

Renal Fibrosis 2D Cell-Based Assay Service

Assessing Key Indices of Renal Fibrosis using a Primary Human Cell-based Assay Screening Service

Renal fibrosis is a complex multi-faceted disease process that is associated with the de-regulation of key enzymes that maintain the local renal cellular environment. This deregulated fibrotic cascade results in the excessive production and deposition of extracellular proteins that impact normal renal tissue and can lead to kidney dysfunction via uremic retention of key solutes. Transforming growth factor beta (TGF- β) is as a key mediator of protein levels/structure of the renal ECM and has been identified as pivotal to the progression of renal fibrosis. AvantiCell Science Ltd has developed a unique fibrosis cell-based assay service that offers a fully validated flexible and customisable assay service that is highly reproducible and offers low limits of detection.

KEY ASSAY FEATURES

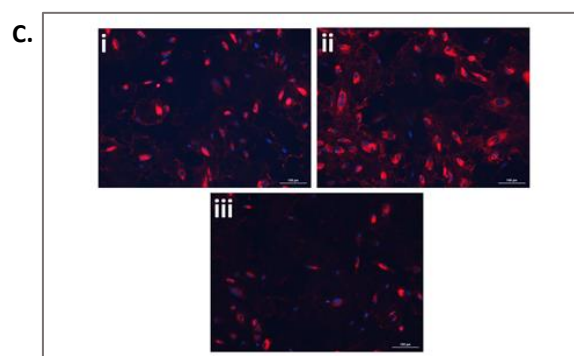
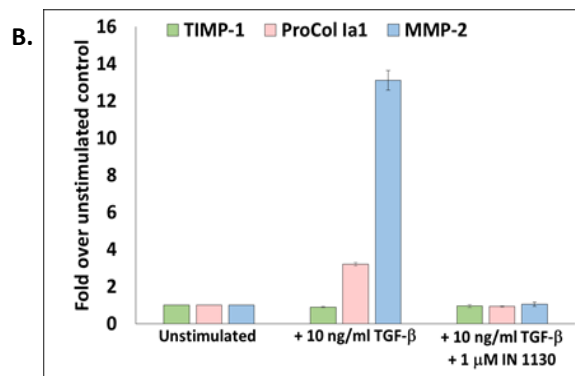
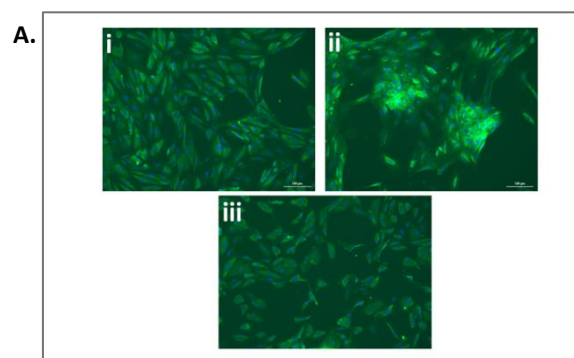
- Choice of human primary renal fibroblasts (HRFs) from an extensive donor library as cell model; isolated direct from primary human kidney tissue
- Highly reproducible and sensitive quantification of key TGF- β regulated fibrotic biomarkers that influence the renal ECM microenvironment
- Robust and accurate fibrotic profiling of test molecules over 24h, 48h and 72h

CELL CHARACTERISTICS

- Type: Human primary renal fibroblast cells (HRFs)
- Source: ACS human kidney donor library of up to 8 donors
- Isolation(s): All originate from normal kidney cortex, no evidence of abnormal pathology
- ACS HRFs catalogue range: KF-HN-051

SERVICE DELIVERY

- 2D 96- or 384-well format allowing analysis of multiple doses of compounds, nanomaterials and natural products.
- Accurate quantification of renal TGF- β regulated fibrotic outputs α SMA, TIMP-1, MMP-2 and collagen at low detectable range (pg – ng/ml)
- Verification of test molecule(s) fibrotic potential using validated pro/anti-fibrotic control(s)
- Customisation of fibrosis assay using other pro-/anti-fibrotic stimuli e.g. Human Angiotensin II, SMAD3 Inhibitor, SIS3
- Detailed 2D immunofluorescence (IF) image montage analysis using a BioTek Cytation 5 cell imaging Multi-Mode Reader
- Service accommodates sample batches of any size, with scaled charges based on assay numbers



- A. HRFs IF α SMA (green)/DAPI (Blue) (i) Unstimulated (ii) 10 ng/ml TGF- β (iii) 10 ng/ml TGF- β + 1 μ M IN 1130 (72h)
- B. Fold change in renal MMP-2/TIMP-1/ ProColl α 1 measurements +/- pro/anti fibrotic stimulation (72h)
- C. HRFs IF ProColl α 1 (red)/DAPI (Blue) (i) Unstimulated (ii) 10 ng/ml TGF- β (iii) 10 ng/ml TGF- β + 1 μ M IN 1130 (72h)

Leaders in Cell Culture