Store at 4°C

#86352

Arginase-1 (D4E3M™) XP® Rabbit mAb (PE Conjugate)

Support: +1-978-867-2388 (U.S.)
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Entrez-Gene ID #383
UniProt ID #P05089

For Research Use Only. Not For Use In Diagnostic Procedures.

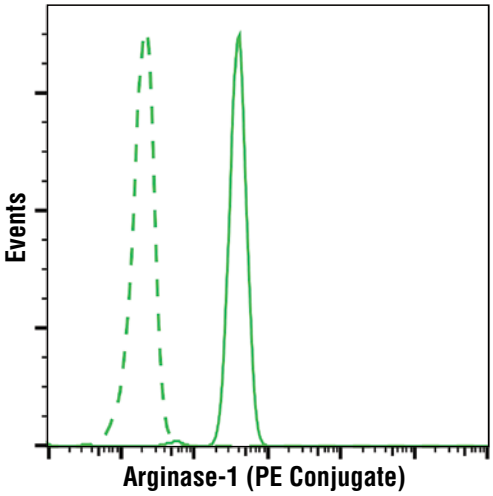
Applications	Species Cross-Reactivity	Isotype
F Endogenous	H, M, R	Rabbit IgG

Description: This Cell Signaling Technology antibody is conjugated to phycoerythrin (PE) and tested in-house for direct flow cytometric analysis in human cells. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated Arginase-1 (D4E3M™) XP® Rabbit mAb #93668.

Background: L-arginine plays a critical role in regulating the immune system (1-3). In inflammation, cancer and certain other pathological conditions, myeloid cell differentiation is inhibited leading to a heterogeneous population of immature myeloid cells, known as myeloid-derived suppressor cells (MDSCs). MDSCs are recruited to sites of cancer-associated inflammation and express high levels of arginase-1 (4). Arginase-1 catalyzes the final step of the urea cycle converting L-arginine to L-ornithine and urea (5). Thus MDSCs increase the catabolism of L-arginine resulting in L-arginine depletion in the inflammatory microenvironment of cancer (4,6). The reduced availability of L-arginine suppresses T-cell proliferation and function and thus contributes to tumor progression (4,6). Arginase-1 is of great interest to researchers looking for a therapeutic target to inhibit the function of MDSCs in the context of cancer immunotherapy (7). In addition, research studies have demonstrated that Arginase-1 distinguishes primary hepatocellular carcinoma (HCC) from metastatic tumors in the liver, indicating its value as a potential biomarker in the diagnosis of HCC (8,9).

Specificity/Sensitivity: Arginase-1 (D4E3M™) XP® Rabbit mAb (PE Conjugate) recognizes endogenous levels of total arginase-1 protein. This antibody does not cross-react with arginase-2.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val47 of human arginase-1 protein.



Flow cytometric analysis of human whole blood using Arginase-1 (D4E3M™) XP® Rabbit mAb (PE Conjugate) (solid line) compared to concentration-matched Rabbit (DA1E) mAb IgG XP® Isotype Control (PE Conjugate) #5742 (dashed line). Analysis was performed on cells in the granulocyte gate.

Storage: Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. *Do not aliquot the antibody. Protect from light. Do not freeze.*

Recommended Antibody Dilutions:

Flow Cytometry	1:50

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

Background References:

(1) Albina, J.E. et al. (1989) J Exp Med 169, 1021-9. .

(2) Mills, C.D. (2001) Crit Rev Immunol 21, 399-425.

(3) Rodriguez, P.C. et al. (2004) Cancer Res 64, 5839-49.

(4) Gabrilovich, D.I. and Nagaraj, S. (2009) Nat Rev Immunol 9, 162-74.

(5) Wu, G. and Morris, S.M. (1998) Biochem J 336 (Pt 1), 1-17.

(6) Raber, P. et al. (2012) Immunol Invest 41, 614-34.

(7) Wesolowski, R. et al. (2013) J Immunother Cancer 1, 10.

(8) Sang, W. et al. (2015) Tumour Biol 36, 3881-6.

(9) Geramizadeh, B. and Seirfar, N. (2015) Hepat Mon 15, e30336.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.