

## **Executive Summary**

Kinexus seeks to discover and track disease diagnostic biomarkers and therapeutic drug targets called protein kinases. These enzymes are the master communication and control proteins in all cells. They function within complex molecular signalling networks. Information about protein kinases is vital to the pharmaceutical industry for the accurate diagnosis and treatment of over 400 diseases of unmet medical need, including cancer, diabetes, stroke, and Alzheimer's. Kinexus is developing the capability to undertake the detailed characterization of over 500 human protein kinases and their targets. We are creating the world's first atlas of high resolution maps of cell signaling that are reflective of tissue, gender, age and health/disease status. Kinexus has developed proprietary, high throughput, methods, including protein microarray chips, that track the amounts and activation states of protein kinases in tissues and cells with specific antibody probes. We have built a protein kinase information databank that is unparalleled for its breadth and depth. We are mining this unique databank using bioinformatics for disease biomarker discovery and rational drug target selection. We plan to utilize these drug targets in partnerships with our clients for the development of new medicines. These activities will advance personalized medicine by our clients and partners for improved diagnosis and customized treatments of the major diseases that are responsible for most of the death, suffering and economic burden in developed countries.



Kinexus uses state-of-the-art facilities in a multi-tenant facility located on the main campus of the University of British Columbia. Over the last eight years, Kinexus has performed its proteomics services for more than 100 companies and 750 academic/government laboratories. We have provided our services for over 200 senior investigators in industry labs. We believe that over 10,000 laboratories world-wide could benefit from our proteomics services.



Cell signalling proteins are interconnected in complex networks that vary depending on the tissue, gender, age and health status of an individual. Defects in these communications network underlie most diseases of aging. World knowledge of the composition and architecture of cell signal transduction systems is only rudimentary and largely fragmented. Kinexus has developed a novel strategy to uncover important connections in these molecular communications networks.



The development of personalized medicine requires the identification of reliable biomarkers of disease and the development of an arsenal of specific drugs to treat these diseases. Only in this way can appropriate matches be made for a patient with an effective drug. Defective cell communications is well known to be at the root of most of the major diseases of aging as well as infectious diseases. Kinexus has developed novel methods to track biomarkers and understand their roles in cell signalling pathways. By offering this technology to our clients through our proteomics services, we have been able to accumulate a massive amount of data about cell signalling systems for biomarker discovery.



Kinexus has service contracts and has performed Kinetworks<sup>™</sup> analyses for over 750 academic labs and 200 industrial labs in over 100 companies around the world. This includes almost all of the leading pharmaceutical and biotech companies. Many of our corporate clients are willing to pay double the price for our services to maintain full confidentiality. Our service-based relationships with these companies is evolving into further customized activities with these companies that can pave the way for future corporate alliances as Kinexus develops its drug target and drug discovery capabilities.



There is a fundamental Human Operating System (H.O.S.) that controls all of the protein functions in the cells of our body. Mapping and understanding the H.O.S. is critical to diagnosing and treating human disease. Current knowledge of the H.O.S. is very rudimentary, despite over 2 decades of intense research. The H.O.S. has been around for over 200,000 years in our species, and it is very similar to the regulatory systems that operate in other animals. The sequencing of genomes of man and other species and the development of high throughput microarray technologies can accelerate H.O.S. discovery and exploitation. In particular, low abundance cell signalling proteins are the key to understanding how disease develops and how it can be reversed.

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The phosphorylation of a target protein with the third phosphate of adenosine triphosphate (ATP) is the basic chemical reaction catalyzed by a protein kinase. The kinase removes one of the phosphates from ATP and transfers it on to the target protein. This common mechanism is the major form of regulation of proteins after they are made inside of cells. It is essentially a molecular switch for turning proteins on and off. Phosphorylation is reversed by protein phosphatases.



With the aging demographics in developed countries, the need and demand for improved health care delivery is continuing to escalate. However, more than 70% of current prescription and non-prescription drugs only alleviate the symptoms of disease. The approval of new drugs by the US FDA in 2005 was only 20, down from 36 in 2004. There is strong pressure and challenges to the pharmaceutical industry to develop improved medicines.

Presently, 11 kinases inhibitors have been approved by the US Food and Drug Adminstration, and over 75 additional protein kinase inhibitors are in human clinical trials for the treatment of cancer, diabetes, heart disease, stroke, immune, and neurological disorders. Over 500 other protein kinase inhibitors are also in animal and cell trials. Several protein kinases inhibitors have already generated billions of dollars in revenues. However, more than 90% of the human protein kinases still remain to be explored as drug targets. Current drugs in clinical trials only target about two dozen protein kinases. Most of these are non-proprietary, and it is not clear that some are even really appropriate targets. Kinexus can provide information to our clients about which of these are the most promising to pursue.



