

kynurenine (11F9): sc-69890

BACKGROUND

Tryptophan is an amino acid essential in human nutrition that contains an indole functional group. Kynurenine is a metabolite of tryptophan and is used in the production of niacin, also known as nicotinic acid or vitamin B3. Niacin plays an essential role in energy metabolism, DNA repair, removing toxic chemicals from the body, and assisting in the production of steroid hormones made by the adrenal gland. Elevated plasma levels of kynurenine has been associated with sudden, repetitive, stereotyped, nonrhythmic, involuntary movement. Kynurenine has a molecular mass of 208.2 g/mol. Kynurenine is converted into anthranilic acid in a process catabolize by the enzyme kynureninase. Anthranilic acid can then be used in organic synthesis to generate the benzynes intermediate.

REFERENCES

1. D'angeli, F., et al. 1956. Kynurenine and hydroxykynurenine as precursors of niacin in the rat. *J. Biol. Chem.* 223: 479-484.
2. Rickards, H., Dursun, S.M., et al. 1996. Increased plasma kynurenine and its relationship to neopterin and tryptophan in Tourette's syndrome. *Psychol. Med.* 26: 857-862.
3. Topczewska-Bruns, J., et al. 2003. Kynurenine metabolism in central nervous system in experimental chronic renal failure. *Adv. Exp. Med. Biol.* 527: 177-182.
4. Allegri, G., et al. 2003. Enzyme activities along the kynurenine pathway in mice. *Adv. Exp. Med. Biol.* 527: 497-510.
5. Reinhard, J.F., Jr. 2004. Pharmacological manipulation of brain kynurenine metabolism. *Ann. N.Y. Acad. Sci.* 1035: 335-349.
6. Dobrovolsky, V.N., et al. 2005. Effect of arylformamidase (kynurenine formamidase) gene inactivation in mice on enzymatic activity, kynurenine pathway metabolites and phenotype. *Biochim. Biophys. Acta* 1724: 163-172.
7. Shader, R.I. 2006. Kynurenine—an old pathway retraced. *J. Clin. Psychopharmacol.* 26: 351-352.
8. Forrest, C.M., et al. 2006. Kynurenine pathway metabolism in patients with osteoporosis after two years of drug treatment. *Clin. Exp. Pharmacol. Physiol.* 33: 1078-1087.
9. Staniszewska, M. and Nagaraj, R.H. 2007. Detection of kynurenine modifications in proteins using a monoclonal antibody. *J. Immunol. Methods* 324: 63-73.

SOURCE

kynurenine (11F9) is a mouse monoclonal antibody raised against BSA-conjugated N-formylkynurenine.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

kynurenine (11F9) is available conjugated to agarose (sc-69890 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-69890 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-69890 PE), fluorescein (sc-69890 FITC), Alexa Fluor[®] 488 (sc-69890 AF488), Alexa Fluor[®] 546 (sc-69890 AF546), Alexa Fluor[®] 594 (sc-69890 AF594) or Alexa Fluor[®] 647 (sc-69890 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-69890 AF680) or Alexa Fluor[®] 790 (sc-69890 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

kynurenine (11F9) is recommended for detection of kynurenine modifications in proteins, reacting strongly with N-formylkynurenine-modified N α -acetyl histidine by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); may cross-react with N-formylkynurenine-modified N α -acetyl lysine, N α -acetyl cysteine and N α -acetyl arginine. Not cross reactive with other tryptophan oxidation products.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Zhang, X., et al. 2021. Blockade of IDO-kynurenine-AhR axis ameliorated colitis-associated colon cancer via inhibiting immune tolerance. *Cell. Mol. Gastroenterol. Hepatol.* E-published.
2. Itoh, G., et al. 2022. Cancer-associated fibroblasts educate normal fibroblasts to facilitate cancer cell spreading and T cell suppression. *Mol. Oncol.* 16: 166-187.
3. Chen, J., et al. 2023. Disruption of IDO signaling pathway alleviates chronic unpredictable mild stress-induced depression-like behaviors and tumor progression in mice with breast cancer. *Cytokine* 162: 156115.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.