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Primary Fresh Rat Islet Products

Primary rat islets are obtained from Sprague-Dawley rats by the method of Collagenase P digestion and Ficoll gradient centrifugation protocol. The preparation is heterogeneous with regard to the size of the isolated rat islets. Figure 1 shows a representative picture of rat islets from this preparation on the day of isolation. Freshly isolated islets can be shipped for same-day delivery or stabilized overnight prior to shipping. The islets are stained with Acridine Orange and Propidium Iodide for assessment of good viability. DTZ stain is also used to distinguish rat pancreatic islets from other unspecific tissues. Figure 2 shows unstained and DTZ stained pictures of the islets from the same preparation after 3 days of culture, and Figure 3 shows the rat islets after 6 days of culture. A glucose concentration-dependent insulin secretion is observed in Glucose-Stimulated Insulin Secretion (GSIS) assay from islets after 1, 3, 5, and 7 days in culture, and the results are shown in Figure 4. We also showed in Figure 5 that Exendin-4 enhances GSIS of fresh rat islets after 30 - 36 hours in tissue culture.

Figure 1: Freshly isolated rat islets

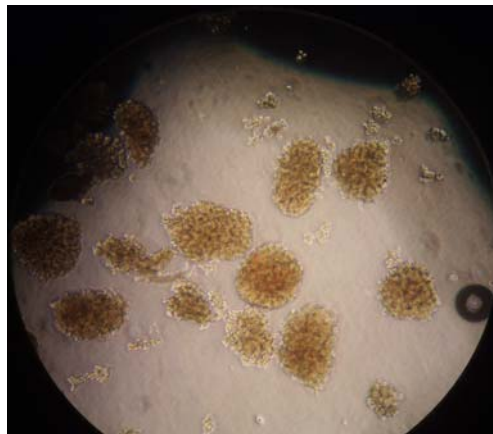


Figure 2: Rat islets on day 3 of culture (left), with DTZ stain (right)

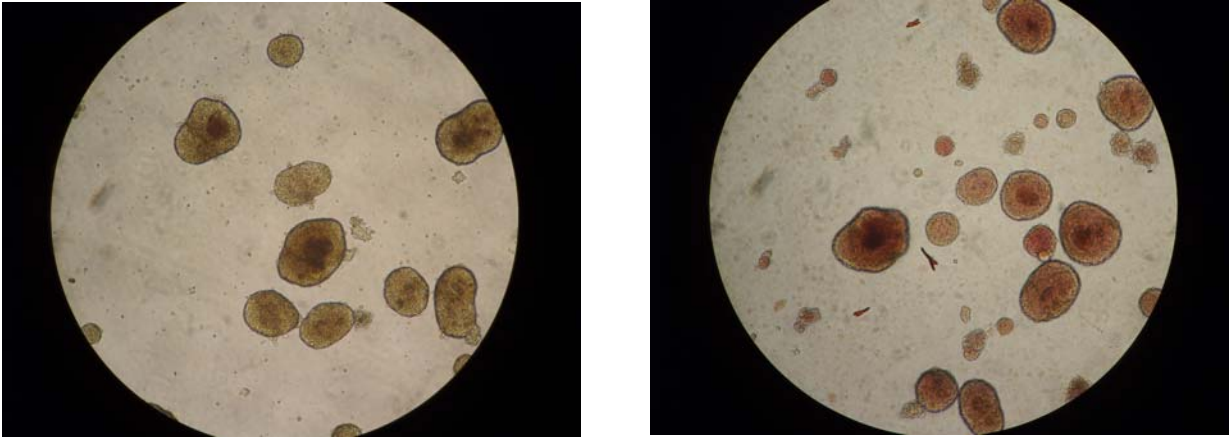


Figure 3: Rat islets on day 6 of culture.

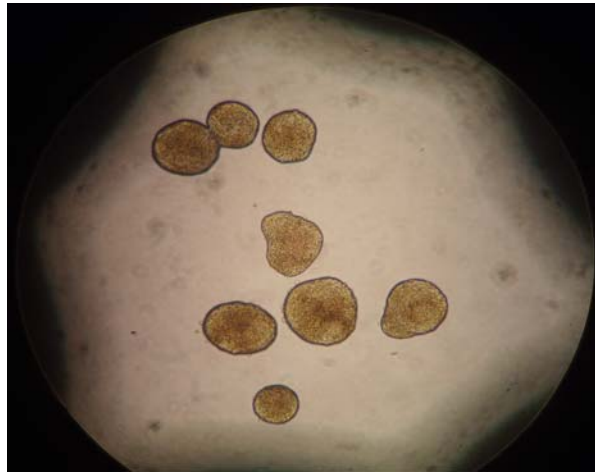


Figure 4: Glucose-stimulated insulin secretion performed on 10 IEQ of rat islets after 1, 3, 5, and 7 days in tissue culture.

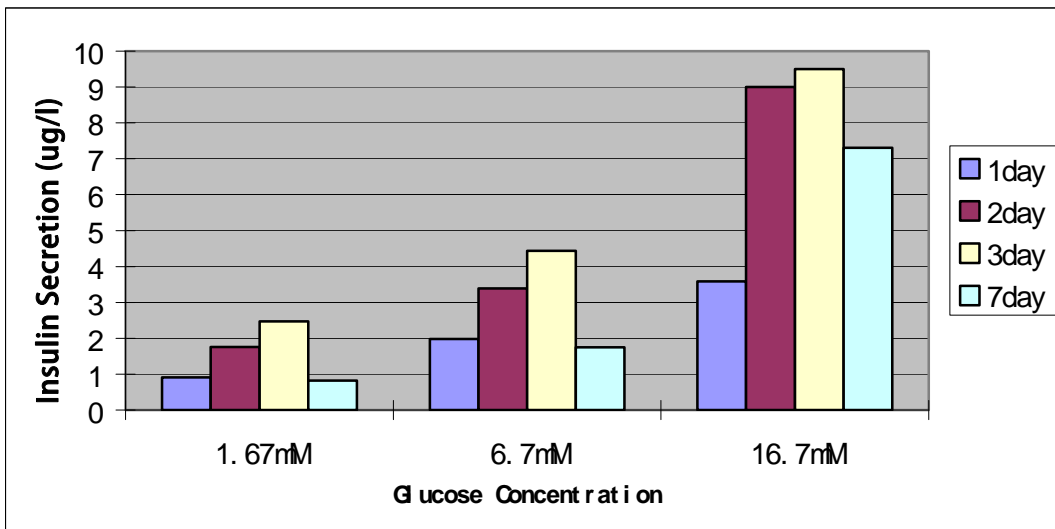


Figure 5: Exendin-4 Enhances Glucose-Stimulated Insulin Secretion of Fresh Rat Islets After 30 - 36 hours In Tissue Culture (Each Well Contained 10 IEQ by Hand-Pick)

