

PRODUCT INFORMATION



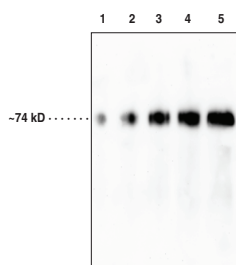
PAD1 Monoclonal Antibody (Clone 6B4)

Item No. 22997

Overview and Properties

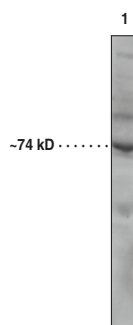
Contents: This vial contains 100 µg of protein G-purified antibody.
Synonyms: PADI1, PDI1, Peptidylarginine Deiminase 1, Protein Arginine Deiminase 1
Immunogen: Recombinant human PAD1
Cross Reactivity: (+) PAD1; (-) PAD2, PAD3, and PAD4
Species Reactivity: (+) Human; other species not tested
Uniprot No.: Q9ULC6
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥3 years
Storage Buffer: PBS, pH 7.2, with 50% glycerol, 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

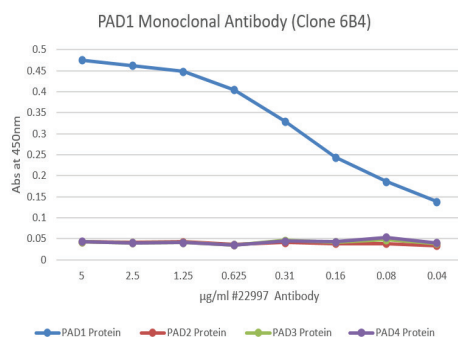


Lane 1: PAD1 (10 ng)
Lane 2: PAD1 (25 ng)
Lane 3: PAD1 (50 ng)
Lane 4: PAD1 (100 ng)
Lane 5: PAD1 (200 ng)

WB analysis of PAD1 recombinant protein and cell lysates probed with the PAD1 monoclonal antibody (Clone 6B4).



Lane 1: SW480 Cells (50 µg)



ELISA test comparing detection of the PAD1 monoclonal antibody (clone 6B4) against several of the PAD proteins.

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

Peptidyl arginine deiminase 1 (PAD1) is a calcium-dependent enzyme that catalyzes the conversion of arginine residues to citrulline within its cellular protein substrates, resulting in the loss of a positive charge, which can alter protein structure and/or function.^{1,2} It exists as a monomer and is composed of a C-terminal catalytic domain and two N-terminal immunoglobulin-like (Ig-like) domains.² PAD1 is primarily expressed in uterine and epidermal cells and generally localized in the cytosol.³ PAD1 citrullinates non-histone proteins, such as keratin, filaggrin, and MEK1, as well as histone H3 at arginine 2 (H3R2), H3R8, H3R17, and H4R3, to regulate epidermal cell progression and embryonic development.⁴⁻⁶ The catalytic activity of PAD1 is lost by deleting the first six N-terminal amino acids.² Decreased *Padi1* expression or Pad1 inhibition reduces citrullination of H3R2, H3R8, H3R17, and H4R3 and inhibits primary mouse embryo preimplantation development.⁷ *PADI1* mRNA is overexpressed in tumor tissue from patients with triple-negative breast cancer (TNBC), and PAD1 promotes proliferation and epithelial-to-mesenchymal transition (EMT) in a variety of TNBC cell lines *in vitro* and in mouse xenograft models.⁸ Cayman's PAD1 Monoclonal Antibody (Clone 6B4) can be used for ELISA and Western blot (WB) applications. The antibody recognizes PAD1 at approximately 74 kDa from human samples.

References

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3. 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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