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Antibodies to Orexin-A (ORXN)

Orexin-A antibodies. Catalog # ORXN-101AP, P-ORXN and PC-ORXN.

Accession # 043612 and Alternate Nomenclature: *Hypocretin-1; Hcrt1*

Orexin-A is a hypothalamic neuropeptide that belongs to the Orexin family (Orexin-A and Orexin-B) (1). Orexin neuropeptides -A and -B or Orexins are also known as Hypocretins. Orexin-A and -B are derived from the same precursor peptide (prepro-orexin) by proteolytic processing whose gene is located at human chromosome 17q21 (2). Orexins are produced by a small group of neurons located in the later hypothalamic and perifornical areas, with widespread projections to the entire neuroaxis (3). Orexinergic neurons of the lateral hypothalamus act as glucose sensors. Orexin signals hunger when blood glucose levels are low. Orexins also play a significant role in the regulation of sleep-wakefulness and body fluids and, in homeostatic regulation of energy metabolism, autonomic function and hormonal balance (4). Orexins mediate their effects by binding to two G-Protein-Coupled Receptors (OXR1 and OXR2). Orexin-A binds to both OXR1 and OXR2 with high affinity (5).

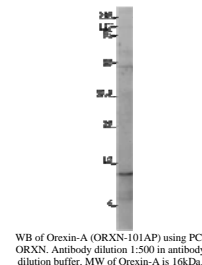
Orexin binding to its associated receptor activates the hypoxia-inducible factor 1 (HIF-1) transcription factor in the hypothalamus which results in increased glucose uptake and higher glycolytic activity. Mice lacking orexins or their cognate receptors eat less compared with matched littermates that do not lack them and, display a sleep disorder that is similar to human narcolepsy (6). Therefore, orexins are absent and/or greatly diminished in the brain and cerebrospinal fluid of most narcoleptic patients. Orexin-A is expressed in subthalamic nucleus, heart, lung, liver, kidney, pancreas, placenta and skeletal muscle. It is approximately a 16kDa protein (131 amino acids).

The ORXN-selective antibodies were generated against purified Orexin-A (ORXN) protein. ORXN-antibodies are affinity purified over immobilized antigen based chromatography, and the purified immunoglobulins are stabilized in antibody stabilization buffer. FabGennix Int. Inc., will also provide limited quantities of antigenic blocking protein for ORXN -101AP antibody. Antibodies to ORXN (ORXN -101AP) will label ~16kDa protein in Western blot positive control samples for ORXN and several other tissues. FabGennix Inc. will also conjugate antibodies with secondary enzymes (alk-Pase or HRP) or fluorescent probes upon request at nominal cost.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	Volume
ORXN-101 AP	Rabbit	Affinity purified ORXN antibodies	R, m, others n.d	100 ug	200ul
FITC- ORXN	Rabbit	FITC-conjugated ORXN antibody	R, m, others n.d	100ug	200ul
P- ORXN	n/a	Antigenic blocking peptide for ORXN -101AP	n/a	250 ug	100ul
PC- ORXN	n/a	Western blotting positive control for ORXN	n/a	For 5 appl	Inquire

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

- Immunogen:** Synthetic peptides corresponding to unique epitope on ORXN. The ORXN peptide was covalently modified post-synthetically covalently modified to achieve desired antigenicity.
- Concentration:** ORXN -101AP: IgG concentration 0.64-0.72 mg/ml in antibody stabilization buffer.
- Applications:** Antibody ORXN -101AP is ideal for WB and ELISA applications, other applications have not been tested. The species cross reactivity for these antibodies have not been examined fully. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay. WB: > 1:500; IMM & i.p pull-down assays: n.d; IHC n.d. ELISA <1:10,000. Application of this antibody in protocols not listed here does not necessarily exclude its use in such procedures.
- Reactivity:** This antibody detects a single band of approximately 16kDa in PC- ORXN samples.
- Protocols:** Standard protocol for various applications (WB; IMM and IHC) of this antibody is provided with the product specification sheet, however, FabGennix Inc., strongly recommends investigators to optimize conditions for use of this antibody in their laboratories.
- Form/Storage:** The antiserum is supplied in antibody stabilization buffer. The affinity-purified antibodies are isolated on immobilized antigen-affinity column and supplied as stabilized product. Store at -20°C for long-term storage. FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45um filter after every use for long-term storage.



WB of Orexin-A (ORXN-101AP) using PC-ORXN. Antibody dilution 1:500 in antibody dilution buffer. MW of Orexin-A is 16kDa.

Notes: Briefly centrifuge to collect liquid, heat or boil PC-ORXN tube for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher MW immunoreactive bands.

New Reagents: Now you can recycle your western blots (nitrocellulose, supported membranes and PVDF membranes) by using our StripOBuffer (Cat FGI-1989). Each stripping is guaranteed to give better signal (up to 8 stripping). No strong pungent smell of reducing agents or heating required. Block in 5X diluOBuffer and you are ready for blotting with a new antibody

References:

1. Utea Y. Involvement of orexins/hypocretins in multiple physiological functions. J UOEH. 1 June 2001; 23(2):147-159.
2. Sakurai T, Amemiya A, Ishii M, Matsuzaki I, Chemelli RM, Tanaka H, Williams S, Richardson JA, Kozlowski GP, Wilson S, Arch JR, Buckingham RE, Haynes AC, Carr SA, Annan RS, McNulty DE, Liu WS, Terrett JA, Elshourbagy NA, Bergsamy DJ, Yanagisawa M. Orexins and Orexin receptors: A Family of Hypothalamic Neuropeptides and G-Protein Coupled Receptors that Regulate Feeding Behavior. Cell. 1998; 92:573-585.
3. Hungs M, Mignot E. Hypocretin/Orexin, sleep and narcolepsy. Bioessays. May 2001; 23(5):397-408.
4. Willie JT, Chemelli RM, Sinton CM, Yanagisawa M. To eat or to sleep? Orexin in the regulation of feeding and wakefulness. Annu Rev Neurosci. 2001; 24:429-458.
5. Sakurai T, Moriguchi T, Furuya K, Kajiwara N, Nakamura T, Yanagisawa M, Goto K. Structure and function of human prepro-orexin gene. J Biol Chem. 18 June 1999; 274(25):17771-17776.
6. Sikder D, Kodadek T. The neurohormone orexin stimulates hypoxia-inducible factor-1 activity. Genes Dev. 15 November 2007; 21(22):2995-3005.

* For users who may require large amounts of ORXN-101AP, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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