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HIGH THROUGHPUT METHOD TO MEASURE THE FUNCTIONAL ACTIVITY OF MULTIPLE KINASE ENZYMES SIMULTANEOUSLY

Tech ID: 24878 / UC Case 2014-125-0

TECHNOLOGY DESCRIPTION

UCSF researchers have developed a platform to enable direct measurement of the activity of multiple kinase enzymes in a cell simultaneously, thereby enabling the mapping of functional kinase networks.

Current methods to assess the functional state of kinase networks, detect the phosphorylated state of kinases, but do not measure the catalytic activity of kinases. Furthermore, these assays are limited to detecting the inert quantities of proteins which does not accurately reflect changes in functionality of kinase enzymes. The inventors sought to develop an authentic kinase activity mapping assay that could provide additional information about otherwise undetectable alterations in upstream and downstream phosphorylation circuits. Their assay is relevant to all areas of biology and medicine where kinases or phosphorylation events are implicated, from oncology to cardio-vascular diseases, neurodegenerative disorders, or basic biochemistry and cell biology studies.

This method provides the following advantages:

- ▶ Directly and specifically measures activity of multiple kinase enzymes simultaneously
- ▶ Robust, quantifiable high throughput system
- ▶ Operationally simple approach
- ▶ Evaluates peptide targets for each kinase
- ▶ Yields phospho-signature of both healthy and diseased cells
- ▶ Enables mapping of functional kinase networks
- ▶ Enhances screening of kinase inhibitors

APPLICATIONS

- ▶ Pharmacological and small compound screens
- ▶ Laboratory research and discovery

STAGE OF DEVELOPMENT

Preclinical

PATENT STATUS

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OTHER INFORMATION

KEYWORDS

Functional Kinase Networks,

Kinase Signatures

CATEGORIZED AS

- ▶ Research Tools
- ▶ Expression System
- ▶ Screening Assays

RELATED CASES

2014-125-0

Country	Type	Number	Dated	Case
European Patent Office	Published Application	3775185	02/17/2021	2014-125

Additional Patents Pending

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