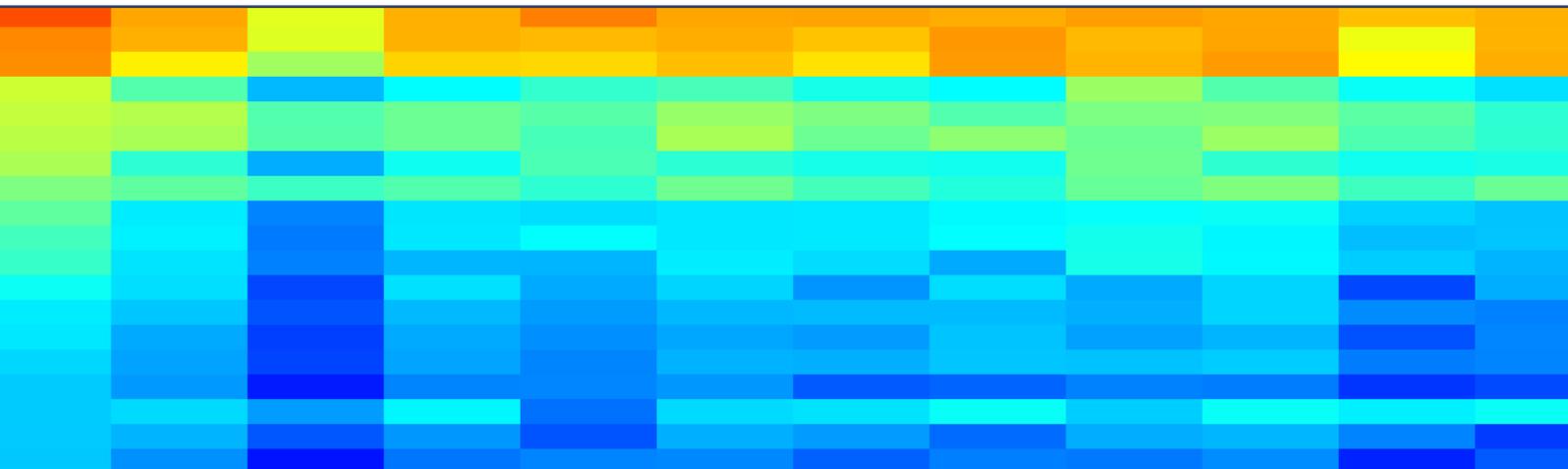


KINASE ACTIVITY: A TOTAL SOLUTION

PROTEIN ARRAYS FOR MULTIPLEX KINETIC MEASUREMENTS

ROBUST INSTRUMENTATION • USER FRIENDLY SOFTWARE



KINETIC DATA AT YOUR FINGERTIPS!

PAMGENE'S NOVEL PLATFORM FOR PROFILING KINASE ACTIVITY USES PEPTIDE PAMCHIP® MICROARRAYS AND THE PAMSTATION® INSTRUMENT TO ACCELERATE CELL SIGNALLING RESEARCH.

PamGene, an innovative biotechnology company in The Netherlands, has developed a new technology which enables researchers to see the specific activity that kinases exhibit in cells. This leads to further elucidation of normal and aberrant cell signalling processes. The technology is used in a variety of applications, different model systems and an extensive range of sample types.

Cancer researchers worldwide are using this innovative platform to accelerate their research into kinase and kinase inhibitor drugs. The technology is also used in basic biology studies and other therapeutic research areas such as immunology, and diseases affecting the central nervous system and cardiovascular system.

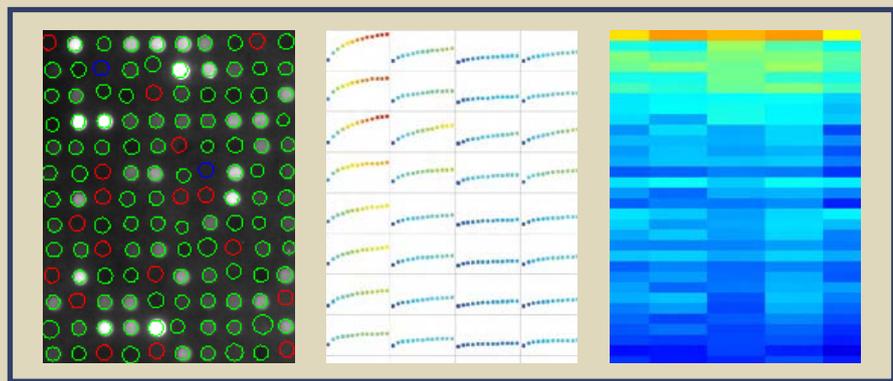
PamGene microarray technology was first presented in 2001 for nucleic acid applications. Today, the platform is mainly used for kinase and kinase inhibitor drug research.

