ATP Content in 3D Microtissues

Background Information

- The environment created by a 3D culture model allows reconstitution of the natural cellular physiology by promoting the complex cell-cell and cell-matrix network communications found *in vivo*.
- Different scaffold-free 3D microtissue models are available at Cyprotex including spheroids produced using Ultra-low adhesion plates or using InSphero's hanging drop technology.
- Microtissues can be formed from single or co-cultured cell populations and their longevity permits use in long-term repeat dose toxicity studies to investigate any cumulative effect.
- ATP content is a biochemical endpoint used to measure general cell viability. This can be incorporated with LDH release to monitor cell death over time.

Protocols

Microtissues*
HepaRG, liver, spontaneously beating cardiac (mono- and co-cultures available)

Endpoints*
ATP content, LDH release**

Time Points*
4 hr, 16 hr, 72 hr and 14 day repeat dose

*others available on request
** HCS imaging service to monitor GSH content, ROS formation, phospholipidosis, steatosis, mitochondrial membrane potential also available with the Ultra low adhesion model.

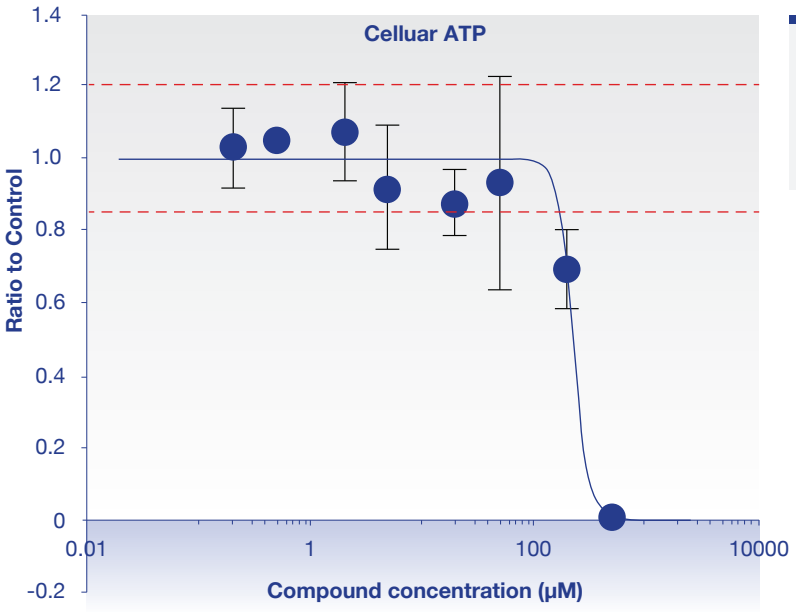

Figure 1
Determination of cellular ATP levels using Promega's CellTiter Glo® luminescent cell viability assay, following exposure of 3D microtissues to rosiglitazone.