Revision 5

Store at +4C

#86352

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

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
FC-FP	H M R	Endogenous	Rabbit IgG	#P05089	383

Product Usage Information

Application	Dilution
Flow Cytometry (Fixed/Permeabilized)	1:50

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.

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.

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).

Background References

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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.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

FC-FP: Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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