Kinexus has created an unparalleled discovery engine to identify novel biomarkers that may also serve as drugable targets. Over the last 8 years, with extensive in-house testing, Kinexus has identified the best antibody probes for protein kinases and their targets from over 22 commercial suppliers. These are deployed in our Kinex<sup>™</sup> microarray and our Kinetworks<sup>™</sup> immunoblotting services. We are presently engaged in an initiative to incorporate several thousand new antibodies into our antibody microarray services.



The data generated from the provision of our proteomics services has been used to populate our KiNET functional proteomics database. Our technology has already been demonstrated in over 130 peer-reviewed scientific publications to identify research leads, novel biomarkers and validated drug targets.



Our unique suite of proteomics services have utility throughout the drug discovery and validation pipeline used in the pharmaceutical industry. Consequently, there are many ways that we can assist industrial scientists as well as basic researchers working in universities and hospitals throughout the world.



Our state-of-the-art proteomics services are highly integrated to form a convenient, powerful and unprecedented platform for biomedical discovery. The longer terms objectives of Kinexus are to build a strong intellectual property portfolio around disease diagnostic biomarkers and therapeutic drug targets. We believe that phosphoproteins offer a huge diversity of potential and untapped biomarkers and protein kinases represent a still largely unexplored reservoir of enzymes for drug discovery. There are likely to be over 1 million potential phospho-sites in the human proteome. Kinexus has catalogued over 20,000 phospho-sites and has been performing a careful bioinformatic analysis of their potential for disease biomarkers.



Over the last 8 years, Kinexus has developed and launched a portfolio of unique services, which are inter-linked to provide an unparalleled biomarker and drug target discovery platform. The barrier to entry for a competitor is extremely high, and several of our current competitors are presently in strategic discussions to partner with Kinexus.



Over the last decade, gene microarrays have been used to create a market that now exceeds \$1 billion for the analysis of gene activation. However, studies of proteins are vastly more informative about disease status and mechanisms of actions of drugs to counteract disease.

To track the presence of proteins in tissues and cells, researchers have initially turned to indirect methods based on whether a gene is activated to produce its protein product. Gene activation is monitored by whether mRNA transcripts are produced from the gene. This is tracked with chips called gene microarrays that are spotted with oligonucleotide probes that are specific for each gene. It is becoming well recognized now that the correlation between mRNA levels and protein levels is actually less than half the time and for cell signalling proteins, this appears to be lower than 25%. The correlation between total protein levels and the activated (phosphorylated) forms of the same proteins is even worse and can often be inversely related. The phosphorylated states of proteins will ultimately determine a cell's behaviour. Consequently, monitoring the phosphorylation states of proteins can provide the most valuable information about the changes underlying disease and drug actions.

Only a couple of commercial antibody microarrays are presently available, and in view of the infancy of this technology and its high potential, the market for protein chips is expected to increase by several hundred-fold over the next 5 years. Kinexus is already recognized as a strong leader in cell signalling proteomics. Our aim to build on this to become the undisputed world leader and capture greater than 50% of the market share in protein microarrays. Moreover, we plan to also acquire a significant portion of the scientific data that will be generated with this powerful technology for our own databases.



Kinexus antibody microarray services use the most comprehensive array of antibodies that is available commercially today. The Kinexus antibody microarrays are also more accurate, precise and cost-effective than any of our competitors. We are presently working on a reverse microarray that features the extracts from hundreds of tissues and cells printed onto a microscope slide for rapid characterization of novel proteins identified with our antibody microarrays. Our goal is to produce an antibody microarray that can be used to track thousands of different proteins and their phospho-sites within the next 5 years. This could become the standard platform for disease diagnosis and monitoring the effectiveness of diverse therapies for personalized medicine.



Kinexus has formulated an extremely novel business model, which defies its assignment within one of the traditional biotech company categories. It is true that the revenues generated from providing our proteomics and bioinformatics services provide strong financial support for our R&D programs. However, these service-based activities are primarily a means by which our company is able to access thousands of high quality biological specimens for use in our R&D programs to discover disease biomarkers, drug targets and drugs.

With our unique business model, the leveraging of our initial service relationships with pharmaceutical and biotech companies overtime into collaborative partnerships is a major way that we will increase the valuation of our company for our shareholders. It is a natural progression to develop closer relationships with our clients as we are able to offer them a greater selection of customized services and expertise. We have also been building closer working relationships with our antibody suppliers to offer new proteomics services and products that can be distributed through these vendors.

Furthermore, because Kinexus will have valuable knowledge over a broad range of diseases, it is feasible to enter into and manage multiple corporate alliances to increase the prospects of participation with successful drug launches into the pharmaceutical market.

