_004750	P49137	2	4	6	8		•			
422	PN049-PN112-2	MAPKAPK2a	T334	Mitogen-activated protein kinase-activated protein kinase 2 alpha	RpAb	NP_004750	P49137	2	4	8	8	•	•			
423	PN050-1	MARCKS	S159+S163	Myristoylated alanine-rich protein kinase C substrate	RpAb	NP_002347	P29966	2	4	10	8					
424	NK098	MARK	Pan-specific	MAP/microtubule affinity-regulating protein-serine kinase 1	RpAb	NP_061120	Q9P0L2	2	4	2	9		•			
425	NN067	Mcl1	Pan-specific	Myeloid cell leukemia differentiation protein 1	RpAb	NP_068779	Q07820	2	4	4	9					
426	PN169	MDM2	S166	double minute 2	RpAb	NP_002383.2	Q00987	2	4	6	9					
427	NN155	MEF-2	Pan-specific	Myelin expression factor 2 (MYEF2)	RpAb	NP_057216.2	Q9P2K5	2	4	8	9					
428	NK099-1	MEK1 (MAP2K1)	Pan-specific	MAPK/ERK protein-serine kinase 1 (MKK1)	MmAb	NP_002746	Q02750	2	4	10	9		•			
429	NK099-2	MEK1 (MAP2K1)	Pan-specific	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	2	10	•	•			
430	NK099-3	MEK1 (MAP2K1)	Pan-specific	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	4	10	•	•			
431	NK099-4	MEK1 (MAP2K1)	Pan-specific	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	6	10	•	•			
432	NK099-5	MEK1 (MAP2K1)	Pan-specific	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	8	10	•	•			
433	PK046-1	MEK1 (MAP2K1)	T292	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	10	10		•			
434	PK046-2	MEK1 (MAP2K1)	T292	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	2	11	•	•			
435	PK046-3	MEK1 (MAP2K1)	T292	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	4	11	•	•			
436	PK047-2	MEK1 (MAP2K1)	S298	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	6	11		•			
437	PK048-1	MEK1 (MAP2K1)	T386	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	8	11		•			
438	PK048-2	MEK1 (MAP2K1)	T386	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	2	4	10	11	•	•			
439	PK048-3	MEK1 (MAP2K1)	T386	MAPK/ERK protein-serine kinase 1 (MKK1)	RpAb	NP_002746	Q02750	3	1	2	1	•	•			
440	PK045-PN007	MEK1/2 (MAP2K1/2)	S218+S222	MAPK/ERK protein-serine kinase 1/2 (MKK1/2)	RpAb	NP_002746	Q02750	3	1	4	1		•			
441	NK221	MEK1/2 [MAP2K1/2]	Pan-specific	MAPK/ERK protein-serine kinase 1/2 (MKK1/2)	RpAb	NP_002746	Q02750	3	1	6	1	•	•			
442	NK100-1	MEK2 (MAP2K2)	Pan-specific	MAPK/ERK protein-serine kinase 2 (MKK2)	MmAb	AAH00471.1	P36507	3	1	8	1		•			
443	NK100-2	MEK2 (MAP2K2)	Pan-specific	MAPK/ERK protein-serine kinase 2 (MKK2)	RpAb	AAH00471.1	P36507	3	1	10	1	•	•			
444	NK100-3	MEK2 (MAP2K2)	Pan-specific	MAPK/ERK protein-serine kinase 2 (MKK2)	RpAb	AAH00471.1	P36507	3	1	2	2	•	•			
445	PK049	MEK2 (MAP2K2)	T394	MAPK/ERK protein-serine kinase 2 (MKK2)	RpAb	AAH00471.1	P36507	3	1	4	2		•			
446	PK049-2	MEK2 (MAP2K2)	T394	MAPK/ERK protein-serine kinase 2 (MKK2)	RpAb	AAH00471.1	P36507	3	1	6	2	•	•			
447	PK050	MEK2 (MAP2K2)	T394	MAPK/ERK protein-serine kinase 2 (MKK2) (mouse)	RpAb	NP_075627	P36507	3	1	8	2	•	•			
448	NK101	MEK3 (MAP2K3)	Pan-specific	MAPK/ERK protein-serine kinase 3 (MKK3)	RpAb	NP_659732	P46734	3	1	10	2		•			
449	NK101-3	MEK3 (MAP2K3)	Pan-specific	MAPK/ERK protein-serine kinase 3 (MKK3)	RpAb	NP_659732	P46734	3	1	2	3	•	•			
450	PK127	MEK3 (MAP2K3)	S218	MAPK/ERK protein-serine kinase 3 (MKK3)	RpAb	NP_659732	P46734	3	1	4	3		•			
451	PK051	MEK3/6 (MAP2K3/6)	S218/S207	MAPK/ERK protein-serine kinase 3/6 (MKK3/6)	RpAb	NP_002747	P46734	3	1	6	3		•			
452	PK051-2	MEK3/6 (MAP2K3/6)	S218/S207	MAPK/ERK protein-serine kinase 3/6 (MKK3/6)	RpAb	NP_002747	P46734	3	1	8	3	•	•			
453	PK051-3	MEK3/6 (MAP2K3/6)	S218/S207	MAPK/ERK protein-serine kinase 3/6 (MKK3/6)	RmAb	NP_002747	P46734	3	1	10	3	•	•			
454	NK102	MEK3b (MAP2K3)	Pan-specific	MAPK/ERK protein-serine kinase 3 beta isoform (MKK3 beta)	MmAb	NP_659731	P46734	3	1	2	4	•	•			
455	NK103	MEK4 (MAP2K4)	Pan-specific	MAPK/ERK protein-serine kinase 4 (MKK4)	RpAb	NP_003001	P45985	3	1	4	4		•			
456	NK103-2	MEK4 (MAP2K4)	Pan-specific	MAPK/ERK protein-serine kinase 4 (MKK4)	RpAb	NP_003001	P45985	3	1	6	4	•	•			
457	NK103-3	MEK4 (MAP2K4)	Pan-specific	MAPK/ERK protein-serine kinase 4 (MKK4)	RpAb	NP_003001	P45985	3	1	8	4	•	•			
458	PK052	MEK4 (MAP2K4)	S257+T261	MAPK/ERK protein-serine kinase 4 (MKK4)	RpAb	NP_003001	P45985	3	1	10	4		•			
459	PK155	MEK5	S311315	MAPK/ERK protein-serine kinase 5 (MKK5)	RpAb	NP_660143	Q13163	3	1	2	5		•			
460	NK104	MEK5 (MAP2K5)	Pan-specific	MAPK/ERK protein-serine kinase 5 (MKK5)	GpAb	NP_660143	Q13163	3	1	4	5		•			
461	NK104-2	MEK5 (MAP2K5)	Pan-specific	MAPK/ERK protein-serine kinase 5 (MKK5)	RpAb	NP_660143	Q13163	3	1	6	5	•	•			

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
462	NK105-1	MEK6 (MAP2K6)	Pan-specific	MAPK/ERK protein-serine kinase 6 (MKK6)	RpAb	NP_002749	P52564	3	1	8	5		•			
463	PK129	MEK6 (MAP2K6)	S207	MAPK/ERK protein-serine kinase 6 (MKK6)	RpAb	NP_002749	P52564	3	1	10	5		•			
464	NK106-2	MEK7 (MAP2K7)	Pan-specific	MAPK/ERK protein-serine kinase 7 (MKK7)	GpAb	NP_005034	O14733	3	1	2	6		•			
465	NK107	MEKK1 (MAP3K1)	Pan-specific	MAPK/ERK kinase kinase 1	RpAb	NP_005912.1	Q13233	3	1	4	6		•			
466	NK107-2	MEKK1 (MAP3K1)	Pan-specific	MAPK/ERK kinase kinase 1	RpAb	NP_005912.1	Q13233	3	1	6	6	•	•			
467	NK107-3	MEKK1 (MAP3K1)	Pan-specific	MAPK/ERK kinase kinase 1	RpAb	NP_005912.1	Q13233	3	1	8	6	•	•			
468	NK107-4	MEKK1 (MAP3K1)	Pan-specific	MAPK/ERK kinase kinase 1	RpAb	NP_005912.1	Q13233	3	1	10	6	•	•			
469	NK108	MEKK2 (MAP3K2)	Pan-specific	MAPK/ERK kinase kinase 2	RpAb	NP_006600.3	Q9Y2U5	3	1	2	7		•			
470	NK108-2	MEKK2 (MAP3K2)	Pan-specific	MAPK/ERK kinase kinase 2	RpAb	NP_006600.3	Q9Y2U5	3	1	4	7	•	•			
471	NK109	MEKK4 (MAP3K4)	Pan-specific	MAPK/ERK kinase kinase 4	RpAb	NP_005913	Q9Y6R4	3	1	6	7		•			
472	PK055-1	Met	230+Y1234+Y12	Hepatocyte growth factor (HGF) receptor-tyrosine kinase	RpAb	NP_000236.	P08581	3	1	8	7		•			
473	NP006	MKP1	Pan-specific	MAP kinase phosphatase 1 (CL100, VH1)	RpAb	NP_004408	P28562	3	1	10	7					•
474	NP007	MKP2	Pan-specific	MAP kinase phosphatase 2 (VH2)	MmAb	NP_001385	Q13115	3	1	2	8					•
475	PN051-1	MLC(MLRC2)	S19	Myosin regulatory light chain 2, smooth muscle isoform	RpAb	NP_291024	P19105	3	1	4	8					
