Evaluation of the Fusion Optics of Tecan’s Spark™ 10M for HTRF® assay technology

The unique Fusion Optics enables the combination of filters and monochromators within one instrument for excellent performance in high throughput screening and the flexibility required for assay development.

Wolfgang Söhr, Michael Fehr, Sandrine Cabrol, Delphine Jaga, François Degorce

Introduction
Homogeneous time-resolved fluorescence (HTRF®) is a time-resolved fluorescence resonance energy transfer (FRET)-based assay system from Cisbio Biosciences for the analysis of various molecular interactions and binding studies. Basic energy transfer between a long-lived europium or terbium donor and a variable- or fixed-emission green acceptor, the assay combines the advantages of FRET and TR-FRET.

HTRF assays play high sensitivity demands on multimode readers. Tecan’s latest multimode reader, the Spark 10M, offers a number of features to meet these demands and ensure optimal assay performance.

Results
HTRF reader control kit
The Spark 10M delivers excellent results for the RCK using filters on the emission side. On the excitation side, both filters and MCRs can be used to meet Cisbio’s acceptance criteria (Table 4). Therefore, validation of the Spark 10M reader for HTRF® was performed with both filter/filter and MCR/filter combinations. The measurement results demonstrate the suitability of the Spark 10M for HTRF® analysis. The Spark 10M meets all the Cisbio performance specifications defined for black and white plates in both measurement modes and for black plates using filters only (Table 4).

Cisbio Criteria Filter/filter MCR/filter
Table 4: Example measurement results for the cAMP coupled to green acceptor using the [CAMP]HiRange kit (filter only) and the Fusion Optics (MCR) with white and black plates.

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