

Notch receptors (version 2019.4) in the IUPHAR/BPS Guide to Pharmacology Database

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Abstract

The canonical Notch signalling pathway has four type I transmembrane Notch receptors (Notch1-4) and five ligands (DLL1, 2 and 3, and Jagged 1-2). Each member of this highly conserved receptor family plays a unique role in cell-fate determination during embryogenesis, differentiation, tissue patterning, proliferation and cell death [2]. As the Notch ligands are also membrane bound, cells have to be in close proximity for receptor-ligand interactions to occur. Cleavage of the intracellular domain (ICD) of activated Notch receptors by γ -secretase is required for downstream signalling and Notch-induced transcriptional modulation [15, 3, 11, 22]. This is why γ -secretase inhibitors can be used to downregulate Notch signalling and explains their anti-cancer action. One such small molecule is [RO4929097](#) [8], although development of this compound has been terminated following an unsuccessful Phase II single agent clinical trial in metastatic colorectal cancer [19].

Aberrant Notch signalling is implicated in a number of human cancers [2, 20, 6, 16], with [demcizumab](#) and [tarextumab](#) identified as antibody inhibitors of ligand:receptor binding [13].

Contents

This is a citation summary for Notch receptors in the [Guide to Pharmacology](#) database (GtoPdb). It exists purely as an adjunct to the database to facilitate the recognition of citations to and from the database by citation analyzers. Readers will almost certainly want to visit the relevant sections of the database which are given here under database links.

[GtoPdb](#) is an expert-driven guide to pharmacological targets and the substances that act on them. GtoPdb is a reference work which is most usefully represented as an on-line database. As in any publication this work should be appropriately cited, and the papers it cites should also be recognized. This document provides a citation for the relevant parts of the database, and also provides a reference list for the research cited by those parts.

Please note that the database version for the citations given in GtoPdb are to the most recent preceding version in which the family or its subfamilies and targets were substantially changed. The links below are to the current version. If you need to consult the cited version, rather than the most recent version, please contact the GtoPdb curators.

Database links

Notch receptors

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=914>

Targets

[notch receptor 1](#)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2861>

[notch receptor 2](#)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2859>

[notch receptor 3](#)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2860>

[notch receptor 4](#)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2862>

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