

# PRODUCT INFORMATION



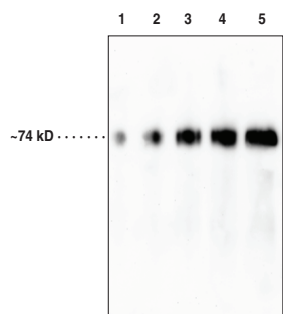
## PAD1 Monoclonal Antibody (Clone 6B4)

Item No. 22997

### Overview and Properties

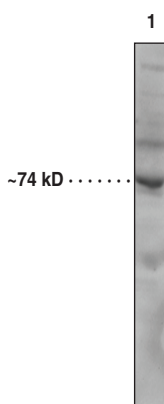
**Contents:** This vial contains 1 mg/ml of protein G-purified IgG.  
**Synonyms:** PADI1, Peptidylarginine Deiminase 1, Protein Arginine Deiminase 1  
**Immunogen:** Recombinant human PAD1 protein  
**Cross Reactivity:** (-) PAD2, PAD3, and PAD4  
**Species Reactivity:** (+) Human  
**Uniprot No.:** Q9ULC6  
**Form:** Liquid  
**Storage:** -20°C (as supplied)  
**Stability:** ≥1 year  
**Storage Buffer:** PBS, pH 7.2, containing 50% glycerol, with 0.1% BSA and 0.02% sodium azide  
**Clone:** 6B4  
**Host:** Mouse  
**Isotype:** IgG2b  
**Applications:** ELISA and Western blot (WB); the recommended starting dilution is 1:1000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images



Lane 1: PAD1 (10 ng)  
Lane 2: PAD1 (25 ng)  
Lane 3: PAD1 (50 ng)  
Lane 4: PAD1 (100 ng)  
Lane 5: PAD1 (200 ng)

*Representative gel image shown; actual purity may vary between each batch but protein will be ≥80% pure.*



Lane 1: SW480 Cells (50 µg)

*Representative gel image shown; actual purity may vary between each batch but protein will be ≥80% pure.*

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

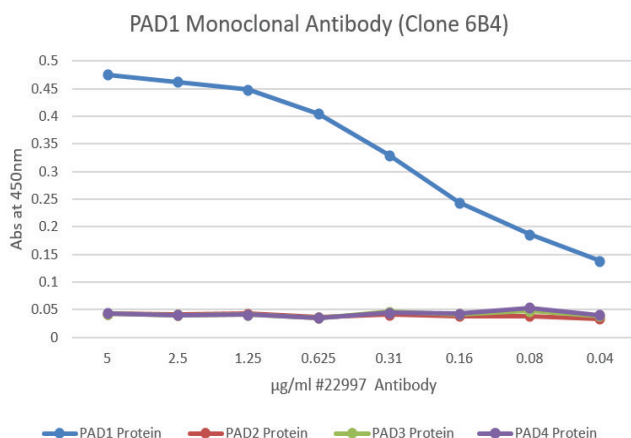
**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your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

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

Protein Arginine Deiminases (PADs) are guanidine-modifying enzymes belonging to the amidinotransferase superfamily and are designated PAD1-4, and PAD6. PADs are calcium-dependent enzymes that catalyze the post-translational modification of target proteins by converting arginine to citrulline.<sup>1,2</sup> The excess deimination of target proteins can result in the production of Anti-Citrullinated Protein Antibodies (ACPAs) which can be indicators of a number of disease states.<sup>3</sup> The various PADs exhibit tissue specific expression and different subcellular localization.<sup>4</sup> PAD1 is expressed in uterus and throughout the epidermis. PAD1 and PAD3 are speculated to mediate deamination of epidermal filaggrin (filament aggregation protein) and keratins, proteins involved in maintaining skin hydration.<sup>5</sup> The predicted size for PAD1 is 74.7 kD and Cayman's PAD1 monoclonal antibody (clone 6B4) detects a band at ~74 kD by Western blot.

## References

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2. 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).
3. Soós, L., Szekanecz, Z., Szabó, Z., *et al.* Clinical evaluation of anti-mutated citrullinated vimentin by ELISA in rheumatoid arthritis. *J. Rheumatol.* **34(8)**, 1658-1663 (2007).
4. Méchin, M.C., Enji, M., Nachat, R., *et al.* The peptidylarginine deiminases expressed in human epidermis differ in their substrate specificities and subcellular locations. *Cell. Mol. Life Sci.* **62(17)**, 1984-95 (2005).
5. Nachat, R., Méchin, M.C., Takahara, H., *et al.* Peptidylarginine deiminase isoforms 1-3 are expressed in the epidermis and involved in the deimination of K1 and filaggrin. *J. Invest. Dermatol.* **124(2)**, 384-93 (2005).

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