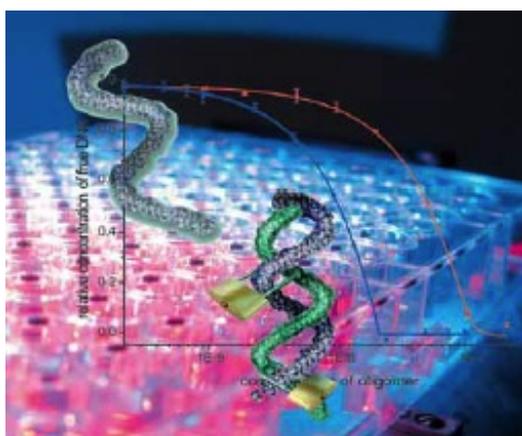


Healthcare industry BW

Biometrics - High-tech analytics for the life sciences

Biometrics Marken and Rechte GmbH has developed new analytical devices based on reflectometric interference spectroscopy thus adopting the trend of label-free detection methods.

In bioanalytical chemistry, a great deal of effort goes into the replacement of labelling methods with label-free methods. This is because labelling tends to interfere with the natural activity of the biomolecules under investigation. The application of label-free techniques also reduces costs as it renders analytical procedures simpler. These techniques enable the quantification of biomolecules as well as providing important information on the kinetics of their interaction processes, which is of great importance when developing new pharmacological substances. Biometrics Marken and Rechte GmbH represents the development and protection of brands, the know-how and patent rights of a unique product family that is used for label-free biomolecular interaction analyses in the life sciences sector.



(Figure: Biometrics Marken und Rechte GmbH)

Biometrics is a spin-off company of the University of Tübingen that was established in May 2007 by a team of young scientists from different disciplines. In order to successfully master the initial obstacles normally faced by a start-up company, the scientists received valuable support from Professor Dr. Günter Gauglitz, the head of the Steinbeis Transfer Centre Optical Chemo- and Biosensors at the University of Tübingen. This assistance from such a quarter is helping Biometrics to successfully launch its highly innovative products. The young company is supported by the "Young Innovators" programme of the state of Baden-Württemberg; Steinbeis is also part of the

group of reviewing bodies that assess “Young Innovator” projects.

Biametrics’ product family comprises three product lines:

- Versatile and very cost-efficient OEM detection units for one or a few detection sites, used for example in patient-oriented diagnostics
- An analytical platform for high-density arrays with up to 750 detection sites, which has a detection limit and efficiency that is similar to that of single channel biosensors
- A microtitre plate-based HTS analysis system

Reflectometric interference spectroscopy as label-free, direct-optical detection method

Based on what is known as reflectometric interference spectroscopy (RIfS), Biametrics has developed analytical devices that are simpler and more robust than previous systems, but which have the same detection capacity.

RIfS is an especially versatile, time-resolved, label-free detection method. Compared to other direct-optical methods, the temperature stability of reflectometric interference spectroscopy is of particular advantage. RIfS is the only label-free, direct-optical detection method that can be coupled to electrophoretic systems used to separate protein mixtures or to mass spectrometric analyses for the subsequent determination of protein structure. The ability to combine the method with other technologies makes RIfS suitable for high-content screening.

The new technology has numerous advantages

Biametrics’ technology has many unique features. The technology enables the time-resolved detection of any kind of biomolecular interactions as well as the study of living cells. Coated glass, plastics and other transparent materials can be used as carrier materials. The technique is not limited to gold-coated carriers, which is of particular importance for protein arrays since proteins tend to denature on gold surfaces. The technique is also not sensitive to temperature fluctuations, which makes it very robust. This enables scientists to change the temperature during detection. The coupling with electrophoresis (separation of protein mixtures) and mass spectrometry (determination of the structure) enables the unique combination of methods that opens up new paths, in particular in the development of pharmaceuticals.

Biametrics’ label-free HTS analytics platform can be used for a broad range of life sciences applications. It enormously facilitates the screening of substance libraries for potential pharmaceutical substances. All investigations can be carried out as freely scalable high-density arrays or in microtitre plate format.

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