476	PN051-2	MLC(MLRC2)	S19	Myosin regulatory light chain 2, smooth muscle isoform	RpAb	NP_291024	P19105	3	1	6	8	•				
477	NK208	MLK3	Pan-specific	Mixed-lineage protein-serine kinase 3	RpAb	NP_002410	Q16584	3	1	8	8		•			
478	PK056	MLK3	T277+S281	Mixed-lineage protein-serine kinase 3	RpAb	NP_002410	Q16584	3	1	10	8		•			
479	NN132	mMOB1	Pan-specific	Preimplantation protein 3	RpAb	NP_056202	Q9Y3A3	3	1	2	9					
480	PK057	Mnk1	T250+T255	MAP kinase-interacting protein-serine kinase 1 (calmodulin-activated)	RpAb	NP_003675	Q9BUB5	3	1	4	9		•			
481	NK111	Mnk2	Pan-specific	MAP kinase-interacting protein-serine kinase 2 (calmodulin-activated)	GpAb	NP_060042	Q9HBH9	3	1	6	9		•			
482	NN069	MSH2	Pan-specific	DNA mismatch repair protein mutS homolog2, colon cancer, nonpolyposis type 1	MmAb	NP_000242	P43246	3	1	8	9					
483	PK058	Msk1	S376	Mitogen & stress-activated protein-serine kinase 1	RpAb	NP_004746	O75582	3	1	10	9		•			
484	NK113-1	MST1	Pan-specific	Mammalian STE20-like protein-serine kinase 1 (KRS2)	RpAb	NP_006273	Q13043	3	1	2	10		•			
485	NK113-2	MST1	Pan-specific	Mammalian STE20-like protein-serine kinase 1 (KRS2)	MmAb	NP_006273	Q13043	3	1	4	10	•	•			
486	NK113-3	MST1	Pan-specific	Mammalian STE20-like protein-serine kinase 1 (KRS2)	GpAb	NP_006273	Q13043	3	1	6	10	•	•			
487	NK113-4	MST1	Pan-specific	Mammalian STE20-like protein-serine kinase 1 (KRS2)	MmAb	NP_006273	Q13043	3	1	8	10	•	•			
488	NK114	MST2	Pan-specific	Mammalian STE20-like protein-serine kinase 2 (KRS1)	RpAb	NP_006272	Q13188	3	1	10	10		•			
489	NK115	MST3	Pan-specific	Mammalian STE20-like protein-serine kinase 3	MmAb	NP_003567	Q9Y6E0	3	1	2	11		•			
490	PK116	mTOR (FRAP)	S2448	Mammalian target of rapamycin (FRAP)	RmAb	NP_004949	P42345	3	1	4	11		•			
491	PN186	Myc	S373	Myc proto-oncogene protein	RpAb	NP_002458.2	P01106	3	1	6	11			•		
492	PN199	Myc	T58	Myc proto-oncogene protein	RpAb	NP_002458.2	P01106	3	1	8	11			•		
493	PN182	MyoD	S200	Myoblast determination protein 1	RpAb	NP_002469.2	P15172	3	1	10	11					
494	PN052	MYPT1	T696	Myosin phosphatase target 1	RpAb	NP_446342	O14974	3	2	2	1					
495	PN187	NBS1	S343	Nijmegen breakage syndrome protein 1	RpAb	NP_002476.2	O60934	3	2	4	1					
496	NK117-1	Nek2	Pan-specific	NIMA (never-in-mitosis)-related protein-serine kinase 2	RpAb	NP_002488	P51955	3	2	6	1		•			
497	NK117-2	Nek2	Pan-specific	NIMA (never-in-mitosis)-related protein-serine kinase 2	RpAb	NP_002488	P51955	3	2	8	1	•	•			
498	NK117-3	Nek2	Pan-specific	NIMA (never-in-mitosis)-related protein-serine kinase 2	GpAb	NP_002488	P51955	3	2	10	1	•	•			
499	NK117-4	Nek2	Pan-specific	NIMA (never-in-mitosis)-related protein-serine kinase 2	GpAb	NP_002488	P51955	3	2	2	2	•	•			
500	NK117-5	Nek2	Pan-specific	NIMA (never-in-mitosis)-related protein-serine kinase 2	RpAb	NP_002488	P51955	3	2	4	2	•	•			
501	NK118	Nek4	Pan-specific	NIMA (never-in-mitosis)-related protein-serine kinase 4	RpAb	NP_003148	P51957	3	2	6	2		•			
502	NK119	Nek7	Pan-specific	NIMA (never-in-mitosis)-related protein-serine kinase 7	RpAb	NP_598001	Q8TDX7	3	2	8	2		•			
503	NN070	NFkappaB p50	Pan-specific	NF-kappa-B p50 nuclear transcription factor	RpAb	NP_003989	P19838	3	2	10	2			•		
504	NN071	NFkappaB p65	Pan-specific	NF-kappa-B p65 nuclear transcription factor	RpAb	NP_003989	Q04206	3	2	2	3			•		
505	PN053-1	NFkappaB p65	S276	NF-kappa-B p65 nuclear transcription factor	RpAb	NP_003989	Q04206	3	2	4	3			•		
506	PN156	NFKB p65	S529	NF-kappa-B p65 nuclear transcription factor	RpAb	NP_003989	Q04206	3	2	6	3			•		
507	PN157	NFKB p65	S536	NF-kappa-B p65 nuclear transcription factor	RpAb	NP_003989	Q04206	3	2	8	3			•		
508	NK207	NIK	Pan-specific	NF-kappa beta-inducing kinase	GpAb	NP_003945.2	Q99558	3	2	10	3		•			
509	NK212	Nlk	Pan-specific	Serine/threonine protein kinase NLK	GpAb	NP_057315.3	Q9UBE8	3	2	2	4		•			
510	PN054	NMDAR2B	Y1474	N-methyl-D-aspartate (NMDA) glutamate receptor 2B subunit	RpAb	NP_000825	Q13224	3	2	4	4					
511	NN074	NME7	Pan-specific	Nucleotide diphosphate kinase 7 (nm23-H7)	RpAb	NP_037462	Q9Y5B8	3	2	6	4					
512	PN055-1	NR1	S896	N-methyl-D-aspartate (NMDA) glutamate receptor 1 subunit zeta	RpAb	NP_000823	Q05586	3	2	8	4					
513	NN075	NT5E	Pan-specific	Ecto-5'-nucleotidase (CD73 antigen)	RpAb	NP_002517	P21589	3	2	10	4					
514	NN083	p107	Pan-specific	Retinoblastoma (Rb) protein-related p107 (PRB1)	RpAb	NP_002886.2	P28749	3	2	2	5					
515	NN077	p18 INK4c	Pan-specific	p18 INK4c cyclin-dependent kinase inhibitor	RpAb	NP_523240	P42773	3	2	4	5					
516	NN078	p21 CDKI1	Pan-specific	cyclin-dependent kinase inhibitor 1 (MDA6)	RpAb	NP_000380	P38936	3	2	6	5					
517	NN081-NN120	p25	Pan-specific	CDK5 regulatory subunit p25	RpAb	NP_003876.1	Q15078	3	2	8	5		•			
518	NN080	p27 Kip1	Pan-specific	p27 cyclin-dependent kinase inhibitor 1B	RpAb	NP_004055	P46527	3	2	10	5					
519	PN056	p27 Kip1	T187	p27 cyclin-dependent kinase inhibitor 1B	RpAb	NP_004055	P46527	3	2	2	6					
520	PK060-1	p38a MAPK	T180+Y182	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	4	6		•			
521	PK060-2	p38a MAPK	T180+Y182	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	6	6	•	•			
522	PK060-3	p38a MAPK	T180+Y182	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	8	6	•	•			
523	NK120-1	p38a MAPK	Pan-specific	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	10	6		•			
524	NK120-10	p38a MAPK	Pan-specific	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	2	7	•	•			
525	NK120-2	p38a MAPK	Pan-specific	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	4	7	•	•			
526	NK120-3	p38a MAPK	Pan-specific	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	6	7	•	•			
527	NK120-4	p38a MAPK	Pan-specific	Mitogen-activated protein-serine kinase p38 alpha	MmAb	NP_001306	Q16539	3	2	8	7	•	•			
528	NK120-5	p38a MAPK	Pan-specific	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	10	7	•	•			
529	NK120-7	p38a MAPK	Pan-specific	Mitogen-activated protein-serine kinase p38 alpha	RpAb	NP_001306	Q16539	3	2	2	8	•	•			
