

Neuropeptides B and W

Overview: The neuropeptide BW receptor 1 (NPBW1, provisional nomenclature) is activated by two 23-amino-acid peptides, neuropeptide W (NPW-23) and neuropeptide B (NPB-23) (Shimomura *et al.*, 2002; Fujii *et al.*, 2002). C-terminally extended forms of the peptides (NPW-30 and NPB-29) also activate NPBW1 (Brezillon *et al.*, 2003). Unique to both forms of NPB is the *N*-terminal bromination of the first tryptophan residue. des-Br-NPB-23 and des-Br-NPB-29 were not found to be major components of bovine hypothalamic tissue extracts. The NPBW2 receptor is activated by the short and C-terminal extended forms of NPB and NPW (Brezillon *et al.*, 2003).

Nomenclature	NPBW1	NPBW2
Other names	GPR7	GPR8
Ensembl ID	ENSG00000183729	ENSG00000125522
Principal transduction	G _{i/o} (Mazzocchi <i>et al.</i> , 2005)	G _{i/o} (Mazzocchi <i>et al.</i> , 2005)
Rank order of potency	NPB-29 > NPB-23 > NPW-23 > NPW-30 (Brezillon <i>et al.</i> , 2003)	NPW-23 > NPW-30 > NPB-29 > NPB-23 (Brezillon <i>et al.</i> , 2003)
Selective agonists	Ava-3, Ava-5 (Kanesaka <i>et al.</i> , 2007)	–
Probes	>[¹²⁵ I]-NPW-23 (0.44 nM, Singh <i>et al.</i> , 2004)	[¹²⁵ I]-NPW-23

Potency measurements were conducted with heterologously expressed receptors with a range of 0.14–0.57 nM (NPBW1) and 0.98–21 nM (NPBW2).

Abbreviations: Ava3, TrpTyrLysAvaAvaAvaGlyArgAlaAlaGlyLeuLeuSerGlyLeu-NH₂; Ava5, TrpTyrLysAvaAvaAvaAvaAvaAvaGlyArgAlaAlaGlyLeuLeuSerGlyLeu-NH₂

Further Reading

Lee DK, George SR, O'Dowd BF (2003). Continued discovery of ligands for G protein-coupled receptors. *Life Sci* **74**: 293–297.
Singh G, Davenport AP (2006). Neuropeptide B and W: neurotransmitters in an emerging G-protein-coupled receptor system. *Br J Pharmacol* **148**: 1033–1041.

References

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