Revision 1

Store at -20C

#97647

PADI2 (E3P8Z) Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H	Endogenous	76	Rabbit IgG	#Q9Y2J8	11240

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	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

PADI2 (E3P8Z) Rabbit mAb recognizes endogenous levels of total PADI2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly375 of human PADI2 protein.

Background

Peptidyl arginine deiminase (PAD) proteins are a family of Ca^{2+}-dependent enzymes that catalyze the post-translational conversion of arginine to citrulline. There are currently five known PAD isozymes in humans, referred to as PADI1-4 and PADI6 (1). Among these isozymes, peptidyl arginine deiminase type 2 (PADI2) is the most widely expressed, being found in skeletal muscle, brain, colon, breast, macrophages, spleen, and spinal cord tissue, among others (1,2). In normal mouse development, PADI2 expression levels are elevated from 18 days to 2 months of age, and gradually decrease from 3 months onward (3). Some of the most well studied PADI2 substrates include vimentin, actin, myelin basic protein (MBP), glial fibrillary acidic protein (GFAP), and histones (4). PADI2-mediated citrullination has been shown to be involved in neurodegeneration and inflammatory response-associated diseases such as multiple sclerosis (MS), Alzheimer's disease (AD), psoriasis, and rheumatoid arthritis (5). Excessive PAD-mediated deimination of MBP is believed to be a major contributor to MS disease progression, while elevated levels of citrullinated GFAP and vimentin proteins have been found in the brains of AD patients (2,4). PADI2 has also been found to play a role in the progression of several types of cancers, including colorectal, breast, and prostate (5-7).

Background References

1. Jones, J.E. et al. (2009) *Curr Opin Drug Discov Devel* 12, 616-27.
2. Alghamdi, M. et al. (2019) *J Immunol Res* 2019, 7592851.
3. Jang, B. (2013) et al. *Prion* 7, 42-6.
4. Witalison, E.E. et al. (2015) *Curr Drug Targets* 16, 700-10.
5. Wang, L. et al. (2017) *Cancer Res* 77, 5755-68.
6. Cantariño, N. et al. (2016) *Mol Cancer Res* 14, 841-8.
7. Wang, H. et al. (2016) *Cancer Cell Int* 16, 61.

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

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

Trademarks and Patents

Limited Uses

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