

Schering AG's platform for miniaturised kinase assays

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Abstract

Different types of kinase assays (e.g. Ser-kinase or Tyr-kinase, primary HTS or selectivity assay) have different needs and limitations as well as the different assay technologies have their specific strengths and weaknesses.

High data quality is a must for all assays, but throughput and costs are important mainly for HTS assays whereas for selectivity assays the speed of assay development might be more important.

Each assay type can be optimally addressed by a certain assay technology. However, for optimal data comparability it is highly desirable to use a single assay technology for all kinds of kinase assays. In our evaluation of the most prominent assay technologies HTRF[®] turned out to be most versatile and cost efficient. Special advantages are the high potential for miniaturisation and the low enzyme demand. In consequence we have selected HTRF[®] as our standard kinase assay technology.

Based on HTRF[®] we have built up a whole platform for the fast and cost-effective development and performance of all kinase assays, primary HTS as well as compound characterisation, in the 5- μ l-scale. The platform comprises tools for the rapid identification of high quality peptide substrates and suitable corresponding specific antibodies, and standard procedures for effective assay development and compound logistics. Examples are given for the conversion of SPA assays as well as for the development of new Ser/Thr kinase HTS assays.

Resume

Dr. Ulf Bömer holds the position of Head Technology Development & HTS Infrastructure at Bayer Schering Pharma AG in Berlin (Germany). Besides his responsibility for the improvement of the HTS operations by evaluation and implementation of new equipment, software and assay technologies, he heads the Kinase Assay Center, in which the biochemical kinase assays for lead candidate evaluation and optimisation are centralised.

Between 1997 and 2002 he worked at Schering as a group leader in the HTS department with responsibility for development and implementation of biochemical and cell based HTS assays.

After studying chemistry in Hamburg and Freiburg Dr. Bömer qualified for his Ph.D in the laboratory of Prof. N. Pfanner at the University of Freiburg, Germany, with a thesis on mitochondrial protein import.