

Cell based assays for screening

Workshop agenda: December 2014

Day 1	
9:00-9:30	Introductions.
9:30-10:00	Keynote Lecture: Phenotypic screening in cancer drug discovery — past, present and future.
10.00-10:30	Lecture: Introduction to drug discovery and the design and development of cell based assays for drug discovery purposes - what can be achieved and learnings from past successes and failures, screening jargon and terms.
10:30-10:45	Break.
10.45-11.15	Case study: Phenotypic cell based assay development and screening.
11:15-11:45	<p>Overview of practical work for Day 1 and creation of groups for practical work:</p> <p>1. General concepts for cell based assays exemplified using luciferase reporter, cell viability, apoptosis, label-free, phenotypic and High Content imaging.</p>

	<p>2. IC₅₀ determination for inhibitor, signal stability, liquid handling and Z' calculation.</p> <p>3. Application of cell health, cardiomyocyte and neurite outgrowth assays and Biolog platform.</p>
11:45-12:00	Talk from Vendor.
12:00-13:00	Lunch.
13:00-18:00	Experimental work.
18:30-21:30	Networking dinner at Henssler & Henssler.

Day 2

9:00-9:30	Discuss results from Day 1.
9:30-10:00	Lecture: Data analysis and reduction - going beyond the Z'. Discuss methods to analysing <i>in-vitro</i> biological assays data including false positive/negative rates, dose-response curve fitting and correlations.
10:00-10:30	Lecture: Analysis of images from High Content Screening assays.

10.30-10.45	Break.
10:45-11:15	Overview of practical work for Day 2: 1. Screening of cell based assays against a small molecule library (proof-of-concept screen). 2. Application of cell health, cardiomyocyte and neurite outgrowth assays.
11:15-11:30	Talk from Vendor.
11:30-12:30	Experimental work.
12:30-13:30	Lunch.
13:30-18:30	Experimental work.

Day 3

9:00-9:30	Discuss results from Day 2.
9:30-10:00	Case study: Neurite outgrowth Image analysis in Columbus.

10:00-10:15	Talk from Vendor.fraunhofer ime
10.15-10.45	Lecture: Reagent characterisation and selection of assays which will ensure translation of Hits between formats.
10:45-11:00	Break.
11.00-11.30	Lecture: Integrating your research program, design of project critical paths which integrate <i>in-vitro</i> , <i>in-vivo</i> and <i>in-silico</i> elements.
11.30-12.00	Lecture: An overview of cell-based assays from a provider perspective.
12:00-13:00	Lunch.
13:00-15:00	Each team to compare results and identify learnings from practical course, presentations from each team and wrap up.