530	NK059-1	p38g MAPK (Erk6)	Pan-specific	Mitogen-activated protein-serine kinase p38 gamma (MAPK12)	RpAb	NP_002960	P53778	3	2	4	8		•			
531	NK059-2	p38g MAPK (Erk6)	Pan-specific	Mitogen-activated protein-serine kinase p38 gamma (MAPK12)	RpAb	NP_002960	P53778	3	2	6	8	•	•			
532	NN082	p53	Pan-specific	Tumor suppressor protein p53 (antigenNY-CO-13)	MmAb	NP_000537	P04637	3	2	8	8			•		
533	PN057-1	p53	S392	Tumor suppressor protein p53 (antigenNY-CO-13)	MmAb	NP_000537	P04637	3	2	10	8			•		
534	PN057-2	p53	S392	Tumor suppressor protein p53 (antigenNY-CO-13)	RpAb	NP_000537	P04637	3	2	2	9	•		•		
535	PN057-3	p53	S392	Tumor suppressor protein p53 (antigenNY-CO-13)	RpAb	NP_000537	P04637	3	2	4	9	•		•		
536	PN158	p53	S33	Tumor suppressor protein p53 (antigenNY-CO-13)	RpAb	NP_000537	P04637	3	2	6	9			•		
537	PN159	p53	S37	Tumor suppressor protein p53 (antigenNY-CO-13)	RpAb	NP_000537	P04637	3	2	8	9			•		
538	PN160	p53	S6	Tumor suppressor protein p53 (antigenNY-CO-13)	RpAb	NP_000537	P04637	3	2	10	9			•		
539	NN123	p73	Pan-specific	Tumor suppressor protein p73	MmAb	NP_005418	O15350	3	2	2	10			•		
540	NP008	PAC1	Pan-specific	Dual specificity MAP kinase protein phosphatase	GpAb	NP_004409	Q05923	3	2	4	10					•
541	NN084	PACSIN1	Pan-specific	Protein kinase C + casein kinase substrate in neurons protein 1	RpAb	NP_065855	Q9BY11	3	2	6	10					
542	NK122	PAK1	Pan-specific	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	RpAb	NP_002567	Q13153	3	2	8	10		•			

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
543	NK122-2	PAK1	Pan-specific	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	RpAb	NP_002567	Q13153	3	2	10	10	•	•			
544	NK122-4	PAK1	Pan-specific	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	RpAb	NP_002567	Q13153	3	2	2	11	•	•			
545	PK130	PAK1	T212	p21-activated kinase 1 (alpha) (serine/threonine-protein kinase PAK 1)	RpAb	NP_002567	Q13153	3	2	4	11		•			
546	NK224	PAK1/2/3	Pan-specific	p21-activated kinase 1/2/3 (serine/threonine-protein kinase PAK 1/2/3)	RpAb	NP_002567	Q13153	3	2	6	11	•	•			
547	PK061	PAK1/2/3	S144/S141/S154	p21-activated kinase 1/2/3 (serine/threonine-protein kinase PAK 1/2/3)	RpAb	NP_002567	Q13153	3	2	8	11		•			
548	NK200	PAK2	Pan-specific	p21-activated kinase 2 (gamma) (serine/threonine-protein kinase PAK 2)	RpAb	NP_002568.2	Q13177	3	2	10	11		•			
549	NK200-2	PAK2	Pan-specific	p21-activated kinase 2 (gamma) (serine/threonine-protein kinase PAK 2)	GpAb	NP_002568.2	Q13177	3	3	2	1	•	•			
550	NK123	PAK3	Pan-specific	p21-activated kinase 3 (beta) (serine/threonine-protein kinase PAK 3)	GpAb	NP_002569	O75914	3	3	4	1		•			
551	NN085-1	PARP1	Pan-specific	Poly [ADP-ribose] polymerase 1 (ADPRT)	RpAb	NP_001609	P09874	3	3	6	1					
552	NN085-2	PARP1	Pan-specific	Poly [ADP-ribose] polymerase 1 (ADPRT)	RpAb	NP_001609	P09874	3	3	8	1					
553	PN058	Pax2	S394	Paired box protein 2	RpAb	NP_003978	Q02962	3	3	10	1					
554	NN086	Paxillin 1	Pan-specific	Paxillin 1	MmAb	NP_002850	P49023	3	3	2	2					
555	PN059	Paxillin 1	Y31	Paxillin 1	RpAb	NP_002850	P49023	3	3	4	2					
556	PN060-1	Paxillin 1	Y118	Paxillin 1	RpAb	NP_002850	P49023	3	3	6	2					
557	PN060-3	Paxillin 1	Y118	Paxillin 1	RpAb	NP_002850	P49023	3	3	8	2	•				
558	NN087	PCNA	Pan-specific	Proliferating cell nuclear antigen	MmAb	NP_002583	P12004	3	3	10	2					
559	NK125	PCTK1 (PCTAIRE1)	Pan-specific	PCTAIRE-1 protein-serine kinase	RbAb	NP_148978	Q00536	3	3	2	3		•			
560	PK063	PDGFRa	Y754	Platelet-derived growth factor receptor kinase alpha	RpAb	NP_006197	P16234	3	3	4	3		•			
561	PK065	PDGFRb	Y716	Platelet-derived growth factor receptor kinase beta	RpAb	NP_032835	P09619	3	3	6	3		•			
562	NN141-1	PDI	Pan-specific	Protein disulfide-isomerase	RpAb	NP_000909.2	P07237	3	3	8	3					
563	NK126-1	PDK1	Pan-specific	3-phosphoinositide-dependent protein-serine kinase 1	RbAb	NP_002604	O15530	3	3	10	3		•			
564	NK126-2	PDK1	Pan-specific	3-phosphoinositide-dependent protein-serine kinase 1	GpAb	NP_002604	O15530	3	3	2	4	•	•			
565	PK066	PDK1	S241	3-Phosphoinositide-dependent protein-serine kinase 1	RpAb	NP_002604	O15530	3	3	4	4		•			
566	PN061	PED15 (PEA15)	S116	Phosphoprotein-enriched in diabetes/astrocytes 15	RpAb	NP_003759	Q15121	3	3	6	4					
567	NN088	PERP	Pan-specific	p53-induced protein PIGPC1	RpAb	NP_071404	Q9H230	3	3	8	4					
568	NN089	PI3K	Pan-specific	Phosphatidylinositol 3-kinase regulatory subunit alpha	MmAb	NP_852664	P27986	3	3	10	4					
569	PN127	PI3K p85/p55	Y467/Y199	Phosphatidylinositol 3-kinase regulatory subunit alpha	RpAb	NP_852664	P27986	3	3	2	5					
570	NN114	PI3KR4	Pan-specific	Phosphoinositide-3-kinase, regulatory subunit 4	RpAb	NP_055417	Q99570	3	3	4	5					
571	NK192	PI4KCB	Pan-specific	phosphatidylinositol 4-kinase, catalytic, beta polypeptide	RpAb	NP_002642	Q5VWC1	3	3	6	5					
572	NK209	PIP5K2a	Pan-specific	Phosphatidylinositol 4-phosphatase 5-kinase type 2 alpha	RpAb	NP_005019.2	P48426	3	3	8	5					
573	NK213	PITSLRE	Pan-specific	PITSLRE serine/threonine-protein kinase CDC2L1	RpAb	NP_277021.1	P21127	3	3	10	5		•			
574	NK127-1	PKA Ca/b	Pan-specific	cAMP-dependent protein-serine kinase catalytic subunit alpha/beta	MmAb	NP_002721	P17612	3	3	2	6		•			
575	PK067	PKA Ca/b	T198	cAMP-dependent protein-serine kinase catalytic subunit alpha/beta	RpAb	NP_002721	P17612	3	3	4	6		•			
576	PK068	PKA Cb	S339	cAMP-dependent protein-serine kinase catalytic subunit beta	RpAb	NP_002722	P22694	3	3	6	6		•			
577	NN116	PKA R1a	Pan-specific	cAMP-dependent protein-serine kinase type I-alpha regulatory chain	RpAb	NP_002725	P10644	3	3	8	6		•			
578	NK128	PKA R2a	Pan-specific	cAMP-dependent protein-serine kinase regulatory type 2 subunit alpha	RpAb	NP_004148	P13861	3	3	10	6		•			
579	PK069	PKA R2a	S99	cAMP-dependent protein-serine kinase regulatory type 2 subunit alpha	RpAb	NP_523671	P13861	3	3	2	7		•			
580	NK129	PKBa (Akt1)	Pan-specific	Protein-serine kinase B alpha	MmAb	NP_005154	P31749	3	3	4	7		•			
581	NK129-2	PKBa (Akt1)	Pan-specific	Protein-serine kinase B alpha	RpAb	NP_005154	P31749	3	3	6	7	•	•			
582	PK071-2	PKBa (Akt1)	T308	Protein-serine kinase B alpha	RpAb	NP_005154	P31749	3	3	8	7		•			
