PRODUCT INFORMATION

PAD4 Monoclonal Antibody (Clone 6D8)
Item No. 19669

Overview and Properties

Contents: This vial contains 100 µg of protein G-purified IgG.
Synonyms: HL-60 PAD, PADI4, Peptidylarginine Deiminase IV, Protein-arginine Deiminase Type-4
Immunogen: Full length recombinant PAD4 protein
Species Reactivity: (+) Human; other species not tested
Uniprot No.: Q9UM07
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥1 year
Storage Buffer: PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone: 6D8
Host: Mouse
Isotype: IgG1
Applications: ELISA and Western blot (WB); the recommended starting dilution is 1:500. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image

Lane 1: PAD4 Recombinant Protein (25 ng)
Lane 2: PAD4 Recombinant Protein (50 ng)
Lane 3: PAD4 Recombinant Protein (100 ng)

1 2 3

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**Description**

Protein arginine deiminase 4 (PAD4) catalyzes the conversion of arginine residues to citrulline within cellular protein substrates, resulting in the loss of a positive charge, which can alter protein structure and/or function.\(^1\) It is expressed in neutrophils, as well as a variety of tissues, including the brain, liver, lung, and kidney.\(^1\)–\(^3\) PAD4 has a key role in NETosis, a lytic form of cell death characterized by the release of neutrophil extracellular traps (NETs).\(^1\) Upon neutrophil activation, PAD4 translocates to the nucleus where it citrullinates histones, initiating chromatin decondensation and the release of NETs.\(^2\)–\(^4\) Neutrophils isolated from **Pad4**\(^{-/-}\) mice exhibit decreased citrullination of histone H3 under both basal and LPS-stimulated conditions and are defective for NET formation in response to stimulation with LPS, phorbol 12-myristate 13-acetate (PMA; Item No. 10008014), or hydrogen peroxide.\(^4\) **Pad4**\(^{-/-}\) mice exhibit larger lesions than wild-type mice in a model of necrotizing fasciitis induced by M1 group A *S. pyogenes* lacking the extracellular DNase Sda1. **Pad4**-deficient mice also exhibit reduced infarct size in a model of myocardial ischemia-reperfusion injury and reduced tumor growth in a Lewis lung carcinoma model.\(^2\)–\(^6\) Serum PAD4 autoantibodies have been found in patients with rheumatoid arthritis and are associated with disease severity.\(^7\) Cayman’s PAD4 Monoclonal Antibody (Clone 6D8) can be used for ELISA and Western blot (WB) applications. The antibody recognizes PAD4 at 74 kDa from human samples.

**References**