SANTA CRUZ BIOTECHNOLOGY, INC.

MAO-A (G-10): sc-271123

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Monoamine oxidase (MAO) is an enzyme of the mitochondrial outer membrane and catalyzes the oxidative deamination of biogenic amines throughout the body. MAO is critical in the neuronal metabolism of catecholamine and indolamine transmitters. Cultured skin fibroblasts show both MAO-A and MAO-B and both MAOs differ in molecular structure. MAO-A, the primary type in fibroblasts, preferentially degrades serotonin and norepinephrine. Only MAO-B is present in platelets and only MAO-A is present in trphoblasts. MAO-B, the primary type found not only in platelets but also in the brain of man and other primates, preferentially degrades phenylethylamine and benzylamine. MAO has been of particular interest to psychiatry and genetics because of the suggestion that low activity is a "genetic marker" for schizophrenia. The genes which encode MAO-A and MAO-B map to human chromosome Xp11.3.

CHROMOSOMAL LOCATION

Genetic locus: MAOA (human) mapping to Xp11.3; Maoa (mouse) mapping to X A1.2.

SOURCE

MAO-A (G-10) is a mouse monoclonal antibody raised against amino acids 458-527 of MAO-A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MAO-A (G-10) is available conjugated to agarose (sc-271123 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271123 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271123 PE), fluorescein (sc-271123 FITC), Alexa Fluor® 488 (sc-271123 AF488), Alexa Fluor® 546 (sc-271123 AF546), Alexa Fluor® 594 (sc-271123 AF594) or Alexa Fluor® 647 (sc-271123 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271123 AF680) or Alexa Fluor® 790 (sc-271123 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MAO-A (G-10) is recommended for detection of MAO-A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MAO-A siRNA (h): sc-35847, MAO-A siRNA (m): sc-35848, MAO-A shRNA Plasmid (h): sc-35847-SH, MAO-A shRNA Plasmid (m): sc-35848-SH, MAO-A shRNA (h) Lentiviral Particles: sc-35847-V and MAO-A shRNA (m) Lentiviral Particles: sc-35848-V.

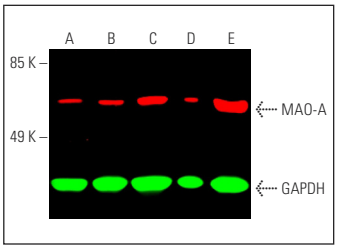
Molecular Weight of MAO-A: 61 kDa.

Positive Controls: human colon extract: sc-363757, human lung extract: sc-363767 or human small intestine extract: sc-364225.

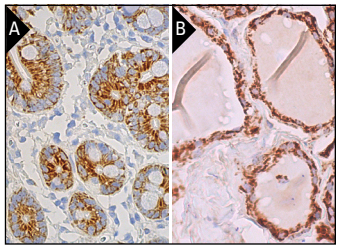
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Simultaneous direct near-infrared western blot analysis of MAO-A expression, detected with MAO-A (G-10) Alexa Fluor® 790: sc-271123 AF790 and GAPDH expression, detected with GAPDH (G-9) Alexa Fluor® 680: sc-365062 AF680 in human colon (**A**), human lung (**B**), human small intestine (**C**), human thyroid (**D**) and human placenta (**E**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214.



MAO-A (G-10) HRP: sc-271123 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Lacerda, C.M., et al. 2012. Local serotonin mediates cyclic strain-induced phenotype transformation, matrix degradation, and glycosaminoglycan synthesis in cultured sheep mitral valves. Am. J. Physiol. Heart Circ. Physiol. 302: H1983-H1990.
2. Harris, S., et al. 2015. Evidence revealing deregulation of the KLF11-MAO a pathway in association with chronic stress and depressive disorders. Neuropsychopharmacology 40: 1373-1382.
3. Duncan, J.W., et al. 2016. Binge ethanol exposure increases the Krüppel-like factor 11-monoamine oxidase (MAO) pathway in rats: examining the use of MAO inhibitors to prevent ethanol-induced brain injury. Neuropharmacology 105: 329-340.
4. Nicholson, A.M., et al. 2018. Fixation and spread of somatic mutations in adult human colonic epithelium. Cell Stem Cell 22: 909-918.e8.
5. Wang, K., et al. 2020. The MAO inhibitors phenelzine and clorgyline revert enzalutamide resistance in castration resistant prostate cancer. Nat. Commun. 11: 2689.
6. Olpe, C., et al. 2021. A diffusion-like process accommodates new crypts during clonal expansion in human colonic epithelium. Gastroenterology 161: 548-559.e23.
7. Zhang, Y., et al. 2022. Carbon tetrachloride induced mitochondrial division, respiratory chain damage, abnormal intracellular [H^+] and apoptosis are due to the activation of 5-HT degradation system in hepatocytes. Toxicol. Appl. Pharmacol. 439: 115929.

RESEARCH USE

For research use only, not for use in diagnostic procedures.