583	PK072-1	PKBa (Akt1)	S473	Protein-serine kinase B alpha	RpAb	NP_005154	P31749	3	3	10	7		•			
584	PK072-3	PKBa (Akt1)	S473	Protein-serine kinase B alpha	RpAb	NP_005154	P31749	3	3	2	8	•	•			
585	PK072-5	PKBa (Akt1)	S473	Protein-serine kinase B alpha	RpAb	NP_005154	P31749	3	3	4	8		•			
586	PK148	PKBa (Akt1)	Y474	Protein-serine kinase B alpha	RpAb	NP_005154	P31749	3	3	6	8		•			
587	NK130-1	PKBb (Akt2)	Pan-specific	Protein-serine kinase B beta	RpAb	NP_001617	P31751	3	3	8	8		•			
588	NK130-2	PKBb (Akt2)	Pan-specific	Protein-serine kinase B beta	RpAb	NP_001617	P31751	3	3	10	8	•	•			
589	NK130-3	PKBb (Akt2)	Pan-specific	Protein-serine kinase B beta	RpAb	NP_001617	P31751	3	3	2	9	•	•			
590	NK130-5	PKBb (Akt2)	Pan-specific	Protein-serine kinase B beta	RpAb	NP_001617	P31751	3	3	4	9	•	•			
591	NK130-6	PKBb (Akt2)	Pan-specific	Protein-serine kinase B beta	GpAb	NP_001617	P31751	3	3	6	9	•	•			
592	NK130-7	PKBb (Akt2)	Pan-specific	Protein-serine kinase B beta	GpAb	NP_001617	P31751	3	3	8	9	•	•			
593	NK131-1	PKBg (Akt3)	Pan-specific	Protein-serine kinase B gamma	RpAb	NP_005456	Q9Y243	3	3	10	9		•			
594	NK131-2	PKBg (Akt3)	Pan-specific	Protein-serine kinase B gamma	RpAb	NP_005456	Q9Y243	3	3	2	10	•	•			
595	NK201	PKC	Pan-specific	Protein-serine kinase C alpha	RpAb	NP_002728	P17252	3	3	4	10		•			
596	NK218	PKC h	Pan-specific	Protein kinase C eta type	RpAb	NP_006246.2	P24723	3	3	6	10		•			
597	NK132	PKCa	Pan-specific	Protein-serine kinase C alpha	MmAb	NP_002728	P17252	3	3	8	10		•			
598	PK073	PKCa	S657	Protein-serine kinase C alpha	RpAb	NP_002728	P17252	3	3	10	10		•			
599	PK074	PKCa/b2	T638/T641	Protein-serine kinase C alpha/beta 2	RpAb	NP_002728	P17252	3	3	2	11		•			
600	NK133	PKCb1	Pan-specific	Protein-serine kinase C beta 1	RpAb	NP_002729	P05771	3	3	4	11		•			
601	NK133-2	PKCb1	Pan-specific	Protein-serine kinase C beta 1	MmAb	NP_002729	P05771	3	3	6	11	•	•			
602	PK075	PKCb1/2	T500	Protein-serine kinase C beta 1/2	RpAb	NP_997700	P05771	3	3	8	11		•			
603	PK075-2	PKCb1/2	T500	Protein-serine kinase C beta 1/2	RpAb	NP_997700	P05771	3	3	10	11	•	•			
604	NK134-2	PKCb2	Pan-specific	Protein-serine kinase C beta 2	RpAb	AAA60095	P05771-2	3	4	2	1		•			
605	PK076-2	PKCb2	T641	Protein-serine kinase C beta 2	RpAb	NP_002729	P05771	3	4	4	1		•			
606	NK135	PKCd	Pan-specific	Protein-serine kinase C delta	RpAb	NP_006245	Q05655	3	4	6	1		•			
607	PK077-1	PKCd	Y313	Protein-serine kinase C delta	RpAb	NP_006245	Q05655	3	4	8	1		•			
608	PK077-2	PKCd	Y313	Protein-serine kinase C delta	RpAb	NP_006245	Q05655	3	4	10	1	•	•			
609	PK078	PKCd	T507	Protein-serine kinase C delta	RpAb	NP_006245	Q05655	3	4	2	2		•			
610	PK079-1	PKCd	S645	Protein-serine kinase C delta	RpAb	NP_006245	Q05655	3	4	4	2		•			
611	PK080	PKCd	S664	Protein-serine kinase C delta	RpAb	NP_006245	Q05655	3	4	6	2		•			
612	NK136	PKCe	Pan-specific	Protein-serine kinase C epsilon	RpAb	NP_005391	Q02156	3	4	8	2		•			
613	NK136-2	PKCe	Pan-specific	Protein-serine kinase C epsilon	GpAb	NP_005391	Q02156	3	4	10	2	•	•			
614	PK081-1	PKCe	S729	Protein-serine kinase C epsilon	RpAb	NP_005391	Q02156	3	4	2	3		•			
615	NK137	PKCg	Pan-specific	Protein-serine kinase C gamma	RpAb	NP_002730	P05129	3	4	4	3		•			
616	PK082-1	PKCg	T514	Protein-serine kinase C gamma	RpAb	NP_002730	P05129	3	4	6	3		•			
617	PK082-2	PKCg	T514	Protein-serine kinase C gamma	RpAb	NP_002730	P05129	3	4	8	3	•	•			
618	PK083	PKCg	T655	Protein-serine kinase C gamma	RpAb	NP_002730	P05129	3	4	10	3		•			
619	PK084	PKCg	T674	Protein-serine kinase C gamma	RpAb	NP_002730.1	P05129	3	4	2	4		•			
620	PK085	PKCh	T655	Protein-serine kinase C eta	RpAb	NP_006246	P24723	3	4	4	4		•			
621	NK138-1	PKCl/i	Pan-specific	Protein-serine kinase C lambda/iota	GpAb	NP_002731	P41743	3	4	6	4		•			
622	PK087	PKCl/i	T564	Protein-serine kinase C lambda/iota	RpAb	NP_002731	P41743	3	4	8	4		•			
623	NK142	PKCm (PKD)	Pan-specific	Protein-serine kinase C mu (Protein kinase D)	RpAb	NP_002733	Q15139	3	4	10	4		•			

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
624	PK092	PKCm (PKD)	S738+S742	Protein-serine kinase C mu (Protein kinase D)	RpAb	NP_002733	Q15139	3	4	2	5		•			
625	PK093-1	PKCm (PKD)	S910	Protein-serine kinase C mu (Protein kinase D)	RpAb	NP_002733	Q15139	3	4	4	5		•			
626	PK093-2	PKCm (PKD)	S910	Protein-serine kinase C mu (Protein kinase D)	RpAb	NP_002733	Q15139	3	4	6	5	•	•			
627	NK140	PKCq	Pan-specific	Protein-serine kinase C theta	MmAb	NP_006248	Q04759	3	4	8	5		•			
628	PK088	PKCq	T538	Protein-serine kinase C theta	RpAb	NP_006248	Q04759	3	4	10	5		•			
629	PK089-1	PKCq	S676	Protein-serine kinase C theta	RpAb	NP_006248	Q04759	3	4	2	6		•			
630	PK090-1	PKCq	S695	Protein-serine kinase C theta	RpAb	NP_006248	Q04759	3	4	4	6		•			
631	NK141	PKCz	Pan-specific	Protein-serine kinase C zeta	RpAb	NP_002735	Q05513	3	4	6	6		•			
632	PK091	PKCz/l	T410/T412	Protein-serine kinase C zeta/lambda	RpAb	NP_002735	Q05513	3	4	8	6		•			
633	NK143	PKG1	Pan-specific	Protein-serine kinase G1 (cGMP-dependent protein kinase)	RpAb	NP_006249	Q13976	3	4	10	6		•			
634	NK202	PKG1a	Pan-specific	cGMP-dependent protein kinase 1, alpha isozyme	RpAb	NP_006249	Q13976	3	4	2	7		•			
635	NK203	PKG1b	Pan-specific	cGMP-dependent protein kinase 1, beta isozyme	RpAb	NP_006249.1	P14619	3	4	4	7		•			
636	NN115	PKM2	Pan-specific	Pyruvate kinase, isozymes M1/M2	RpAb	NP_872270	P14618	3	4	6	7					
637	NK144-1	PKR1	Pan-specific	Double stranded RNA dependent protein-serine kinase	MmAb	NP_002750	P19525	3	4	8	7		•			
638	PK132	PKR1	T446	Double-stranded RNA-dependent protein-serine kinase	RpAb	NP_002750	P19525	3	4	10	7		•			
639	NN156	PLC R(PLCg2)	Pan-specific	1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase gamma-2	RpAb	NP_002652.2	P16885	3	4	2	8					
640	PN144	PLCg1	Y783	1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase gamma-1	RpAb	NP_877963.1	P19174	3	4	4	8					
641	PN165	PLCg1	Y771	1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase gamma-1	RpAb	NP_877963.1	P19174	3	4	6	8					
