

Prolactin family

Overview: The prolactin family are homodimeric tyrosine kinase receptors, which couple primarily through the JAK/STAT pathway. This cascade is based around the protein tyrosine kinase activity of the Janus kinases (JAK, ENSFM0025000000777), which phosphorylate the receptor and thereby facilitate the recruitment of signal transducers and activators of transcription (STATs, ENSFM00500000269705, ENSFM00500000269817). The activated homo- or heterodimeric STATs function principally as transcription factors in the nucleus.

Nomenclature	Abbreviation	Ensembl ID	Other names	Agonist
Prolactin	PRLR	ENSG00000113494	–	PRL, CSH1
Erythropoietin	EPOR	ENSG00000187266	–	EPO
Thrombopoietin	TPOR	ENSG00000117400	Myeloproliferative leukemia protein, C-mpl, CD110	TPO
Growth hormone	GHR	ENSG00000112964	Somatotropin, GH-binding protein, GHBP, serum-binding protein	GH1, GH2
Granulocyte macrophage colony-stimulating factor	CSF1R, CSF2RA	ENSG00000182578, ENSG00000198223	CD115, CD116	GM-CSF
Granulocyte colony-stimulating factor	CSF3R	ENSG00000119535	CD114	G-CSF

Endogenous agonists are large (~200 aa) polypeptides, and include prolactin (PRL, ENSG00000172179), chorionic somatomammotropin 1 (CSH1, lactogen, chorionomammotropin, ENSG00000136487), chorionic somatomammotropin hormone 2 (CSH2, ENSG00000213218), chorionic somatomammotropin hormone-like 1 (CSHL, lactogen-like, ENSG00000204414), erythropoietin (EPO, ENSG00000130427), thrombopoietin (TPO, megakaryocyte colony-stimulating factor, myeloproliferative leukemia virus oncogene ligand, C-mpl ligand, megakaryocyte growth and development factor, MGDF, ENSG00000090534), growth hormone 1 (GH1, ENSG00000189162), growth hormone 2 (GH2, placenta-specific growth hormone, growth hormone variant, ENSG00000136488), granulocyte macrophage colony stimulating factor (GM-CSF, colony-stimulating CSF, sargramostim, molgramostin, ENSG00000164400) and granulocyte colony stimulating factor (G-CSF, CSF3, pluripoi-
etin, filgrastim, lenograstim, ENSG00000108342).

Abbreviations: CSF, colony stimulating factor; CSH, chorionic somatomammotropin; EPO, erythropoietin; GH, growth hormone; G-CSF, granulocyte colony-stimulating factor; GM-CSF, granulocyte-macrophage colony-stimulating factor; JAK, Janus kinase; PRL prolactin; STAT, signal transducers and activators of transcription; TPO, thrombopoietin

Further Reading

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