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Succinate receptor in GtoPdb v.2023.1

Anthony P. Davenport[1], Julien Hanson[2] and Wen Chiy Liew[3]

1. University of Cambridge, UK
2. University of Liege, Belgium
3. University of Edinburgh, UK

Abstract

Nomenclature as recommended by NC-IUPHAR [8]. The succinate receptor (GPR91, *SUCNR1*) is activated by the tricarboxylic acid (or Krebs) cycle intermediate succinate and other dicarboxylic acids with less clear physiological relevance such as maleate [17]. Since its pairing with its endogenous ligand in 2004, intense research has focused on the receptor-ligand pair role in various (patho)physiological processes such as regulation of renin production [17, 39], ischemia injury [17], fibrosis [25], retinal angiogenesis [34], inflammation [25, 23], immune response [32], obesity [44, 26, 21], diabetes [42, 22, 39], platelet aggregation [38, 36] or cancer [28, 46]. The succinate receptor is coupled to $G_{i/o}$ [11, 17] and $G_{q/11}$ protein families [31, 17, 40]. Although the receptor is, upon ligand addition, rapidly desensitized [19, 31], and in some cells internalized [17], it seems to recruit arrestins weakly [10]. The cellular activation of the succinate receptor triggers various signalling pathways such as decrease of cAMP levels, $[Ca^{2+}]^i$ mobilization and activation of kinases (ERK, c-Jun, Akt, Src, p38, PI3Kβ, *etc.*) [12]. The receptor is broadly expressed but is notably abundant in immune cells (M2 macrophages [40, 21], monocytes [32], immature dendritic cells [32], adipocytes [44], platelets [38, 36], *etc.*) and in the kidney [17].

Contents

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Receptors

succinate receptor

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