

READ ME File For 'Datasets for 'Generation of functional hepatocyte 3D discoids in an acoustofluidic bioreactor''

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ReadMe Author: Mogib Khedr, University of Southampton

This dataset supports the publication:

'Generation of functional hepatocyte 3D discoids in an acoustofluidic bioreactor'

By: Khedr, Mogib; Messaoudi, Walid, Mohamed; Jonnalagadda, Umesh; Abdelmotelb, Ahmed; Glynne-Jones, Peter; Hill, Martyn; Khakoo, Salim I; Abu Hilal, Mohammad.

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Contents

1. "Biological Data":

The "Huh7 Aggregate size" directory consists of one directory containing images [in .tiff format] for calcein AM pre-labelled Huh7 loaded in AFB for 30 minutes. These images were processed by Fiji version of ImageJ to determine aggregate diameters. "Aggregate_size.xlsx" compiles and organizes this information and the .pzfx file (requires GraphPad Prism 7 to open) formats the data into Figure 2B. The 2.5x and 4x scale images are also included.

The "Huh7 live-dead staining" directory consists of three sub-directories containing images [in .tiff format] for Huh7 seeded for various time points in 2D or AFB; at room temperature (at 25 Celsius) or at 37 Celsius or at 25 Celsius with addition of HEPES. These images were processed by Fiji version of ImageJ to determine the area stained with calcein AM or Propidium Iodide (PI). "Aggregate size.xlsx" compiles and organizes this staining area means' information and the .pzfx file (requires GraphPad Prism 7 to open) formats the data into Figure 4.

The "Huh7 Calcein AM retention" directory consists of three sub-directories containing images [in .tiff format] for calcein AM pre-labelled Huh7 seeded for various time points in AFB. These images were processed by Fiji version of ImageJ to quantify change in cell fluorescence over time course, expressed as integrated density. "F. Intensity analysis.xlsx" compiles and organizes this information and the .pzfx file (requires GraphPad Prism 7 to open) formats the data into Figure 5E.

2. "Modelling":

The "Bioreactor_PlanarResonator.mph" file was used to find the resonance frequency and model its related energy density distribution within the fluid filled cavity.

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