Stimulatory effect of D-ephedrine on B3-adrenoceptors in adipose tissue of ratrs

陳保羅

Juei-Tang Cheng;I-Min Liu;Shi-Ting Yen;Shiow-Wen Juang;Tsang Pai Liu;Paul Chan

摘要

Abstract

The effect of ephedrine on β3-adrenoceptors (β3-AR) was studied in the isolated adipose tissue of Wistar rat. Incubation with d-ephedrine (0.1 – 10 μM) induced a concentration-dependent decrease of uptake of [14C]-deoxy-d-glucose into white adipose tissues (WAT). The inhibitory effect of d-ephedrine was potentiated by BRL 37344, the agonist of β3-AR and concentration-dependently inhibited by SR 59230A, the selective antagonist of β3-AR. The action of d-ephedrine on β3-AR was further blocked by the antibodies for β3-AR, but not the immunoglobulin, in a concentration-dependent manner. Moreover, d-ephedrine increased glycerol release from the isolated brown adipose tissues (BAT) and this action was also abolished by SR 59230A at concentration sufficient to block β3-AR. Thus, these results suggest that d-ephedrine has the ability to activate β3-AR both in WAT and BAT of Wistar rats in vitro.