

Product Information



Monoacylglycerol Lipase (human recombinant)

Catalog No. 10007812 • Lot No. XXXXX

Synonyms:	MAGL, MGL
Source:	Human recombinant N-terminal hexa-histidine-tagged protein expressed in <i>E. coli</i>
M_r:	34 kDa
Supplied in:	50 mM Hepes, pH 7.4, containing 100 mM sodium chloride, 5 mM magnesium chloride, 0.1% Triton X-100, and 25% glycerol
Stability:	≥1 year at -80°C
Protein Concentration:	XX mg/ml
Activity:	XX nmoles/min/ml
Specific activity:	XX noles/min/mg; One unit of enzyme produces 1 μmol of 4-nitrophenol per minute at room temperature in 10 mM Tris-HCl, pH 7.2, containing 1 mM EDTA, and 250 μM 4-nitrophenylacetate.

Endocannabinoids such as 2-arachidonoyl glycerol (2-AG) and arachidonoyl ethanolamide (AEA) are biologically active lipids that are involved in a number of synaptic processes including activation of cannabinoid receptors. Monoacylglycerol lipase (MGL) is a serine hydrolase responsible for the hydrolysis of 2-AG to arachidonic acid and glycerol, thus terminating its biological function.^{1,2} MGL is the principal 2-AG hydrolase in the mammalian brain accounting for greater than 80% of the total 2-AG hydrolase activity.³

Human recombinant MGL was characterized using 4-nitrophenylacetate as a substrate, which upon hydrolysis by MGL, forms 4-nitrophenol with an absorbance maximum at 412 nm.

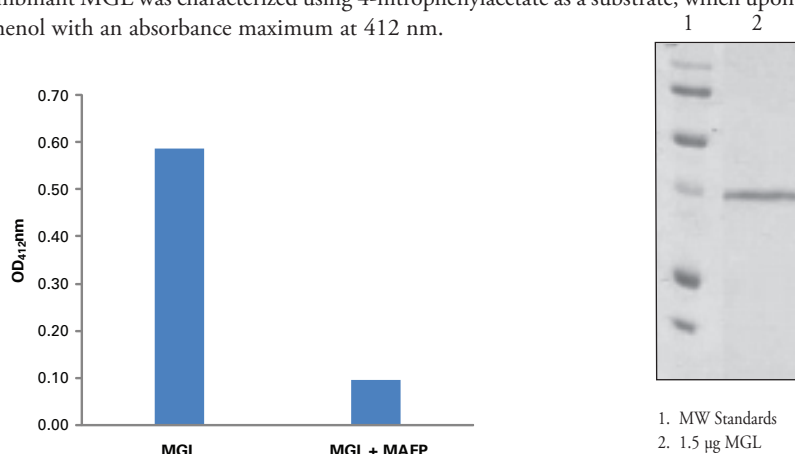


Figure 1: MGL activity was determined using 250 μM 4-nitrophenylacetate (4-NPA) and was inhibited by 1 μM methyl arachidonyl fluorophosphonate (MAFP), a general serine hydrolase inhibitor.

References

- Dinh, T.P., Freund, T.F., and Piomelli, D. A role for monoglyceride lipase in 2-arachidonoylglycerol inactivation. *Chem. Phys. Lipids* **121**, 149-158 (2002).
- Vila, A., Rosengarth, A., Piomelli, D., *et al.* Hydrolysis of prostaglandin glycerol esters by the endocannabinoid-hydrolyzing enzymes, monoacylglycerol lipase and fatty acid amide hydrolase. *Biochemistry* **46**, 9578-9585 (2007).
- Blankman, J.L., Simon, G.M., and Cravatt, B.F. A comprehensive profile of brain enzymes that hydrolyze the endocannabinoid 2-arachidonoylglycerol. *Chemistry & Biology* **14**, 1347-1356 (2007).

Related Products

8-*iso* Prostaglandin A₁ - Cat. No. 10035 • 2-Arachidonoyl Glycerol - Cat. No. 62160 • Methyl Arachidonoyl Fluorophosphonate - Cat. No. 70660 • URB602 - Cat. No. 10007457 • N-Arachidonoyl Maleimide - Cat. No. 10007517 • URB754 - Cat. No. 10007691 • Arachidonoyl-1-*thio*-Glycerol - Cat. No. 10007904 • Monoacylglycerol Lipase Western Ready Control - Cat. No. 10009566

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