Revision 3

Store at -20C

#3451

# Phospho-μ-Opioid Receptor (Ser375) Antibody


Cell Signaling TECHNOLOGY®

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|---|
| W, IP | M | Transfected Only | 70 to 90 | Rabbit | #P35372 | 4988 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |
| Immunoprecipitation | 1:100 |

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

Phospho-μ-Opioid Receptor (Ser375) Antibody detects transfected μ-opioid receptor only when phosphorylated at Ser375 of mouse MOR (or Ser377 of human MOR).

## Species predicted to react based on 100% sequence homology

Human

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser377 of human (homologous to Ser375 of mouse) μ-opioid receptor. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

The μ-opioid receptor (MOR) belongs to the superfamily of G-protein-coupled receptors. MOR mediates the analgesic and rewarding effects of morphine and other opiates as well as the actions of several endogenous opioid peptides (1). Upon binding to its ligands, this Gi-coupled receptor inactivates adenylyl cyclase (1) and activates a variety of G-beta-gamma-dependent pathways including the MAPK and the PI3K/Akt cascades (2,3). Trafficking of these receptors to and from the plasma membrane and their desensitization play a significant role in morphine tolerance (4,5). As with other GPCRs, these processes are modulated by phosphorylation at diverse sites within intracellular domains (6). Among other sites, agonist-specific phosphorylation of serine 375 in mouse (serine 377 in human) MOR is essential for its internalization (7).

## Background References


1. Law, P. Y. et al. (2000) *Annu. Rev. Pharmacol. Toxicol.* 40, 389-430.
2. Polakiewicz, R. D. et al. (1998) *J. Biol. Chem.* 273, 12402-12406.
3. Polakiewicz, R. D. et al. (1998) *J. Biol. Chem.* 273, 23534-23541.
4. Finn, A.K. and Whistler, J.L. (2001) *Neuron* 32, 829-839.
5. Kieffer, B.L. and Evans, C.J. (2002) *Cell* 108, 587-590.
6. Yu, Y. et al. (1997) *J. Biol. Chem.* 272, 28869-28874.
7. El Kouhen, R. et al. (2001) *J. Biol. Chem.* 276, 12774-12780.


## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting **IP:** Immunoprecipitation

## Cross-Reactivity Key

**M:** Mouse

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