

Effect of Human Myotubes-Derived Media on Glucose-Stimulated Insulin Secretion

Mizgier, Maria L.

Cataldo, Luis R.

Gutierrez, Juan

Santos, José L.

Casas, Mariana

Llanos, Paola

Contreras-Ferrat, Ariel E.

Moro, Cedric

Bouzakri, Karim

Galgani, Jose E.

© 2017 Maria L. Mizgier et al. Fasting to postprandial transition requires a tight adjustment of insulin secretion to its demand, so tissue (e.g., skeletal muscle) glucose supply is assured while hypo-/hyperglycemia are prevented. High muscle glucose disposal after meals is pivotal for adapting to increased glycemia and might drive insulin secretion through muscle-released factors (e.g., myokines). We hypothesized that insulin influences myokine secretion and then increases glucose-stimulated insulin secretion (GSIS). In conditioned media from human myotubes incubated with/without insulin (100 nmol/L) for 24 h, myokines were qualitatively and quantitatively characterized using an antibody-based array and ELISA-based technology, respectively. C57BL6/J mice islets and Wistar rat beta cells were incubated for 24 h with control and conditioned media from noninsulin- and insulin-treated myotubes prior to GSIS determination. Conditioned media from insulin-treated versus nontreated myotubes h