The platform includes:

1. Peptide microarrays (PamChip®arrays) and reagents
2. Workstation (PamStation®12 hardware)
3. Data analysis & interpretation package (BioNavigator software)



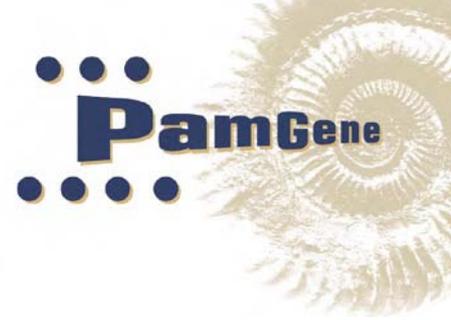
Microarray



BioNavigator for data analysis

A COMPLETE, MULTIPLEX SOLUTION FOR LOOKING AT CELL SIGNALLING:

- ELUCIDATION OF PATHWAYS • TRUE FUNCTIONAL PROTEOMICS
- HIGH THROUGHPUT KINETICS • KINASE ACTIVITY ANALYSIS



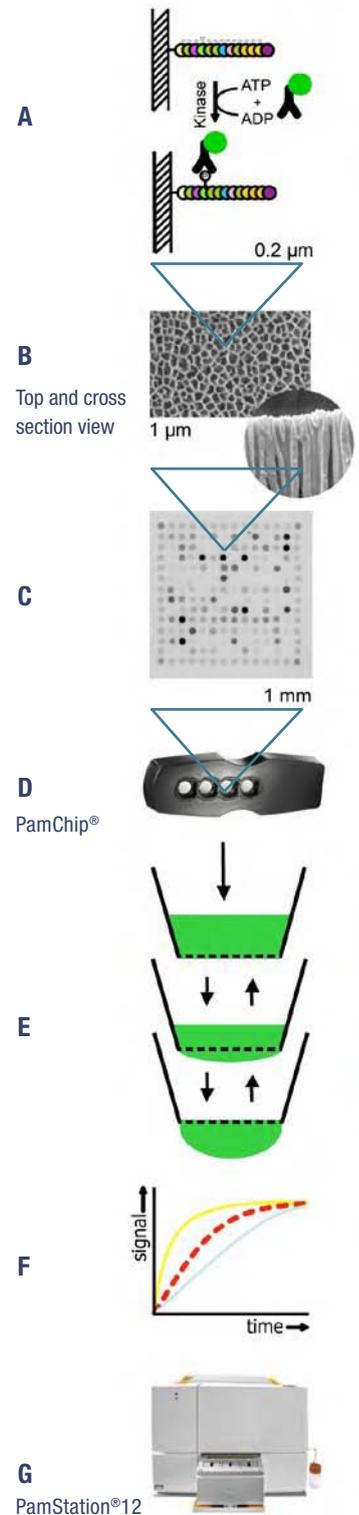
Measurements - The technology is based on measuring peptide phosphorylation by protein kinases. The peptides are immobilized on a dedicated microarray which allows multiplex measurements. Fluorescently labeled anti-phospho-antibodies are used to detect phosphorylation (fig A).

The microarrays are made of a highly porous ceramic membrane (fig B). Some 144 peptide substrates are immobilised per microarray (fig C). A PamChip® consist of four arrays (fig D).

The assay as shown in figure A detects kinase activity from the kinome present in cells or tissue lysates kinetically in about one hour (fig F). The workstation does this by moving the sample solution up and down through the array providing the kinases maximal opportunity to phosphorylate the peptides on each array (fig E).

Capture - When the sample solution is placed under the microarray, the CCD camera in the workstation takes an image of each array. A fully automated workstation called PamStation®12, which has received CE marking in Europe, does the incubation, washing, dispensing of reagents and imaging of the PamChip® array (fig G).

This workstation usually takes 15 images during the one hour incubation period. The data analysis workflow, which includes image quantification, quality control, statistical analysis, visualization and interpretation, is performed using the BioNavigator software.

