

# Ligand regulation of the pro-inflammatory G protein-coupled receptor GPR84

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## Abstract

GPR84 is an understudied rhodopsin-like class A G protein-coupled receptor which is arousing particular interest from a therapeutic perspective. Not least this reflects that gpr84 expression is significantly up-regulated following acute inflammatory stimuli and in inflammatory diseases and that receptor activation plays a role in regulating pro-inflammatory responses and migration of cells of the innate immune system such as neutrophils, monocytes, macrophages and microglia. Although most physiological responses of GPR84 reflect receptor coupling to G $\alpha$ i/o G-proteins, several studies indicate that agonist-activated GPR84 can also recruit arrestin adaptor proteins and this regulates receptor internalisation and desensitisation. To date, very little is known on the patterns of GPR84 phosphorylation and how these might control these processes. Here, we consider what is known on the molecular basis of GPR84 signalling with a focus on how GRK-mediated phosphorylation regulates arrestin protein recruitment and receptor function.

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