

**Phospho-Ser499 FMRP (Fragile X Mental Retardation Protein) Antibody**  
**Affinity purified rabbit polyclonal antibody**  
**Catalog # AN1228**

**Specification**

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**Phospho-Ser499 FMRP (Fragile X Mental Retardation Protein) Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">Q80WE1</a>
Reactivity	Rat
Predicted	Bovine, Chicken, Human, Mouse, Monkey, Xenopus, Zebrafish
Host	Rabbit
Clonality	polyclonal
Calculated MW	71 KDa

**Phospho-Ser499 FMRP (Fragile X Mental Retardation Protein) Antibody - Additional Information**

Gene ID	24948
Gene Name	FMR1
<b>Other Names</b>	
Fragile X mental retardation protein 1 homolog, FMRP, Protein FMR-1, Fmr1	

**Target/Specificity**

Synthetic phospho-peptide corresponding to amino acid residues surrounding Ser499 conjugated to KLH.

**Dilution**

WB~~ 1:1000

**Format**

Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

**Antibody Specificity**

Specific for ~71k FMRP protein phosphorylated at Ser499. Immunolabeling of the FMRP protein is completely eliminated by  $\lambda$ -phosphatase.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Phospho-Ser499 FMRP (Fragile X Mental Retardation Protein) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Shipping**

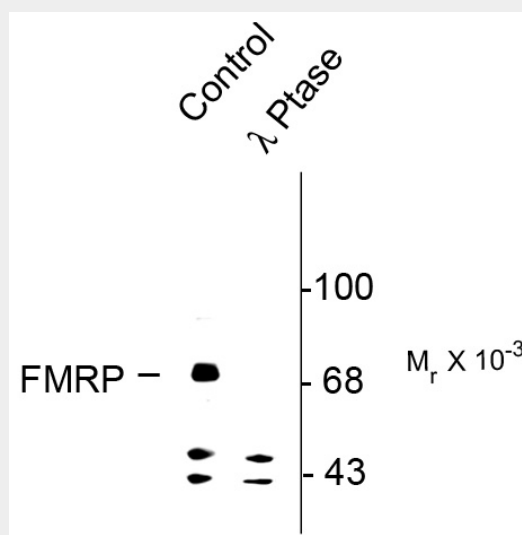
Blue Ice

## Phospho-Ser499 FMRP (Fragile X Mental Retardation Protein) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## Phospho-Ser499 FMRP (Fragile X Mental Retardation Protein) Antibody - Images



Western blot of rat hippocampal lysate showing specific immunolabeling of the ~71k FMRP protein phosphorylated at Ser499 (Control). The phosphospecificity of this labeling is shown in the second lane (lambda-phosphatase:  $\lambda$ -Ptase). The blot is identical to the control except that the lysate was incubated in  $\lambda$ -Ptase (400 units/100ul lysate for 30 min) before being exposed to the FMRP Ser499 antibody. The immunolabeling is completely eliminated by treatment with  $\lambda$ -Ptase.

## Phospho-Ser499 FMRP (Fragile X Mental Retardation Protein) Antibody - Background

Fragile X Mental Retardation Protein (FMRP) is an RNA-binding protein that plays an essential role in cognitive brain function. Mutations in the FMR1 gene, which codes for FMRP, can result in fragile X syndrome, autism, as well as other cognitive deficits (Brown et al., 1998, Goodlin-Jones et al., 2004). Phosphorylation of the highly conserved Ser499 has been shown to trigger hierarchical phosphorylation of nearby serines and may play a role in suppressing target mRNA translation (Ceman et al., 2003, Narayanan et al. 2008).

## Phospho-Ser499 FMRP (Fragile X Mental Retardation Protein) Antibody - References

Bernard PB, Castano AM, O'Leary H, Simpson K, Browning MD, Benke TA. (2013) Phosphorylation of FMRP and alterations of FMRP complex underlie enhanced mLTD in adult rats triggered by early life seizures. *Neurobiol Dis.* Nov; 59:1-17.  
Brown V, Small K, Lakkis L, Feng Y, Gunter C, Wilkinson KD, Warren ST (1998) Purified recombinant

Fmrp exhibits selective RNA binding as an intrinsic property of the fragile X mental retardation protein. J Biol Chem 273:15521-15527

Ceman S, O'Donnell WT, Reed M, Patton S, Pohl J, Warren ST. (2003) Phosphorylation influences the translation state of FMRP-associated polyribosomes. Hum Mol Genet. Dec 15;12(24):3295-305

Goodlin-Jones BL, Tassone F, Gane LW, Hagerman RJ. (2004) Autistic spectrum disorder and the fragile X premutation. J Dev Behav Pediatr. Dec;25(6):392-8

Narayanan U, Nalavadi V, Nakamoto M, Thomas G, Ceman S, Bassell GJ, Warren ST. (2008) S6K1 phosphorylates and regulates fragile X mental retardation protein (FMRP) with the neuronal protein synthesis-dependent mammalian target of rapamycin (mTOR) signaling cascade. J Biol Chem 283:18478-18482