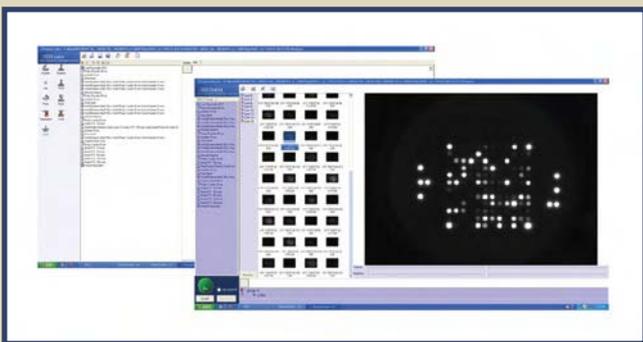




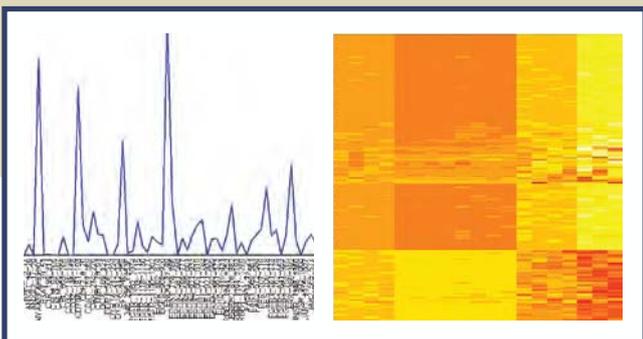
PamChip[®]



Pamstation[®]12: Load up to three PamChips[®]



Processing: incubate and read



Interpret data

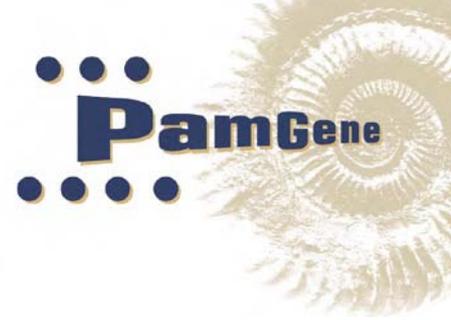
Standard workflow - The PamStation[®]12 workstation and PamChip[®] arrays are used for measuring kinase activity. The reaction takes place on immobilised peptides on the array. Peptide phosphorylation can be monitored for recombinant kinases and in lysates of cell lines or tissue via a real time fluorescent readout, using fluorescent labeled antibodies.

PamStation[®]12 allows between one and twelve arrays per run to be tested. A run takes about one hour to perform. The progress of the reaction is monitored in real time by taking images every five minutes. Images are analyzed and statistical analysis is performed using the BioNavigator software suite developed by PamGene.

PamAcademy is one of PamGene's new initiatives to help you successfully apply our technology to enhance your functional proteomics research. We share our experience and expertise with you so that you can reach your goals faster. It covers a range of topics from sample preparation for kinase profiling to biological interpretation of complex data. We offer training modules for protocols for each assay in our product portfolio. PamAcademy empowers you to use the capabilities of PamGene's BioNavigator software for data visualization, computation and interpretation. The BioNavigator education modules allow you to progress from a basic to an advanced user enabling knowledge integration of PamChip data. With hands-on training tailored to your own data, you can directly apply your knowledge to your research goals. PamAcademy will assure continued support for you, so that you know we are always interested in your success.

A FUNCTIONAL PROTEOMICS - A MULTIPLEX SOLUTION FOR KINASE ACTIVITY MEASUREMENTS:

- MULTIPLEX • HIGH THROUGHPUT KINETICS • USER FRIENDLY SOFTWARE
- RESULTS IN ONE HOUR



PamChip®



Pamstation®12: Load up to three PamChips®



Processing: incubate and read



Interpret data

PAMGENE PRODUCTS

Description	Article code
PamStation®12 instrument	31500
PamStation®12	
Desktop PC	
Evolve Instrument Control software	
BioNavigator Data Analysis software	
Tyrosine Kinase PamChips® for PamStation®12 , 12 pcs	32500
Serine/Threonine Kinase PamChips® for PamStation®12 , 12 pcs	32501
Reagent kit for Tyrosine Kinase PamChips®, 48 reactions	32112
Reagent kit for Serine/Threonine Kinase PamChips®, 48 reactions	32201
BioNavigator 6 stand-alone version	59012
BioNavigator 6 renewal fee (per year)	59013
BioNavigator 6 additional user fee (per year)	59014
Bioinformatic support	59010
Basic training for Tyrosine Kinase assays (instrument handling, assay training and data analysis)	33200
Basic training for Serine/Threonine Kinase assays (instrument handling, assay training and data analysis)	34200

PamGene International B.V. offers advanced training for a broad range of PamStation®12 applications, please contact your local sales representative for further information.



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PamGeners in The Netherlands



PamGene in The Netherlands

Since it was founded in 2001, PamGene has successfully developed and marketed its patented PamStation® instrumentation and the PamChip® arrays which are used in a variety of life sciences applications, especially in oncology. The company is now the #5 SME (Small and Medium Enterprise) in the Netherlands patent-wise and has introduced a number of significant innovations in its field. This work has been performed in close collaboration with many local and international partners in industry and academia.

