

P002 Occupancy of the $D_{2\text{short}}$ dopamine receptor is affected by sodium ions and varies with the membrane batch

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The binding profiles of different ligands have been used as a tool to describe the expression and the pharmacological properties of G protein coupled receptors (GPCR) such as the dopamine receptors. We have expressed the short isoform of the D_2 dopamine receptor (D_{2S}) in Sf9 insect cells obtaining different batches of membranes with different total numbers of receptor (B_{max}). The binding of two inverse agonists ($[^3\text{H}]$ -spiperone and $[^3\text{H}]$ -nemonapride) to the receptors, in the absence and presence of sodium ions in the assay, was similar qualitatively but surprisingly different quantitatively between the two batches of membranes. While the B_{max} and K_d for $[^3\text{H}]$ -spiperone were unaffected by the different conditions, $[^3\text{H}]$ -nemonapride exhibited a sodium ion dependent increase in the B_{max} and the affinity. The increase in the B_{max} was 28% and 65% for the higher and lower receptor expression level batches of membranes, respectively. These differences suggest that the oligomerisation state of the receptor could be different in different preparations and with and without sodium ions. We thank the BBSRC for financial support.