

Biofactory introduces kits for assessment of protein-DNA interactions, targeting researchers and industry

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The Biofactory, a leading innovator in incubating biomedical and life sciences related technologies, introduced today its ColoQuik line of label-free kits for the rapid colorimetric detection of protein-DNA interactions in biomedical research labs and the pharmaceutical industry. These kits are based on technology licensed from the Institute of Materials Research and Engineering (IMRE), a research institute of the Agency for Science, Technology and Research (A*STAR), Singapore's lead government agency for fostering world-class scientific research. The Biofactory has three kits in its pipeline, each customized for the assessment of a well-known transcription factor in cancer: ER α , ER β , and p53.

The ColoQuik kits will be particularly suited for pharmaceutical companies or [academic researchers](#) who require tools for the analysis of protein-DNA interactions at a higher level of throughput. ColoQuik kits will find strong utility in primary screens for drugs that can modulate protein-DNA interactions, or in QC analyses of purified [DNA-binding proteins](#) based on their DNA-binding capacities.

Conventional techniques for the analysis of protein-DNA interactions tend to pose numerous restrictions and drawbacks upon their users in terms of assay time, expense and throughput. Some methods can involve extensive protocol optimization and materials preparation, with tedious procedures lasting as long as 2 days. Others necessitate tagging of the

DNA with [radioactive isotopes](#) prior to running the test, which can result in safety and environmental issues. Label-free assays for academia or industry have typically involved hardware and software costs, which limit their utility for primary [drug screening](#).

In comparison, users will find ColoQuik assays much easier to use. These tests require only a half-hour to complete on average, and allow for instant visual detection of [reagent](#) colour changes based on the quality and affinity of binding between a protein and a specified DNA sequence. The test does not require radioactive or fluorescent labeling of DNA which leads to significant time and cost savings on preparatory work. ColoQuik tests require only standard equipment such as microplate absorbance readers for semi-quantitative readouts. As such, these kits are amenable to high-throughput drug discovery applications and batch functional analysis of transcription factor production.

The key technology in the kits is the custom-made, nanometer-sized metal particles created at A*STAR's IMRE. The particles act as probes which give off different colours depending on the specific protein-DNA combinations that are formed in the nanoparticle solution. "These kits offer the easiest and fastest ways to date for scientists to analyse a particular DNA binding protein for its impact on the gene transcription mechanism of specific diseases," said Dr Su Xiaodi, the IMRE Senior Scientist who led the nanoparticle work.

The Biofactory has received beneficial technology assessments from leading scientists who have utilized the technology for their specific experiments. The Biofactory is in the process of manufacturing and marketing the kits to research institutions and pharmaceutical laboratories both in Singapore and around the world.

"The licensing of our materials technology for use in protein-DNA analysis is testament to the value of our research to industry. This

development is also a prime example of cross-disciplinary research in action," said Prof Andy Hor, IMRE's Executive Director. "We look forward to seeing this revolutionary new technique being developed further to aid in advancing global healthcare."

"The Biofactory is honoured to be part of the commercialization process. With our expertise in product and business development, we will continue to guide other Singapore-based biomedical innovations towards market success," said Theodore Tan, Managing Director of The Biofactory.

The ColoQuik kits will be introduced at this year's MEDICA exhibition in Dusseldorf, Germany. For more product information or licensing enquiries, interested parties may visit thebiofactory.com/coloquik.

Provided by Agency for Science, Technology and Research (A*STAR), Singapore

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