

Storage of liver organoids at room temperature using WellReady™

The use of organoids for disease modelling, drug discovery and personalised medicine has become increasingly popular. Processes for the generation and maintenance of organoids can be complex, requiring high technical awareness. Additionally, some organoid models are unsuitable for storage and shipment by freeze/thaw. WellReady™ offers a simple solution to these challenges, allowing for the shipment of developed organoid models at ambient temperatures, supplying the end-user with a ready to use model.

Overview

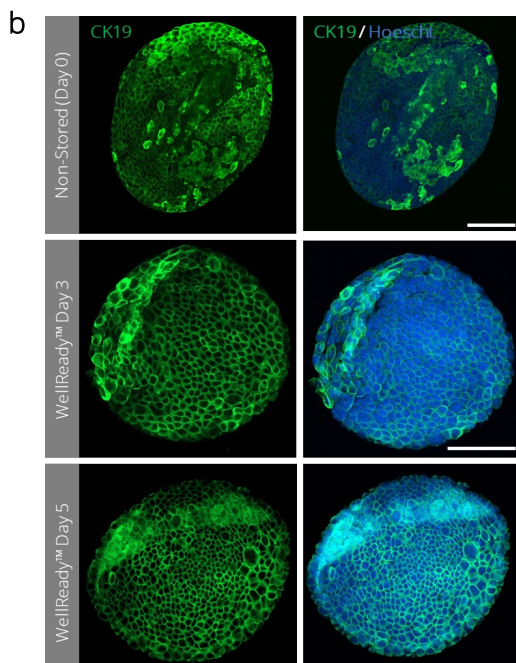
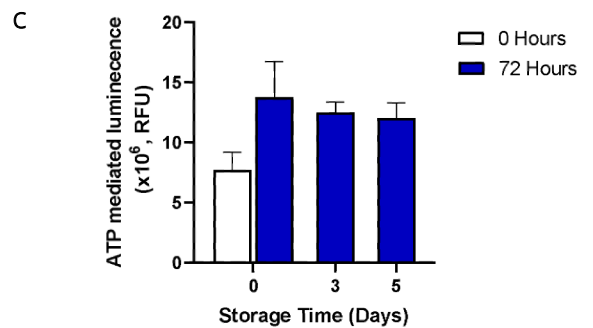
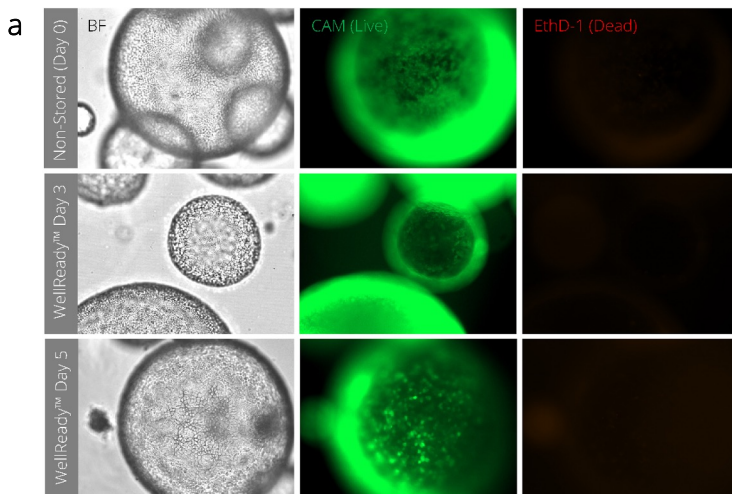
Liver organoids are important in drug discovery and toxicology due to their drug metabolising capability. This study found that liver organoids can be stored for 5 days at room temperature in ready-to-ship plates using WellReady™, maintaining their morphology, viability and function. structural integrity,



Liver organoids maintain their structure and function when stored in plate using WellReady™

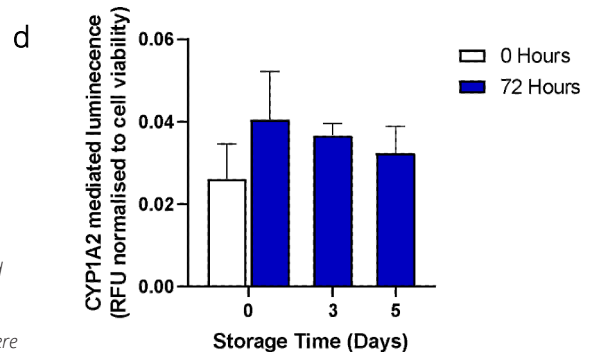
iPSC-derived murine liver organoids were cultured in a Matrigel matrix in 48 well plates. Once mature, the organoids were stored at 20°C for 5 days using WellReady™. Upon release the organoids retained:

- High viability and continued growth
- Structure and hepatic marker expression
- Functionally active drug metabolising enzymes after 72 hours in culture.



The effect of WellReady™ on Liver organoid preservation. Liver organoids were preserved at 20°C for 5 days using WellReady™. Following preservation, the organoids were released from WellReady™ and

returned to culture for 72 hours before carrying out assays. (a) Organoids were returned to culture overnight and stained with calcein-AM (CAM, green) and ethidium homodimer-1 (EthD-1, red) dyes to visualise live and dead cells respectively. (b) Organoids were returned to culture for overnight, fixed, and stained for the hepatocyte cholangiocyte marker - Cytokeratin-19 (CK19, green) and Hoechst nuclear stain (blue). (c) Cell viability assessed by measuring ATP levels using the CellTiter-Glo® assay, (d) Functional activity assessed by measuring the activity of Cytochrome P450 1A2 using the P450-Glo™ CYP1A2 Assay. Legend indicates post release culture periods. Scale bars represents 100µm.



Atelerix was founded in 2017 with the mission of improving the storage and shipment of biological samples at room temperature, enabling the life sciences sector access to quality biological material.

Superior samples and materials equal better results!