642	PN143	PLCg2	Y753	1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase gamma-2	RpAb	NP_002652.2	P16885	3	4	8	8					
643	NK145	Plk1	Pan-specific	Polo-like protein-serine kinase 1	MmAb	NP_005021	P53350	3	4	10	8		•			
644	PK117	Plk1	T210	Polo-like protein-serine kinase 1	RpAb	NP_005021	P53350	3	4	2	9		•			
645	NK146	Plk2	Pan-specific	Polo-like protein kinase 2 (serum -inducible kinase (SNK))	RpAb	NP_006613	Q9NYY3	3	4	4	9		•			
646	NK146-2	Plk2	Pan-specific	Polo-like protein kinase 2 (serum -inducible kinase (SNK))	GpAb	NP_006613	Q9NYY3	3	4	6	9	•	•			
647	NK147	Plk3	Pan-specific	Polo-like protein kinase 3 (cytokine- inducible kinase (CNK))	RpAb	NP_004064	Q9H4B4	3	4	8	9		•			
648	NP009	PP1/Ca	Pan-specific	Protein-serine phosphatase 1 - catalytic subunit - alpha isoform	RpAb	NP_002699	P62136	3	4	10	9					•
649	NP009-2	PP1/Ca	Pan-specific	Protein-serine phosphatase 1 - catalytic subunit - alpha isoform	RpAb	NP_002699	P62136	3	4	2	10	•				•
650	PP001	PP1/Ca	T320	Protein-serine phosphatase 1 - catalytic subunit - alpha isoform	RpAb	NP_002699	P62136	3	4	4	10					•
651	NP010	PP1/Cb	Pan-specific	Protein-serine phosphatase 1 - catalytic subunit - beta isoform	RpAb	NP_002700	P62140	3	4	6	10					•
652	NP010-2	PP1/Cb	Pan-specific	Protein-serine phosphatase 1 - catalytic subunit - beta isoform	RpAb	NP_002700	P62140	3	4	8	10	•				•
653	NP011	PP1/Cg	Pan-specific	Protein-serine phosphatase 1 - catalytic subunit - gamma isoform	RpAb	NP_002701	P36873	3	4	10	10					•
654	NP033	PP2A B' (B56)	Pan-specific	Protein-serine phosphatase 2A - B regulatory subunit - B56 alpha isoform	RpAb	NP_001186685.1	Q15172	3	4	2	11					•
655	NP012	PP2A/Aa/b	Pan-specific	Protein-serine phosphatase 2A - A regulatory subunit - alpha and beta isoforms	RpAb	NP_002707	P30153	3	4	4	11					•
656	NP035	PP2A/Bb	Pan-specific	Protein-serine phosphatase 2A - B regulatory subunit - beta isoform	RpAb	NP_001120853.1	Q00005	3	4	6	11					•
657	NP032	PP2A/Bg2	Pan-specific	Protein-serine phosphatase 2A - B regulatory subunit - gamma isoform	RpAb	NP_001193923.1	Q9Y2T4	3	4	8	11					•
658	NP013-NP014	PP2A/Ca	Pan-specific	Protein-serine phosphatase 2A - catalytic subunit - alpha isoform	MmAb	NP_002706	P67775	3	4	10	11					•
659	NP015	PP2B/Aa	Pan-specific	Protein-serine phosphatase 2B - catalytic subunit - alpha isoform	RpAb	NP_000935	Q08209	4	1	2	1					•
660	NP016-NP031	PP2Ca	Pan-specific	Protein-serine phosphatase 2C - catalytic subunit - alpha	RpAb	NP_066283	P35813	4	1	4	1					•
661	NP012-2	PP2A/Aa/b	Pan-specific	Protein-serine phosphatase 2A - A regulatory subunit - alpha and beta isoforms	RpAb	NP_002707	P30153	4	1	6	1	•				•
662	NP018	PP2Cd	Pan-specific	Protein-serine phosphatase 2C - catalytic subunit - delta isoform	MmAb	NP_110395	O15297	4	1	8	1					•
663	NP019	PP4/A'2	Pan-specific	Protein-serine phosphatase 4 - regulatory subunit (PPX/A'2)	RmAb	NP_005125	Q8TF05	4	1	10	1					•
664	NP020	PP4C	Pan-specific	Protein-serine phosphatase X - catalytic subunit (PPX/C)	RpAb	NP_002711	P60510	4	1	2	2					•
665	NP020-2	PP4C	Pan-specific	Protein-serine phosphatase X - catalytic subunit (PPX/C)	RpAb	NP_002711	P60510	4	1	4	2	•				•
666	NP021	PP5C	Pan-specific	Protein-serine phosphatase 5 - catalytic subunit (PPT)	MmAb	NP_006238	P53041	4	1	6	2					•
667	NP021-2	PP5C	Pan-specific	Protein-serine phosphatase 5 - catalytic subunit (PPT)	RpAb	NP_006238	P53041	4	1	8	2	•				•
668	NP022	PP6C	Pan-specific	Protein-serine phosphatase 6 - catalytic subunit (PPVC)	RpAb	NP_002712	O00743	4	1	10	2					•
669	PN062	PRAS40	T246	Proline-rich Akt substrate 40 kDa (Akt1S1)	RpAb	NP_115751	Q96B36	4	1	2	3					
670	NK148	PRK1 (PKN1)	Pan-specific	Protein kinase C-related protein-serine kinase 1	GpAb	NP_002732	Q16512	4	1	4	3		•			
671	PK095-PK096	PRK1 (PKN1)	T774	Protein kinase C-related protein-serine kinase 1	RpAb	NP_002732	Q16512	4	1	6	3		•			
672	NK149	PRK2 (PKN2)	Pan-specific	Protein kinase C-related protein-serine kinase 2	RpAb	NP_006247	Q16513	4	1	8	3		•			
673	NK149-2	PRK2 (PKN2)	Pan-specific	Protein kinase C-related protein-serine kinase 2	GpAb	NP_006247	Q16513	4	1	10	3	•	•			
674	NK150	PRKAB1	Pan-specific	5'-AMP-activated protein kinase (AMPK), beta-1 regulatory subunit	RpAb	NP_006244	Q9Y478	4	1	2	4		•			
675	NK151	PRKWNK4	Pan-specific	Putative protein-serine kinase WNK4	RpAb	NP_115763	Q96J92	4	1	4	4		•			
676	PN104	Progesterone Receptor	S294	Progesterone receptor	MmAb	NP_000917	P06401	4	1	6	4			•		
677	NK152	PRP4K	Pan-specific	Protein-serine kinase PRP4 homolog	RpAb	NP_003904	Q13523	4	1	8	4		•			
678	NN142	PSD-95	Pan-specific	Disks large homolog 4	MmAb	NP_001356.1	P78352	4	1	10	4					
679	NK204	PSTAIRE	Pan-specific	PSTAIRE	RpAb	NA	NA	4	1	2	5		•			
680	NP023	PTEN	Pan-specific	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and protein phosphatase and tensin homolog deleted on chromosome 10	MmAb	NP_000305	P60484	4	1	4	5					•
681	NP023-2	PTEN	Pan-specific	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and protein phosphatase and tensin homolog deleted on chromosome 10	RpAb	NP_000305	P60484	4	1	6	5	•				•
682	PP003	PTEN	S380+T382+S385	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and protein phosphatase and tensin homolog deleted on chromosome 10	RpAb	NP_000305	P60484	4	1	8	5					•
683	PP006	PTEN	S380+T382+T383	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and protein phosphatase and tensin homolog deleted on chromosome 10	RpAb	NP_000305	P60484	4	1	10	5	•				•
684	PP006-1	PTEN	S380+T382+T383	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and protein phosphatase and tensin homolog deleted on chromosome 10	RpAb	NP_000305	P60484	4	1	2	6	•				•
685	NP024	PTP1B	Pan-specific	Protein-tyrosine phosphatase 1B	MmAb	NP_002818	P18031	4	1	4	6					•
686	NP025	PTP1C	Pan-specific	Protein-tyrosine phosphatase 1C (SHP1, SHPTP1)	MmAb	NP_002822	P29350	4	1	6	6					•
687	NP026	PTP1D	Pan-specific	Protein-tyrosine phosphatase 1D (SHP2, SHPTP2, Syp, PTP2C)	MmAb	NP_002825	Q06124	4	1	8	6	•				•
