Introduction

10 pM BRL37344 (a selective $_3$-adrenoceptor [AR] agonist) and 10 pM clenbuterol ($_2$-AR agonist) stimulate glucose uptake in mouse isolated soleus muscle. 100 pM of either has no effect. 10 nM BRL37344 also stimulates glucose uptake but 100 nM clenbuterol inhibits uptake. Studies using -AR antagonists and -AR knockout mice, show that the effects of 10 pM BRL37344 and clenbuterol do not involve -ARs, whereas the opposite effects of 10 nM BRL37344 and 100 nM clenbuterol are both mediated by the $_2$-AR (Ngala et al.2008 Br J Pharmacol 155: 395; Ngala et al.2009 Br J Pharmacol, in press). This suggests that these agonists might affect different signalling mechanisms via the $_2$-AR. We have already reported that forskolin increases both cyclic AMP content and glucose uptake, 10 pM clenbuterol increased, whereas 100 nM clenbuterol decreased cAMP content, but that there were no cAMP changes associated with the effect of 10 pM and 10 nM BRL-37344 (Ngala et al., 2008 Br J Pharmacol. 155: 395-406).

Aim

To investigate the roles of protein kinase A

GPR41 and GPR43 in leptin secretory responses of murine adipocytes to SCFA

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