Inhibition of electrical activity in mouse pancreatic β-cells by the ATP/ADP translocase inhibitor, bongkrekic acid

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Received 1 March 1991. Available online 7 December 2001.

Abstract

Bongkrekic acid causes fatal food poisoning which is associated with hyperglycaemia. Here we demonstrate that bongkrekic acid, a potent inhibitor of the mitochondrial ATP/ADP translocase, inhibits glucose-induced electrical activity in the pancreatic β-cell through the simulation of ATP-sensitive potassium channel (K-ATP-channel) activity. By comparison of its effects with those of oligomycin, we suggest that bongkrekic acid acts by the inhibition of glucose metabolism and may induce hyperglycaemia by impairing β-cel function. Author Keywords: Bongkrekic acid; Metabolism; ATP-sensitive potassium channel; Pancreatic β-cell