

NUCLEAR RECEPTORS

Overview: Nuclear receptors are specialized transcription factors with commonalities of sequence and structure, which bind as homo- or heterodimers to specific consensus sequences of DNA (response elements) in the promoter region of particular target genes. They regulate (either promoting or repressing) transcription of these target genes in response to a variety of endogenous ligands. Endogenous agonists are hydrophobic entities which when bound to the receptor promote conformational changes in the receptor to allow recruitment (or dissociation) of protein partners, generating a large multi-protein complex.

Systematic nomenclature	Common nomenclature	Other names	Ensembl ID
NR1D1	Rev-erb α	EAR1, hRev	ENSG00000126368
NR1D2	Rev-erb β	EAR1 β , RVR, BD73	ENSG00000174738
NR2A1	HNF4 α	Hepatocyte nuclear factor 4- α , MODY1, TCF14	ENSG00000101076
NR2A2	HNF4 γ	Hepatocyte nuclear factor 4- γ	ENSG00000164749
NR2C1	TR2	Testicular receptor 2	ENSG00000120798
NR2C2	TR4	TAK1	ENSG00000177463
NR2E1	TLL	TLX, tailless homologue	ENSG00000112333
NR2E3	PNR	Photoreceptor-specific nuclear receptor, retina-specific nuclear receptor	ENSG00000031544
NR2F1	COUP-TFI	COUP α , EAR3, SVP44	ENSG00000175745
NR2F2	COUP-TFII	COUP β , ARP1, SVP40	ENSG00000185551
NR2F6	EAR2	–	ENSG00000160113
NR3B1	ERR α	ESRL1, estrogen-related receptor α , estrogen receptor-like 1	ENSG00000173153
NR3B2	ERR β	ESRL2, estrogen-related receptor β , estrogen receptor-like 2	ENSG00000119715
NR3B3	ERR γ	ESRL3, estrogen-related receptor γ , estrogen receptor-like 3	ENSG00000196482
NR4A1	NGFI-B	NAK1, ST59, nur77, TR3, HMR	ENSG00000123358
NR4A2	NURR1	Immediate early response protein NOT, transcriptionally inducible nuclear receptor, TINUR, RNR-1	ENSG00000153234
NR4A3	NOR1	Neuron-derived orphan receptor, mitogen-induced nuclear orphan receptor	ENSG00000119508
NR5A1	SF1	Steroidogenic factor 1, adrenal 4-binding protein, steroid hormone receptor Ad4BP, Fushi tarazu factor homologue 1	ENSG00000136931
NR5A2	LRH-1	Liver receptor homologue 1, α 1-fetoprotein transcription factor, hepatocytic transcription factor, B1-binding factor, CYP7A promoter-binding factor	ENSG00000116833
NR6A1	GCNF	Germ cell nuclear factor, retinoid receptor-related testis-specific receptor, RTR	ENSG00000148200
NR0B1	DAX-1	AHCH	ENSG00000169297
NR0B2	SHP	Small heterodimer partner	ENSG00000131910

Further Reading

Benoit G, Cooney A, Giguere V, Ingraham H, Lazar M, Muscat G *et al.* (2006). International Union of Pharmacology. LXVI. Orphan nuclear receptors. *Pharmacol Rev* 58: 798–836.

Germain P, Staels B, Dacquet C, Spedding M, Laudet V (2006). Overview of nomenclature of nuclear receptors. *Pharmacol Rev* 58: 685–704.