Finally, the development of the microarray capabilities of Kinexus will foster partnerships with diagnostic companies for the detection of specific diseases and identification of the most appropriate therapies for personalized medicine delivery.



Kinexus has developed its own unique systems proteomics platform technology that has already proven its value in the marketplace. And we have a clear course of action to enhance this strategic advantage.

We believe that Kinexus represent an outstanding investment opportunity for these times, when investors rightly perceive the high risk associated with traditional drug discovery companies. Through Kinexus, investors may realize the enormous financial opportunity associated with healthy care delivery, and contribute in a meaningful way to biomedical research in hundreds of laboratories around the world that are seeking to diagnose and cure major diseases of unmet need.



Dr. Steven Pelech is the founder, president and chief scientific officer of Kinexus. He was also the founder, president and C.E.O. of Kinetek Pharmaceuticals, Inc. for six years prior to starting Kinexus. He has also been a professor at the University of British Columbia (UBC) for the last 18 years. He is the author of over 200 scientific publications. He received his Ph.D. in Biochemistry from UBC (1982).

Ms. Catherine Sutter has over thirteen years of experience in human resources and administration including five years at Kinexus, five years at Kinetek Pharmaceuticals, three years at UBC and two years working for Gulf Shark Research in Bayou la Batre, Alabama. She received her B.Sc. degree in Biochemistry from the University of Victoria in 1989.

Mr. Quan joined Kinexus in March 2006. He is responsible for the development of financial statements and management reports, development of systems and accounting procedures including financial planning and analysis, general accounting, financial control, procurement, forecasting, and preparation of operating and capital budgets. Mr. Quan contributes over twenty years of financial management expertise to Kinexus, most recently as the controller for Westcoast Energy, Kinetek Pharmaceuticals. Inc., the Vancouver Police Department, and GenomeBC.

Dr. Hong Zhang joined Kinexus in January 2003. He is responsible for directing the laboratory staff in the design and testing of new and existing technical products or services, and participates in long range technical planning of scientific projects. Dr. Zhang received his B.Sc. degree (1987) in Fujian Normal University in China with the Top Graduate Award. He completed his Ph.D. degree (2000) in Zoology from UBC and received two years of post-doctoral training at UBC.



Mr. John J. Swift is a lawyer in Vancouver, B.C., with an independent practice centered on organising, financing and advising knowledge-based businesses and on technology transfer from public institutions and universities. Formerly a partner at Farris & Co., Mr. Swift was Counsel to several technology based corporations. Inc. In addition to serving as Chairman and as a Director of Kinexus, Mr. Swift is currently a director of Connotative Reference Corporation, Biofuture Fund and of Spark Robotics Technology Inc. and has served on the Boards of Inex Pharmaceutcals, Ultrasonix Medical Corporation and NeuroMed Technologies Inc.

Mr. Eric Ah-Yon is the president of Mickeric Enterprises Ltd., which holds a portfolio of privately held assets and publicly listed companies across various industry sectors. Mr. Ah-Yon is experienced in the real estate development, building construction and property management. In addition, he is the managing director of Vencompass Group Enterprises Ltd., and Cellbox Solutions Inc., an I.T. based company. Mr. Ah-Yon holds a Bachelor of Business Administration in Finance and Management from Simon Fraser University and a Diploma of Technology in Building Engineering Technology Economics/ Construction Operations from the B.C. Institute of Technology.

Dr. William Campbell is the president of Biomime Solutions, a B.C. incorporated biotechnology consulting firm, and the CEO of PepMetric Technologies a peptide-based drug design company. Over the last 30 years, Dr. Campbell has divided his time between Japan and Canada, most recently as assistant professor at Nagoya City University and then at the Choju Medical Institute in Toyohashi. His previous early employment includes work for the Department of Health and Welfare Canada, and for Pharma Research (Boeringer) in Montreal. He completed his B.Sc. in Chemistry at Concordia University (1962) and obtained his PhD in Microbiology and immunology from the University of Montreal (1971).

Mr. Angus Livingstone is Managing Director of the University-Industry Liaison Office (UILO) at the University of British Columbia (UBC), where he has held prior positions cince 1988. He is the President of UBC Research Enterprises Inc. and co-founder and Chair of the Alliance for the Commercialization of Canadian Technology. Mr. Livingstone also serves on numerous other boards including: Alliance for Commercialization of Canadian Technologies; UBC Research Enterprises, Inc.; Drug Development Inc.; Webnames.CA, Inc.; and Vancouver Coastal Health Research Trust. He graduated from UBC with a B.Sc. in Computer Science (1983).

