C-terminal truncation of the glucagon-like peptide-1 receptor
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The glucagon-like peptide-1 receptor (GLP-1R) belongs to family B of the G-protein coupled receptors (GPCRs). It has been shown for several family A GPCRs that truncation of the receptor C-terminal can improve receptor stability. In order to determine the limit for truncation of GLP-1R C-terminal, we systematically deleted amino acids in this part of the receptor. Deletion of the last 49 amino acids (1-414) of GLP-1R completely abolished signal transduction from the receptor. It has previously been shown that deleting the last 44 amino acids of GLP-1R (1-419) retains GLP-1 potency and affinity. However, here we show that deleting 44 amino acids of the C-terminal tail significantly reduces GLP-1 potency from 17 pM to 106 pM. We find that the limit of C-terminal truncation appears to be at Leu422, as GLP-1R can be truncated to this position without affecting GLP-1 potency or affinity.