688	NP026-2	PTP1D	Pan-specific	Protein-tyrosine phosphatase 1D (SHP2, SHPTP2, Syp, PTP2C)	RpAb	NP_002825	Q06124	4	1	10	6					•
689	PP004	PTP1D	S580	Protein-tyrosine phosphatase 1D (SHP2, SHPTP2, Syp, PTP2C)	RpAb	NP_002825	Q06124	4	1	2	7					•
690	NP036	PTPD1	Pan-specific	Protein-tyrosine phosphatase non-receptor type 21	RpAb	NP_008970.2	Q16825	4	1	4	7					•
691	NP027	PTP-PEST	Pan-specific	Protein tyrosine phosphatase, non-receptor type 12	MmAb	NP_001124480.1	Q05209	4	1	6	7					•
692	NK153	PyDK2 (PDHK2)	Pan-specific	Pyruvate dehydrogenase kinase isoform 2	RpAb	NP_002602	Q15119	4	1	8	7					
693	NK154	Pyk2	Pan-specific	Protein-tyrosine kinase 2	GpAb	NP_004094	Q14289	4	1	10	7		•			
694	PK097-3	Pyk2	Y579	Protein-tyrosine kinase 2	RpAb	NP_004094	Q14289	4	1	2	8		•			
695	NN150	Rab5	Pan-specific	Ras-related protein Rab-5A	RpAb	NP_004153.2.	P20339	4	1	4	8					
696	NN092-1	Rac1	Pan-specific	Ras-related C3 botulinum toxin substrate 1	MmAb	NP_001782	P60953	4	1	6	8					
697	PN063	Rac1	S71	Ras-related C3 botulinum toxin substrate 1	RpAb	NP_008839	P63000	4	1	8	8					
698	PN064	Rad17	S656	Rad17 homolog	RpAb	NP_579921	O75943	4	1	10	8					
699	NK155-2	Raf1	Pan-specific	Raf1 proto-oncogene-encoded protein-serine kinase	RpAb	NP_002871	P04049	4	1	2	9		•			

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
700	NK155-3	Raf1	Pan-specific	Raf1 proto-oncogene-encoded protein-serine kinase	RpAb	NP_002871	P04049	4	1	4	9	•	•			
701	NK155-4	Raf1	Pan-specific	Raf1 proto-oncogene-encoded protein-serine kinase	RpAb	NP_002871	P04049	4	1	6	9	•	•			
702	PK098	Raf1	S259	Raf1 proto-oncogene-encoded protein-serine kinase	RpAb	NP_002871	P04049	4	1	8	9		•			
703	NK205	RafA (Araf)	Pan-specific	A-Raf proto-oncogene serine/threonine-protein kinase	RpAb	NP_001645.1	P10398	4	1	10	9		•			
704	NK205-2	RafA (Araf)	Pan-specific	A-Raf proto-oncogene serine/threonine-protein kinase	RpAb	NP_001645.1	P10398	4	1	2	10	•	•			
705	NK156	RafB (Braf)	Pan-specific	RafB proto-oncogene-encoded protein-serine kinase	RpAb	NP_004324	P15056	4	1	4	10		•			
706	NK156-2	RafB (Braf)	Pan-specific	RafB proto-oncogene-encoded protein-serine kinase	RpAb	NP_004324	P15056	4	1	6	10	•	•			
707	NN093	Rb	Pan-specific	Retinoblastoma-associated protein 1	MmAb	NP_000312	P06400	4	1	8	10					
708	PN065	Rb	T356	Retinoblastoma-associated protein 1	RpAb	NP_000312	P06400	4	1	10	10					
709	PN066	Rb	S612	Retinoblastoma-associated protein 1	RpAb	NP_000312	P06400	4	1	2	11					
710	PN067	Rb	S780	Retinoblastoma-associated protein 1	RpAb	NP_000312	P06400	4	1	4	11					
711	PN068	Rb	S807	Retinoblastoma-associated protein 1	RpAb	NP_000312	P06400	4	1	6	11					
712	PN069	Rb	S807+S811	Retinoblastoma-associated protein 1	RpAb	NP_000312	P06400	4	1	8	11					
713	PN070	Rb	T821	Retinoblastoma-associated protein 1	RpAb	NP_000312	P06400	4	1	10	11					
714	PN071	Rb	T826	Retinoblastoma-associated protein 1	RpAb	NP_000312	P06400	4	2	2	1					
715	PN113	Rb	S608	Retinoblastoma-associated protein 1	MmAb	NP_000312	P06400	4	2	4	1					
716	PN131-1	Rb	S795	Retinoblastoma-associated protein 1	RpAb	NP_000312	P06400	4	2	6	1					
717	NN170	RelB	Pan-specific	Transcription factor RelB	RpAb	NP_006500.2	Q01201	4	2	8	1			•		
718	PN151	RelB	S573	Transcription factor RelB	RpAb	NP_006500.2	Q01201	4	2	10	1			•		
719	NK157	RIP2/RICK	Pan-specific	Receptor-interacting serine/threonine-protein kinase 2 (RIPK2)	MmAb	NP_003812	O43353	4	2	2	2		•			
720	NK158	RIPK1	Pan-specific	Receptor-interacting protein-serine kinase 1	MmAb	NP_003795	Q13546	4	2	4	2		•			
721	NK159-1	ROKa (ROCK2)	Pan-specific	RhoA protein-serine kinase alpha	MmAb	NP_004841	O75116	4	2	6	2		•			
722	NK159-2	ROKa (ROCK2)	Pan-specific	RhoA protein-serine kinase alpha	RpAb	NP_004841	O75116	4	2	8	2	•	•			
723	NK160	ROKb (ROCK1)	Pan-specific	RhoA protein-serine kinase beta	MmAb	NP_005397	Q13464	4	2	10	2		•			
724	NK161	RONa	Pan-specific	Macrophage-stimulating protein receptor alpha chain	MmAb	NP_002438	Q04912	4	2	2	3		•			
725	NK162	ROR2	Pan-specific	ROR2 neurotrophic receptor-tyrosine kinase	RpAb	NP_004551	Q01974	4	2	4	3		•			
726	NK163	ROS	Pan-specific	Orosomucoid 1 receptor-tyrosine kinase	RpAb	NP_002935	P08922	4	2	6	3		•			
727	NK164	RSK1	Pan-specific	Ribosomal S6 protein-serine kinase 1	RpAb	NP_002944	Q15418	4	2	8	3	•	•			
728	NK164-2	RSK1	Pan-specific	Ribosomal S6 protein-serine kinase 1	RpAb	NP_002944	Q15418	4	2	10	3		•			
729	PK157	RSK1	S352	Ribosomal S6 protein-serine kinase 1	RpAb	NP_002944	Q15418	4	2	2	4		•			
730	PK158	RSK1	T348	Ribosomal S6 protein-serine kinase 1	RpAb	NP_002944	Q15418	4	2	4	4		•			
731	PK099	RSK1/2	S221/S227	Ribosomal S6 protein-serine kinase 1/2	RpAb	NP_002944	Q15418	4	2	6	4		•			
732	PK100	RSK1/2	S363/S369	Ribosomal S6 protein-serine kinase 1/2	RpAb	NP_002944	Q15418	4	2	8	4		•			
733	PK100-2	RSK1/2	S363/S369	Ribosomal S6 protein-serine kinase 1/2	RpAb	NP_002944	Q15418	4	2	10	4	•	•			
734	PK101-1	RSK1/2	S380/S386	Ribosomal S6 protein-serine kinase 1/2	RpAb	NP_002944	Q15418	4	2	2	5		•			
735	PK101-2	RSK1/2	S380/S386	Ribosomal S6 protein-serine kinase 1/2	RpAb	NP_002944	Q15418	4	2	4	5	•	•			
736	PK102	RSK1/2/3	T573/T577/T57	Ribosomal S6 protein-serine kinase 1/2/3	RpAb	NP_002944	Q15418	4	2	6	5		•			
737	PK103	RSK1/3	9+S363/T356+S	Ribosomal S6 protein-serine kinase 1/3	RpAb	NP_002944	Q15418	4	2	8	5		•			
738	NK165	RSK2	Pan-specific	Ribosomal S6 protein-serine kinase 2	RpAb	NP_004577	P51812	4	2	10	5		•			
739	NK167	RYK	Pan-specific	RYK tyrosine-protein kinase	RpAb	NP_001005861.1	P34925	4	2	2	6		•			
740	PN073	S6	S235	40S ribosomal protein S6	RpAb	NP_001001	P62753	4	2	4	6					
741	PK156	S6K	S424	p70 ribosomal protein-serine S6 kinase	RpAb	NP_003152	P23443	4	2	6	6		•			
742	PK166	S6K	S411	p70 ribosomal protein-serine S6 kinase	RpAb	NP_003152	P23443	4	2	8	6		•			
743	NK223	S6Kb1	Pan-specific	Ribosomal protein-serine S6 kinase beta 1	MmAb	NP_003152	P23443	4	2	10	6		•			
744	NK223-1	S6Kb1	Pan-specific	Ribosomal protein-serine S6 kinase beta 1	RpAb	NP_003152	P23443	4	2	2	7	•	•			
745	NK223-2	S6Kb1	Pan-specific	Ribosomal protein-serine S6 kinase beta 1	RpAb	NP_003152	P23443	4	2	4	7	•	•			
