

c-Fos

Cat.No. 226 017; Monoclonal rat antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°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: 1 : 1000 (AP staining) IP: not tested yet ICC: 1 : 500 up to 1 : 1000 IHC: 1 : 1000 up to 1 : 5000 (see remarks) IHC-P: 1 : 100 up to 1 : 200 iDISCO: 1 : 500 FACS: yes
Clone	108B5H5
Subtype	IgG2a (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the amino terminus of rat c-Fos (UniProt Id: P12841)
Reactivity	Reacts with: mouse (P01101), rat (P12841), human (P01100). Other species not tested yet.
Matching control	226-0P
Remarks	IHC: For best results tissue sections should be stored at -20°C in cryoprotectant solution. Prolonged storage at 4°C leads to a substantial loss of signal.

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

Background

The Fos gene family consists of 4 members: **c-Fos**, FosB, FosL1, and FosL2, also called Fos related antigen 1 and 2 (FRA1 and 2). These leucine zipper proteins can dimerize with proteins of the Jun family leading to the formation of the transcription factor complex AP1 (1). The expression of Fos proteins is rapidly and transiently induced by different extracellular stimuli such as growth factors, cytokines, neurotransmitters, polypeptide hormones and stress (2). In addition Fos proteins can be phosphorylated by ERK kinases modulating transcriptional activity, protein stability and localization (3). c-Fos is the homologue to the Finkel-Biskis-Jenkins (FBJ) murine osteosarcoma virus oncogene (4).

Selected References for 226 017

- Transcriptional dynamics of murine motor neuron maturation in vivo and in vitro. Patel T, Hammelman J, Aziz S, Jang S, Closser M, Michaels TL, Blum JA, Gifford DK, Wichterle H. *Nature communications* (2022) 131: 5427. . **IHC, ICC; tested species: mouse**
- Learning-associated astrocyte ensembles regulate memory recall. Williamson MR, Kwon W, Woo J, Ko Y, Maleki E, Yu K, Murali S, Sardar D, Deneen B. *Nature* (2024) : . . **IHC; tested species: mouse**
- Melatonin targets the paraventricular thalamus to promote non-rapid eye movement sleep in C3H/HeJ mice. Wang Y, Song Z, Han Q, Luo F, Jiang C, Zhang Z, Wang N, Zou N, Liu G, Long M, Liu H, et al. *Current biology : CB* (2024) 3416: 3792-3803.e5. . **IHC; tested species: mouse**
- Activation of Gs Signaling in Cortical Astrocytes Does Not Influence Formation of a Persistent Contextual Memory Engram. Mak A, Abramian A, Driessens SLW, Boers-Escuder C, van der Loo RJ, Smit AB, van den Oever MC, Verheijen MHG. *eNeuro* (2024) 116: . . **IHC; tested species: mouse**
- Rapid, biochemical tagging of cellular activity history in vivo. Zhang R, Anguiano M, Aarrestad IK, Lin S, Chandra J, Vadde SS, Olson DE, Kim CK. *Nature methods* (2024) 219: 1725-1735. . **IHC; tested species: mouse**
- Fasting-induced activity changes in MC3R neurons of the paraventricular nucleus of the thalamus. Chesters RA, Zhu J, Coull BM, Baidoe-Ansah D, Baumer L, Palm L, Klinghammer N, Chen S, Hahm A, Yagoub S, Cantacorps L, et al. *Life science alliance* (2024) 710: . . **IHC; tested species: mouse**
- Rapid reorganization of serotonin projections and antidepressant response to 5-HT1A-biased agonist NLX-101 in fluoxetine-resistant cF1ko mice. Vahid-Ansari F, Newman-Tancredi A, Fuentes-Alvarenga AF, Daigle M, Albert PR. *Neuropharmacology* (2024) 261: 110132. . **IHC; tested species: mouse**
- Divergent recruitment of developmentally defined neuronal ensembles supports memory dynamics. Kveim VA, Salm L, Ulmer T, Lahr M, Kandler S, Imhof F, Donato F. *Science (New York, N.Y.)* (2024) 3856710: eadk0997. . **IHC; tested species: mouse**
- Neural correlates of learning and memory are altered by early-life stress. Sanguino-Gómez J, Huijgens S, den Hartog M, Schenk IJM, Kluck W, Versluis TD, Krugers HJ. *Neurobiology of learning and memory* (2024) 213: 107952. . **IHC; tested species: mouse**
- Optogenetic activation of the lateral habenulaD1R-ventral tegmental area circuit induces depression-like behavior in mice. Chen X, Liu X, Luan S, Wang X, Zhang Y, Hao Y, Zhang Q, Zhang J, Zhao H. *European archives of psychiatry and clinical neuroscience* (2024) 2744: 867-878. . **IHC; tested species: mouse**
- Astrocytes in preoptic area regulate acute nociception-induced hypothermia through adenosine receptors. Jia J, Chen T, Chen C, Si T, Gao C, Fang Y, Sun J, Wang J, Zhang Z. *CNS neuroscience & therapeutics* (2024) 305: e14726. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at <https://sysy.com/product/226017> or scan the QR-code.



FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.