

**#61994** Store at -20°C

# SIGMAR1 (D4J2E) Rabbit mAb


**Cell Signaling**  
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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: |
|---------------|-------------|--------------|-----------|-----------------|-------------|-----------------|
| WB, IP        | H M R       | Endogenous   | 25        | Rabbit IgG      | #Q99720     | 10280           |

## Product Usage Information

### Application

Western Blotting  
Immunoprecipitation

### Dilution

1:1000  
1:50

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

## Specificity / Sensitivity

SIGMAR1 (D4J2E) Rabbit mAb recognizes endogenous levels of total SIGMAR1 protein.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Arg137 of human SIGMAR1 protein.

## Background

Sigma non-opioid intracellular receptor 1 (SIGMAR1) is an endoplasmic reticulum (ER) membrane chaperone that forms raft-like microdomains on the ER, where it interacts with mitochondria at the mitochondria-associated ER membrane domain (MAM). At MAM, SIGMAR1 maintains proper ER-mitochondrion Ca<sup>2+</sup> signaling, regulates mitochondria function, and enhances cellular survival upon ER stress (1-4). When activated, SIGMAR1 translocates to ER and plasma membrane, where it interacts with a plethora of membrane proteins, including ion channels, neurotransmitter receptors, and kinases. SIGMAR1 also modulates a variety of neuronal functions, such as neuronal excitability, neuroplasticity, neuroprotection, and neurorestoration (5-7). SIGMAR1 binds to many anti-psychotic drugs and it is implicated in addiction, pain, neurodegenerative diseases, and depression (8-11). Recently, mutations in the *SIGMAR1* gene have been reported to be associated with amyotrophic lateral sclerosis (12,13). Besides its important roles in central nervous system and peripheral nervous system, SIGMAR1 also enhances cancer cell migration and invasion (14,15).

## Background References

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## 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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**WB:** Western Blotting **IP:** Immunoprecipitation

## Cross-Reactivity Key

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster  
**X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse  
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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