

Islet Perifusion

The islet perifusion apparatus is a low-pressure liquid chromatography system that we built in-house from commercially available components. The system consists of four channels where islets are placed into a 1-mL glass column. Each channel is operated independently by a high-precision peristaltic pump. Perifusion media and islet chambers are maintained at 37°C using a large-capacity water bath. This system configuration allows us to acquire dynamic hormone secretory profile simultaneously from four sets of islets with 1-5 secretagogues per each channel. Perfusate is collected by fraction collectors and samples are then assayed for insulin, glucagon, or somatostatin concentration. End-users receive complete experimental record with raw data, data analysis and graphical representation of each perifusion experiment.

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