



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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# PRODUCT INFORMATION



## PAD2 (human, recombinant)

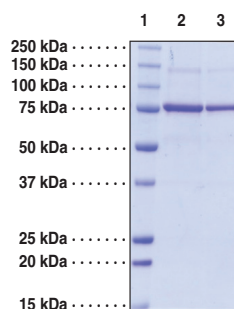
Item No. 10785

### Overview and Properties

<b>Synonyms:</b>	PADI2, PAD-H19, Peptidylarginine Deiminase 2, Protein Arginine Deiminase 2
<b>Source:</b>	Active recombinant N-terminal hexahistidine-tagged enzyme isolated from a baculovirus overexpression system
<b>Amino Acids:</b>	1-665 (full length)
<b>Uniprot No.:</b>	Q9Y2J8
<b>Molecular Weight:</b>	77.32 kDa
<b>Storage:</b>	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
<b>Stability:</b>	≥1 year
<b>Purity:</b>	≥90% estimated by SDS-PAGE
<b>Supplied in:</b>	50 mM HEPES, pH 8.0, with 200 mM NaCl, 1 mM DTT and 10% glycerol
<b>Protein Concentration:</b>	<i>batch specific</i> mg/ml
<b>Activity:</b>	<i>batch specific</i> U/ml
<b>Specific Activity:</b>	<i>batch specific</i> ; ≥500 U/mg
<b>Unit Definition:</b>	One unit is defined as the amount of enzyme required to produce 1 nmol of NH <sub>4</sub> <sup>+</sup> per minute at 37°C in 50 mM HEPES, pH 7.7, containing 10 mM calcium chloride, 5 mM DTT, and 5 mM N-α-Benzoyl-L-Arginine ethyl ester (BAEE).

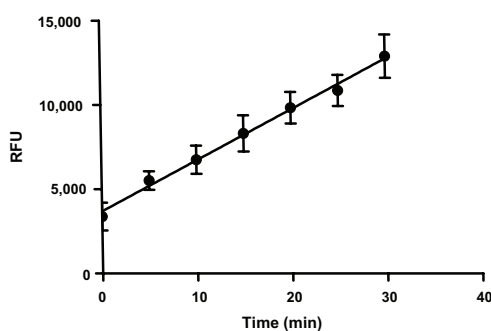
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images

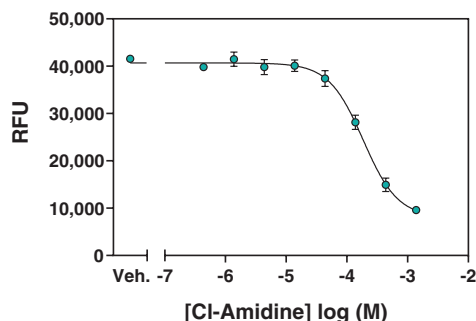


Lane 1: MW Markers  
Lane 2: PAD2 (5 µg)  
Lane 3: PAD2 (2 µg)

Representative gel image shown; actual purity may vary between each batch.



PAD2 Activity with 5 mM BAEE



WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
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# PRODUCT INFORMATION



## Description

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Protein Arginine Deiminases (PADs) are guanidino-modifying enzymes belonging to the amidinotransferase superfamily and are designated PAD1-4 and PAD6. PAD enzymes catalyze the conversion of specific arginine residues to citrulline in a calcium-dependent manner. All enzymes are cytosolic except for PAD4 which is localized in the nucleus.<sup>1</sup> PAD2 is the most widely expressed member and also the most conserved across mammalian species, implying it is the ancestral homologue of the PADs.<sup>2</sup> Overexpression of PAD2 results in myelin loss in a transgenic model, potentially linking PAD2 activity to multiple sclerosis.<sup>3</sup> It has also been shown to modify vimentin and  $\beta/\gamma$ -actin, potentially aggravating the autoantigen response in rheumatoid arthritis.<sup>4,5</sup> PAD2 may also play a role in transcriptional regulation, as it has been shown capable of citrullinating histones, particularly H3 during mammalian reproductive cycles, when it is transcriptionally activated in the nucleus.<sup>6</sup>

## References

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1. Shirai, H., Blundell, T.L., and Mizuguchi, K. A novel superfamily of enzymes that catalyze the modification of guanidino groups. *Trends Biochem. Sci.* **26(8)**, 465-468 (2001).
2. Vossenaar, E.R., Zendman, A.J., van Venrooij, W.J., *et al.* PAD, a growing family of citrullinating enzymes: Genes, features and involvement in disease. *Bioassays* **25(11)**, 1106-18 (2003).
3. Musse, A.A., Li, Z., Ackerley, C.A., *et al.* Peptidylarginine deiminase 2 (PAD2) overexpression in transgenic mice leads to myelin loss in the central nervous system. *Dis. Model Mech.* **1(4-5)**, 229-240 (2008).
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