

Ventrolateral preoptic nucleus

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The **ventrolateral preoptic nucleus** (VLPO) is a group of neurons in the hypothalamus. They are primarily active during Non-rapid eye movement sleep, and inhibit other neurons that are involved in wakefulness. The VLPO neurons release the inhibitory neurotransmitters galanin and GABA to inhibit the monoaminergic cell groups in the locus coeruleus, the raphe nucleus, and the tuberomammillary nucleus.^[1]

- VLPO is activated by somnogens, from which serotonin and adenosine accumulate during waking.^[2] Another VLPO-activating endosomnogen is prostaglandin D2.^[3]
- VLPO is inhibited by arousal transmitters noradrenaline and acetylcholine.

References

- [↑] Saper, C. B., Scammell, T. E., & Lu, J. (2005). "Hypothalamic regulation of sleep and circadian rhythms." *Nature* **437** (7063): 1257–1264. doi:10.1038/nature04284 (<http://dx.doi.org/10.1038/nature04284>). PMID 16251950 (<http://www.ncbi.nlm.nih.gov/pubmed/16251950>).
- [↑] Gallopin T, Luppi PH, Cauli B, Urade Y, Rossier J, Hayaishi O, Lambolez B, Fort P. (2005). "The endogenous somnogen adenosine excites a subset of sleep-promoting neurons via A2A receptors in the ventrolateral preoptic nucleus". *Neuroscience* **134** (4): 1377–90. doi:10.1016/j.neuroscience.2005.05.045 (<http://dx.doi.org/10.1016/j.neuroscience.2005.05.045>). PMID 16039802 (<http://www.ncbi.nlm.nih.gov/pubmed/16039802>).
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External links

- NeuroNames *ancil--1174961713* (<http://braininfo.rprc.washington.edu/Scripts/ancilcentraldirectory.aspx?ID=-1174961713>)

Gallopin T, Luppi PH, Cauli B, Urade Y, Rossier J, Hayaishi O, Lambolez B, Fort P. (2005). "The endogenous somnogen adenosine excites a subset of sleep-promoting neurons via A2A receptors in the ventrolateral preoptic nucleus". *Neuroscience* **134** (4): 1377–90. doi:10.1016/j.neuroscience.2005.05.045 (<http://dx.doi.org/10.1016/j.neuroscience.2005.05.045>). PMID 16039802 (<http://www.ncbi.nlm.nih.gov/pubmed/16039802>).

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