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

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## 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

CONTACT

Kristin A. Agopian
kristin.agopian@ucsf.edu
tel: 415-340-2619.




## 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 |
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| European Patent Office | Published Application | 3775185 | 02/17/2021 | 2014-125 |

Additional Patents Pending

ADDRESS

**UCSF**

**Innovation Ventures**

600 16th St, Genentech Hall, S-272,

San Francisco,CA 94158

CONTACT

Tel:

innovation@ucsf.edu

https://innovation.ucsf.edu

Fax:

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