

P004 The influence of rGRIF-1 upon rodent recombinant $\alpha 1\beta 2\gamma 2$ GABA-A receptor pharmacology
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γ -Aminobutyric acid type A (GABA_A) receptor interacting factor (GRIF-1a) has been proposed previously to function as GABA_A receptor β_2 subunit trafficking protein. Here, we investigated the effect of transiently expressing rGRIF-1a on the binding pharmacology of the rat $\alpha 1\beta 2\gamma 2$ GABA_A receptor subtype stably expressed in HEK 293 cells. Data are mean values for 3-5 independent transfections. Expression of rGRIF-1a elicited a concentration-dependent 4-fold decrease in K_D , with no significant effect on the B_{max} for [³H] flunitrazepam binding. In the absence of rGRIF-1a, the inhibition of specific [³H] muscimol binding by GABA was best fit to a single site (apparent $IC_{50} = 191$ nM, $nH = 1.0$). In the presence of rGRIF-1a, the inhibition curve was best fit to a two-site model (apparent IC_{50} values: 7 nM (37%) and 500 nM (63%), respectively; $nH = 0.5$). These results suggest that rGRIF-1 does not increase the number of assembled $\alpha 1\beta 2\gamma 2$ receptor complexes, but that it may influence the pharmacological properties of the GABA_A receptor by allosterically facilitating binding to both GABA and benzodiazepines. We thank Dr David Graham (Sanofi Aventis) for the cell line, and the Islamic Development Bank and BBSRC (UK) for funding.