chemQ bioscience Product Information

Liver Perfusion Solution II; Catalog Number: CQ-PTB-1000; Volume: 1000 mL

Liver Perfusion Solution II is shipped at a cold temperature. Store at 2°-8°C away from direct light. Add the recommended amount of Collagenase/Dispase before use. Liver Perfusion Solution II is for research use or for further manufacturing. To order this item, please contact us at info@vitroprep.com.

Digestion Perfusion Protocol of Human and/or Large Animal Whole Liver:
Tissue should be collected from the donor with as much intact vasculature as possible, specifically the portal vein. Perfusion of the tissue can take place through any of the major vessels (superior vena cava, inferior vena cava, or portal vein); however, the portal vein is recommended due to its capacity to reach 80-100% of the liver mass. The digestion buffer perfusion follows the chelating buffer perfusion. The tissue and Liver Perfusion Solution II should be warmed to 35°-37°C for the digestive enzyme to work properly. If perfusing through the portal vein, the SVC should be closed off entirely, leaving the IVC open or restricted to allow perfusate to exit. The perfusion rate should be high enough to achieve adequate tissue inflation (chelating buffer infiltration) without overly inflating the tissue and introducing too much pressure on the cells. A rate of 0.3-0.4 mL/gram of tissue/minute is recommended. However, constant observation of the tissue throughout the perfusion process should still be done to avoid under- or over-inflation. The amount of collagenase to use and digestion time required will depend on the type, lot #, vendor, and species being isolated. The digestion phase of the isolation should take 13-20 minutes. The digestion is complete once the internal tissue has begun to break apart – this will look different from donor to donor and species to species. Once digestion is complete, disconnect the perfusion line and place the organ into isolation media (Plating Medium)—4°C isolation media is recommended.

Additional considerations and notes:
a. The cells/tissue should be exposed to the digestion buffer as little as possible to achieve adequate digestion/yield. However, it is not as simple as just using a high concentration of collagenase to decrease digestion time. A fine balance of time vs enzyme concentration will need to be established. As a general rule, acceptable digestion should take place within 13-20 minutes. If the digestion occurs too quickly, the collagenase concentration may need to be lowered, and vice versa.