Human/Mouse/Rat Kynurenine 3-Monooxygenase/KMO Antibody

Recombinant Monoclonal Rabbit IgG Clone # 2493A
Catalog Number: MAB8050

R&D SYSTEMS a bio-techne brand

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human Kynurenine 3-Monooxygenase/KMO in direct ELISAs. Detects human, mouse, and rat Kynurenine 3-Monooxygenase/KMO in Western blot.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2493A
Purification	Protein A or G purified from cell culture supernatant
Immunogen	*S. frugiperda* insect ovarian cell line *Sf 21*-derived recombinant human Kynurenine 3-Monooxygenase/KMO Asp2-Leu441 Accession # O15229
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

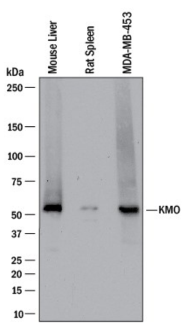
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	See Below
Immunohistochemistry	3-25 µg/mL	See Below

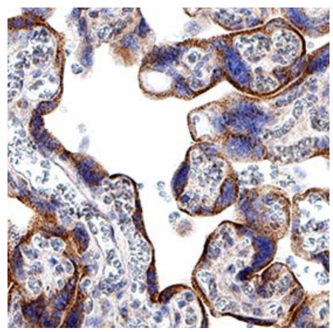
DATA

Western Blot



Detection of Human, Mouse, and Rat Kynurenine 3-Monooxygenase/KMO by Western Blot. Western blot shows lysates of mouse liver tissue, rat spleen tissue, and MDA-MB-453 human breast cancer cell line. PVDF membrane was probed with 1 µg/mL of Rabbit Anti-Human/Mouse/Rat Kynurenine 3-Monooxygenase/KMO Monoclonal Antibody (Catalog # MAB8050) followed by HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # HAF008). A specific band was detected for Kynurenine 3-Monooxygenase/KMO at approximately 55 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



Kynurenine 3-Monooxygenase/KMO in Human Placenta. Kynurenine 3-Monooxygenase/KMO was detected in immersion fixed paraffin-embedded sections of human placenta using Rabbit Anti-Human/Mouse/Rat Kynurenine 3-Monooxygenase/KMO Monoclonal Antibody (Catalog # MAB8050) at 3 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Rabbit IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC003). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm in syncytiotrophoblast cells. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Kynurenine 3-Monooxygenase (KMO), also known as Kynurenine 3-Hydroxylase, is a part of the kynurenine pathway of tryptophan degradation (1). KMO catalyzes the NADPH- and flavin adenine dinucleotide (FAD)-dependent 3-hydroxylation of kynurenine to 3-hydroxykynurenine (3-HK). 3-HK is neurotoxic via the generation of hydrogen peroxide (2) and through the excitotoxic effects of its downstream metabolite quinolinic acid (3). The levels of 3-HK and quinolinic acid are increased in the brain with Alzheimer's disease and Huntington's disease (1). Inhibition of KMO was shown to reverse cognitive and motor deficits in mouse models of those diseases via an increase in neuroprotective kynurenic acid (4). KMO is found in the mitochondrial outer membrane of microglial cells in the brain and dendritic cells and macrophages in the periphery (1).

References:

1. Schwarcz, R. *et al*. (2012) Nat. Rev. Neurosci. **13**:465.
2. Okuda, S. *et al*. (1996) Proc. Natl. Acad. Sci. **93**:12553.
3. Stone, T.W. and M.N. Perkins. (1981) Eur. J. Pharmacol. 7**2**:411.
4. Zwilling, D. *et al*. (2011) Cell **145**:863.