SYSY Antibodies

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Orexin A

Cat.No. 389 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For **reconstitution** add 100 µl H_2O, then aliquot and store at -20°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	**WB**: not tested yet **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500
Immunogen	Synthetic peptide corresponding to AA 46 to 65 from mouse Orexin (UniProt Id: O55241)
Reactivity	Reacts with: human, rat, mouse (O55241). Other species not tested yet.
Specificity	Recognizes Orexin A with only minor cross-reactivity to the unprocessed precursor protein. Does not cross-react to Orexin B. K.O. validated

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

Orexins, also referred to as **Hypocretins**, are produced by specialized neurons in the lateral hypothalamus, which project to many different regions of the brain. Orexin A (33 amino acids) and Orexin B (28 amino acids) are both produced from a single pre-pro-orexin polypeptide by a cascade of enzymatic reactions. They operate via binding to two closely related G protein-coupled receptors called Orexin receptor 1 and 2 (OxR 1 and OxR 2). OxR 1 is selective for Orexin A whereas OxR 2 binds both peptides with similar affinity.
The orexin system is conserved in mammals, and plays a central role in regulating feeding, sleep/wake cycles, arousal, energy expenditure, reward seeking, cognition, and stress responses. Defects in orexin signaling are involved in diet-induced obesity, diabetes, narcolepsy, panic anxiety disorder, depression, and addiction.

Selected References for 389 004

Orexin (hypocretin) participates in central autonomic regulation during fight-or-flight response.
Kuwaki T
Peptides (2021) 139: 170530. . **IHC; tested species: mouse**

Dexamethasone induces sleep disruption in male mice and is associated with hyperactivation of orexin neurons.
Endo H, Oue Y, Semba M, Chahara M, Kambe Y, Koyanagi M, Shigetsura Y, Terada T, Yamashita A, Imai S
Psychopharmacology (2026) : . . **IHC; tested species: mouse**

Wake-activated neuronal populations that regulate sleep drive.
Joo W, Diester C, Bitsikas V, Panopoulou M, Hidalgo A, Ntemos K, Pena RCG, Imhof F, Odstrcil I, Donato F, Fucile G, et al.
Nature (2026) : . . **IHC; tested species: mouse**

Orexin neurons play contrasting roles in itch and pain neural processing via projecting to the periaqueductal gray.
Kaneko T, Oura A, Imai Y, Kusumoto-Yoshida I, Kanekura T, Okuno H, Kuwaki T, Kashiwadani H
Communications biology (2024) 71: 290. . **IHC; tested species: mouse**

Lesion of NPY Receptor-expressing Neurons in Perifornical Lateral Hypothalamus Attenuates Glucoprivic Feeding.
Choi PP, Wang Q, Brenner LA, Li AJ, Ritter RC, Appleyard SM
Endocrinology (2024) 1655: . . **IHC; tested species: rat**

Esr1+ hypothalamic-habenula neurons shape aversive states.
Calvigioni D, Fuzik J, Le Merre P, Slashcheva M, Jung F, Ortiz C, Lentini A, Csillag V, Graziano M, Nikolakopoulou I, Weglage M, et al.
Nature neuroscience (2023) 267: 1245-1255. . **IHC; tested species: mouse**

Hypothalamic orexinergic neurons modulate pain and itch in an opposite way: pain relief and itch exacerbation.
Kaneko T, Kuwaki T, Kashiwadani H
The journal of physiological sciences : JPS (2022) 721: 21. . **IHC; tested species: mouse**

Selected General References

The Orexin System and Hypertension.
Huber MJ et al. Cell. Mol. Neurobiol. (2017) PubMed:28349223

Basal Forebrain Cholinergic System and Orexin Neurons: Effects on Attention.
Villano I et al. Front Behav Neurosci (2017) PubMed:28197081

The hypocretin/orexin system in sleep disorders: preclinical insights and clinical progress.
Chow M et al. Nat Sci Sleep (2016) PubMed:27051324

Sleep disorders, obesity, and aging: the role of orexin.
Nixon JP et al. Ageing Res. Rev. (2015) PubMed:25462194

Access the online factsheet including applicable protocols at https://sysy.com/product/389004 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at **4°C** before reconstitution. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.