

## Technology Offer

### Micro-array reactome – From metabolic networks till gene information

Reference Number: TO 02-00276

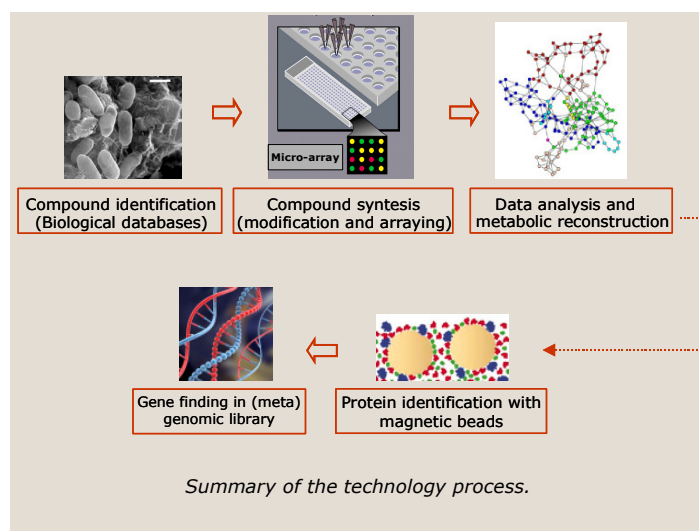


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### Challenge

The knowledge of microbial metabolism through the detection of the enzymes involved would help to develop predictive simulation models of toxic effects, to link molecular biomarkers with population-level effects, and then to anticipate ecologic risk assessment issues for new chemicals. However there are difficulties as to the many variables concerned in analyzing the status of natural populations in a real ecosystem and the reconstruction of

metabolic networks by the uncertainty level of data interpretation of the genes. Also until now there is no micro-array reactome that could provide such huge amount of metabolic information and life style of communities.



### Technology

The technology discloses a powerful tool to analyze the complexity of life functions of an organism or communities living in a habitat (lifestyle of communities) through micro-array approach for mapping functional metabolic networks, the reactomes, of cell

populations and entire communities. Specifically designed arrays contain magnetic nanoparticles coated with substrates, the metabolic state of a cell is provided independently of sequence information of genes with little amount of sample. Accordingly, the invention gives also the knowledge of unknown proteins and consequently the genes responsible for their production.

### Commercial Opportunity

In-licensing for integration in existing array technology platforms, or cooperation for further development of the diagnostic potential of this system is viable.

### Developmental Status

The global metabolic activities and life style of the bacteria *Pseudomonas putida* were tested for instance.

### Patent Situation

Patent number EPO9003977 and US61/210,482; Priority data: 19.03.2009

### Further Reading

Ana Beloqui, et al. (2009): Reactome Array: Forging a Link between Metabolome and Genome. *Science* 326, 252-257;

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