746	PK145	S6Kb1	T252	Ribosomal protein serine S6 kinase beta 1	RpAb	NP_003152	P23443	4	2	6	7		•			
747	PK146	S6Kb1	T444+S447	Ribosomal protein serine S6 kinase beta 1	RpAb	NP_003152	P23443	4	2	8	7		•			
748	PK147	S6Kb1	T412	Ribosomal protein serine S6 kinase beta 1	RpAb	NP_003152	P23443	4	2	10	7		•			
749	NK222	S6Kb2	Pan-specific	Ribosomal protein-serine S6 kinase beta 2	RpAb	NP_003943	Q9UBS0	4	2	2	8		•			
750	NN133	SG2NA	Pan-specific	Striatin-3	RpAb	NP_001077362.1	Q13033	4	2	4	8					
751	PN074	Shc1	Y349+Y350	SH2 domain-containing transforming protein 1	RpAb	NP_003020	P29353	4	2	6	8					
752	PN161	Shc1	Y349	SH2 domain-containing transforming protein 1	RpAb	NP_003020	P29353	4	2	8	8					
753	NN095	Smac/DIABLO	Pan-specific	Second mitochondria-derived activator of caspase	RpAb	NP_620308	Q9NR28	4	2	10	8					
754	PN183	Smad1	S465	Mothers against decapentaplegic homologs 1	RpAb	NP_005891	Q15797	4	2	2	9			•		
755	PN075	Smad1/5/8	5/S463+S465/S	Mothers against decapentaplegic homologs 1/5/8	RpAb	NP_005891	Q15797	4	2	4	9			•		
756	PN184	Smad2	S467	Mothers against decapentaplegic homologs 2	RpAb	NP_005891	Q15797	4	2	6	9			•		
757	PN185	Smad2	T200	Mothers against decapentaplegic homologs 2	RpAb	NP_005891	Q15797	4	2	8	9			•		
758	NN096	Smad2/3	Pan-specific	SMA- and mothers against decapentaplegic homolog 2/3	MmAb	NP_005892	Q15796	4	2	10	9			•		
759	PN125	SMC1	S957	Structural maintenance of chromosomes protein 1A	RpAb	NP_006297.2.	Q14683	4	2	2	10					
760	PN177	SNCA	Y136	Alpha-synuclein	RpAb	NP_000336.1	P37840	4	2	4	10					
761	PN197	SNCA	S129	Alpha-synuclein	RpAb	NP_000336.1	P37840	4	2	6	10					
762	NN145	SOCS2	Pan-specific	Suppressor of cytokine signaling 2	RpAb	NP_003868.1.	O14508	4	2	8	10			•		
763	NN097	SOCS4	Pan-specific	Suppressor of cytokine signalling 4 (SOCS7)	RpAb	NP_543143	Q8WXH5	4	2	10	10			•		
764	NN098	SOD (Cu/Zn)	Pan-specific	Superoxide dismutase 1	RpAb	NP_000445	Q6ND84	4	2	2	11					
765	NN068	SOD (Mn)	Pan-specific	Superoxide dismutase [Mn]	RpAb	NP_000627	P04179	4	2	4	11					
766	NN068-1	SOD (Mn)	Pan-specific	Superoxide dismutase [Mn]	RpAb	NP_000627	P04179	4	2	6	11	•				
767	NN099	SODD	Pan-specific	Silencer of death domains (Bcl2 associated athanogene 4 (BAG4))	RpAb	NP_004865	O95429	4	2	8	11					
768	PN077	SOX9	S181	SRY (sex determining region Y)-box 9 (campomelic dysplasia, autosomal sex-reversal)	RpAb	NP_000337	P48436	4	2	10	11			•		
769	NN100	SPHK1	Pan-specific	Sphingosine kinase 1	RpAb	NP_892010	Q9NYA1	4	3	2	1					
770	NN101	SPHK2	Pan-specific	Sphingosine kinase 2	RpAb	NP_064511	Q9NRA0	4	3	4	1					
771	NK172	Src	Pan-specific	Src proto-oncogene-encoded protein-tyrosine kinase	MmAb	NP_005408	P12931	4	3	6	1		•			
772	NK172-2	Src	Pan-specific	Src proto-oncogene-encoded protein-tyrosine kinase	RpAb	NP_005408	P12931	4	3	8	1	•	•			
773	NK172-3	Src	Pan-specific	Src proto-oncogene-encoded protein-tyrosine kinase	RpAb	NP_005408	P12931	4	3	10	1	•	•			
774	NK172-4	Src	Pan-specific	Src proto-oncogene-encoded protein-tyrosine kinase	MmAb	NP_005408	P12931	4	3	2	2	•	•			
775	PK107	Src	Y419	Src proto-oncogene-encoded protein-tyrosine kinase	RpAb	NP_005408	P12931	4	3	4	2		•			
776	PK108	Src	Y530	Src proto-oncogene-encoded protein-tyrosine kinase	RpAb	NP_005408	P12931	4	3	6	2		•			
777	NN102-NN124	STAT1a	Pan-specific	Signal transducer and activator of transcription 1 alpha	RpAb	NP_009330	P42224	4	3	8	2			•		
778	NN102-NN124-2	STAT1a	Pan-specific	Signal transducer and activator of transcription 1 alpha	RpAb	NP_009330	P42224	4	3	10	2	•		•		
779	NN139	STAT1a	Pan-specific	Signal transducer and activator of transcription 1 alpha	RpAb	NP_009330	P42224	4	3	2	3	•		•		

Serial No.	Antibody Codes	Target Protein Name	Phospho Site (Human)	Full Target Protein Name	Antibody Type	Refseq	Uniprot Link	Meta Row	Meta Column	Row	Column	Redundant	Protein Kinase	Trans-cription Factor	Stress Protein	Protein Phosphatase
780	PN078-PN135	STAT1a	S727	Signal transducer and activator of transcription 1 alpha	RpAb	NP_009330	P42224	4	3	4	3			•		
781	PN079-PN136-1	STAT1a	Y701	Signal transducer and activator of transcription 1 alpha	RpAb	NP_009330	P42224	4	3	6	3			•		
782	NN103	STAT2	Pan-specific	Signal transducer and activator of transcription 2	RpAb	NP_005410	P52630	4	3	8	3			•		
783	PN080	STAT2	Y690	Signal transducer and activator of transcription 2	RpAb	NP_005410	P52630	4	3	10	3			•		
784	NN104	STAT3	Pan-specific	Signal transducer and activator of transcription 3 (acute phase response factor)	RpAb	NP_003141	P40763	4	3	2	4			•		
785	NN104-2	STAT3	Pan-specific	Signal transducer and activator of transcription 3 (acute phase response factor)	RpAb	NP_003141	P40763	4	3	4	4	•		•		
786	PN081-1	STAT3	S727	Signal transducer and activator of transcription 3	RpAb	NP_003141	P40763	4	3	6	4			•		
787	PN082	STAT3	Y705	Signal transducer and activator of transcription 3	RmAb	NP_003141	P40763	4	3	8	4			•		
788	PN082-1	STAT3	Y705	Signal transducer and activator of transcription 3	RpAb	NP_003141	P40763	4	3	10	4	•		•		
789	NN117	STAT4	Pan-specific	Signal transducer and activator of transcription 4 (acute phase response factor)	RpAb	NP_003142	Q14765	4	3	2	5			•		
790	NN105	STAT5A	Pan-specific	Signal transducer and activator of transcription 5A	RpAb	NP_003143	P42229	4	3	4	5			•		
791	PN083	STAT5A	Y694	Signal transducer and activator of transcription 5A	RpAb	NP_003143	P42229	4	3	6	5			•		
792	PN083-1	STAT5A	Y694	Signal transducer and activator of transcription 5A	RpAb	NP_003143	P42229	4	3	8	5	•		•		
793	PN119	STAT5A	S780	Signal transducer and activator of transcription 5A	RpAb	NP_003143	P42229	4	3	10	5			•		
794	NN106	STAT5B	Pan-specific	Signal transducer and activator of transcription 5B	RpAb	NP_036580	P51692	4	3	2	6			•		
795	NN107	STAT6	Pan-specific	Signal transducer and activator of transcription 6	RpAb	NP_003144	P42226	4	3	4	6			•		
796	NN108	STI1	Pan-specific	Stress induced phosphoprotein 1 (Hsc70/Hsp90 organizing protein (Hop))	MmAb	NP_006810	P31948	4	3	6	6					
