



BioStatus Limited (Stand #95)
Wed. July 1, 2015 – 1.15 pm (30 min + Q's)
Workshop room 4

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Real-Time Cell Health Monitoring, Cell-by-Cell in 3D by Fluorescence Microscopy

Roy Edward
BioStatus Limited, Shepshed, UK

A novel far-red DNA binding viability probe, DRAQ7, has undetectable toxicity in long-term / real-time cell based assays as validated in recent publications (Akagi et al., 2013, Marciniak et al., 2013, Wang et al., 2015 and internal data) including ultra-sensitive bioassays for DNA intercalators, ex-plant tissue culture and nano-particle toxicity, and importantly in the presence of toxicants / anti-cancer compounds.

Thus, cells can be exposed to it at any stage of an assay to permit real-time monitoring of loss of membrane integrity (in apoptosis, death). Being DNA specific it allows monitoring cell-by-cell while its spectral properties mean it can be incorporated into multi-colour experiments, or with Hoechst 33342 or CyTRAK Orange (for simple cell health assays) or with mitochondrial membrane potential probes such as TMRM.

DRAQ7 is truly cell impermeant yet retains the DNA targeting and far-red fluorescence of the parent DRAQ chromophore. Accordingly, it likewise can be used on HCS imaging platforms, fluorescence microscopes, cytometers and sorters.

Its spectral properties (long wavelength) are particularly suited to penetrative imaging of multi-cellular structures and thick ex-plant tissue sections.

The presentation will focus on the deployment and application of DRAQ7 to demanding real-time and 3D micro-tissue assays (see figure) including patient-derived samples that enable strategies for personalised medicine, underpinned by core performance data that define its unique properties.

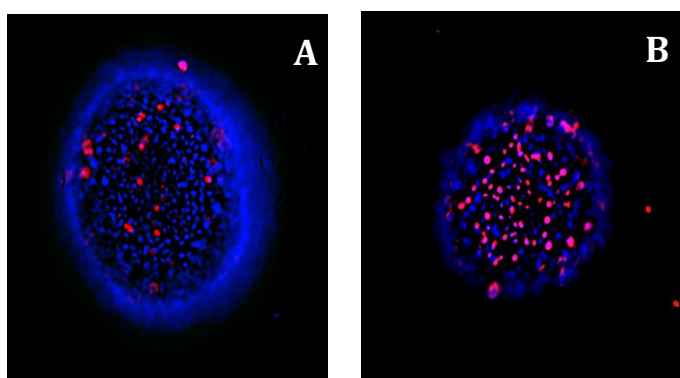


Figure: MCF7 cell spheroids stained with Hoechst 33342 (*blue fluorescence*) and DRAQ7 (*red fluorescence*). Untreated (*panel A*); treated for 72 hours with 1 µM Etoposide (*panel B*). Image courtesy of Imagen-Biotech.