797	NK173	STK33	Pan-specific	FLJ35932 protein-serine kinase	RpAb	NP_112168	Q8NEF5	4	3	8	6		•			
798	NN134	Striatin	Pan-specific	Striatin	RpAb	NP_003153.2.	O43815	4	3	10	6					
799	NK174	Syk	Pan-specific	Spleen protein-tyrosine kinase	MmAb	NP_003168	P43405	4	3	2	7		•			
800	PK159	Syk	Y323	Spleen protein-tyrosine kinase	RpAb	NP_003168	P43405	4	3	4	7		•			
801	NN171	Synapsin 1	Pan-specific	Synapsin 1 isoform Ia	RpAb	NP_008881	P17600	4	3	6	7					
802	PN084	Synapsin 1	S9	Synapsin 1 isoform Ia	RpAb	NP_008881	P17600	4	3	8	7					
803	NK175-2	TAK1	Pan-specific	TGF-beta-activated protein-serine kinase 1	RpAb	NP_663306	O43318	4	3	10	7		•			
804	NK175-3	TAK1	Pan-specific	TGF-beta-activated protein-serine kinase 1	RpAb	NP_663306	O43318	4	3	2	8	•	•			
805	NK175-4	TAK1	Pan-specific	TGF-beta-activated protein-serine kinase 1	RpAb	NP_663306	O43318	4	3	4	8	•	•			
806	NK175-5	TAK1	Pan-specific	TGF-beta-activated protein-serine kinase 1	MmAb	NP_663306	O43318	4	3	6	8		•			
807	PN085	Tau	S516	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	8	8					
808	PN086	Tau	S516+S519	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	10	8					
809	PN090	Tau	S713	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	2	9					
810	PN090-2	Tau	S713	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	4	9	•				
811	PN091	Tau	S717	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	6	9					
812	PN092	Tau	S721	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	8	9					
813	PN106	Tau	S519	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	10	9					
814	PN107	Tau	S739	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	2	10					
815	PN121	Tau	T522	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	4	10					
816	PN122	Tau	T548	Microtubule-associated protein tau	RpAb	NP_005901	P10636	4	3	6	10					
817	NK220-1	TBK1	Pan-specific	Serine/threonine-protein kinase TBK1	MmAb	NP_037386	Q9UHD2	4	3	8	10		•			
818	NK220-2	TBK1	Pan-specific	Serine/threonine-protein kinase TBK1	RpAb	NP_037386	Q9UHD2	4	3	10	10	•	•			
819	NK176	TEK (TIE2)	Pan-specific	Angiopoietin-1 receptor-tyrosine kinase	RpAb	NP_444515	Q02763	4	3	2	11		•			
820	NK177	Tlk1	Pan-specific	Tousled-like protein-serine kinase 1	RpAb	NP_036422	Q9UKI8	4	3	4	11		•			
821	NP034	TPIPb	Pan-specific	Phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase TPTE2	RpAb	NP_001135440.1	Q6XPS3	4	3	6	11					
822	NN110	TRADD	Pan-specific	Tumor necrosis factor receptor type 1 associated DEATH domain protein	MmAb	NP_003789	Q15628	4	3	8	11					
823	NN111	Trail	Pan-specific	Tumor necrosis factor-related apoptosis-inducing ligand	RpAb	NP_003801	P50591	4	3	10	11					
824	NK178	TrkA	Pan-specific	Nerve growth factor (NGF) receptor-tyrosine kinase	RpAb	NP_002520	P04629	4	4	2	1		•			
825	NK179	TrkB	Pan-specific	BNDF/NT3/4/5 receptor- tyrosine kinase	RpAb	NP_006171	Q16620	4	4	4	1		•			
826	PK160	TrkB	Y705	BNDF/NT3/4/5 receptor- tyrosine kinase	RpAb	NP_006171	Q16620	4	4	6	1		•			
827	NK180	TTK	Pan-specific	Dual specificity protein kinase	RpAb	AAA61239.1	P33981	4	4	8	1		•			
828	NK181	Tyk2	Pan-specific	Protein-tyrosine kinase 2 (Jak-related)	RpAb	NP_003322	P29597	4	4	2	2		•			
829	NK181-2	Tyk2	Pan-specific	Protein-tyrosine kinase 2 (Jak-related)	RpAb	NP_003322	P29597	4	4	4	2	•	•			
830	NK183-1	Tyro10 (DDR2)	Pan-specific	Neurotrophic receptor-tyrosine kinase of discoidin domain receptor family, member 2 precursor	RpAb	NP_006173	Q16832	4	4	6	2		•			
831	NK183-2	Tyro10 (DDR2)	Pan-specific	Neurotrophic receptor-tyrosine kinase of discoidin domain receptor family, member 2 precursor	RpAb	NP_006173	Q16832	4	4	8	2	•	•			
832	PN093-1	Tyrosine Hydroxylase	S70	Tyrosine hydroxylase isoform a	RpAb	NP_954986	P07101	4	4	2	3					
833	PN109	Tyrosine Hydroxylase	S18	Tyrosine hydroxylase isoform a	RpAb	NP_954986	P07101	4	4	4	3					
834	NN176	VEGF-C	Pan-specific	Vascular endothelial growth factor C	RpAb	NP_005420.1	P49767	4	4	6	3					
835	PK161	VEGFR2	Y1059	Vascular endothelial growth factor receptor-tyrosine kinase 2 (Flk1)	RpAb	NP_002244	P35968	4	4	8	3		•			
836	PK133	VEGFR2 (KDR)	Y1214	Vascular endothelial growth factor receptor-tyrosine kinase 2 (Flk1)	RpAb	NP_002244	P35968	4	4	2	4		•			
837	NP030	VHR	Pan-specific	Dual specificity protein phosphatase 3	MmAb	NP_004081	P51452	4	4	4	4					•
838	PN094	Vimentin	S34	Vimentin	MmAb	NP_003371	P08670	4	4	6	4					
839	NK184	Vrk1	Pan-specific	Vaccinia related protein-serine kinase 1	RpAb	NP_003375	Q99986	4	4	8	4		•			
840	NK185	Wee1	Pan-specific	Wee1 protein-tyrosine kinase	RpAb	NP_003381	P30291	4	4	2	5		•			
841	NP037	WIP1	Pan-specific	Protein phosphatase 1D	GpAb	NP_003611.1.	O15297	4	4	4	5					•
842	NK186	Yes	Pan-specific	Yamaguchi sarcoma proto-oncogene-encoded tyrosine kinase	MmAb	NP_005424	P07947	4	4	6	5		•			
843	NK186-2	Yes	Pan-specific	Yamaguchi sarcoma proto-oncogene-encoded tyrosine kinase	MmAb	NP_005424	P07947	4	4	8	5	•	•			
844	NK214	YSK1	Pan-specific	Serine/threonine-protein kinase 25	GpAb	NP_006365.2	O00506	4	4	2	6		•			
845	NK187	ZAP70	Pan-specific	Zeta-chain (TCR) associated protein-tyrosine kinase, 70 kDa	MmAb	NP_003168	P43403	4	4	4	6		•			
846	NK187-2	ZAP70	Pan-specific	Zeta-chain (TCR) associated protein-tyrosine kinase, 70 kDa	RpAb	NP_003168	P43403	4	4	6	6	•	•			
847	PK109	ZAP70/Syk	Y319/Y352	Zeta-chain (TCR) associated protein-tyrosine kinase, 70 kDa/Spleen protein-tyrosine kinase	RpAb	NP_001070	P43403	4	4	8	6		•			
848	CN003	pThr (MmAb)	pThr	Phosphothreonine reactive	MmAb	NA	NA	4	4	10	6					
849	NK188-1	ZIPK	Pan-specific	ZIP kinase (death associated protein-serine kinase 3 (DAPK3))	RpAb	NP_001339	O43293	4	4	2	7		•			
850	NK188-2	ZIPK	Pan-specific	ZIP kinase (death associated protein-serine kinase 3 (DAPK3))	RpAb	NP_001339	O43293	4	4	4	7	•	•			
851	CN001	Actin	Pan-specific	Actin	GpAb	NP_001092.1	P60709	4	4	10	7					
852	CN002	Tubulin	Pan-specific	Tubulin	RpAb	NP_006000.2	Q71U36	4	4	10	8					
853	CN004	pThr (RpAb)	pThr	Phosphothreonine reactive	RpAb	NA	NA	4	4	10	9	•				
854	CN005	4G10	pTyr	4G10 - Phosphotyrosine reactive	MmAb	NA	NA	4	4	10	10					