

PRODUCT INFORMATION



Monoacylglycerol Lipase (human, recombinant)

Item No. 10007812

Overview and Properties

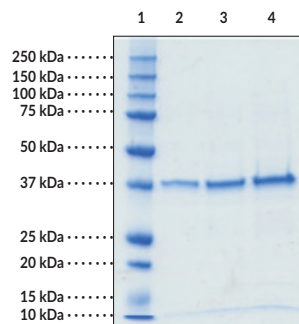
Synonyms: MAGL, MGL
Source: Active recombinant C-terminal His-tagged protein expressed in *E. coli*
Amino Acids: 2-313 (full length)
Uniprot No.: Q99685
Molecular Weight: 39 kDa
Storage: -80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability: ≥2 years
Purity: ≥90% estimated by SDS-PAGE
Supplied in: 50 mM HEPES, pH 7.4, with 100 mM sodium chloride, 5 mM MgCl₂, 0.1% CHAPS, and 25% glycerol

Protein

Concentration: *batch specific* mg/ml
Activity: *batch specific* U/ml
Specific Activity: *batch specific* U/mg
Unit Definition: One unit of enzyme will produce 1 μmol of 4-nitrophenol per minute at 25°C in 10 mM Tris, pH 7.2, 1 mM EDTA using 1.5 μM 4-nitrophenylacetate (Item No. 705193) as substrate, measured by absorbance at 412 nm.

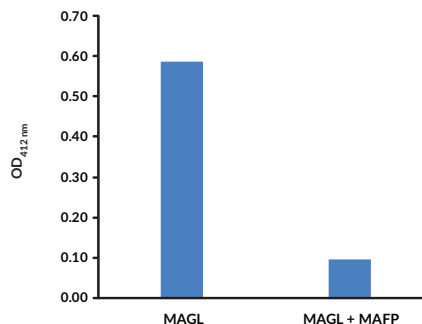
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

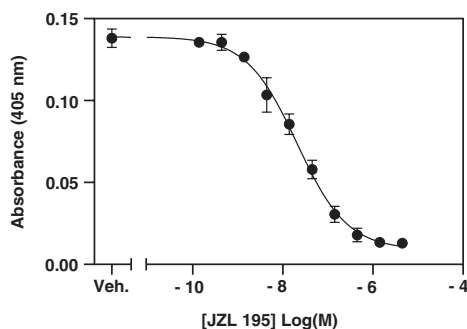


Lane 1: MW Markers
Lane 2: MAGL (1 μg)
Lane 3: MAGL (2 μg)
Lane 4: MAGL (5 μg)

Representative gel image shown; actual purity may vary between each batch.



MAGL 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.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 03/01/2021

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Endocannabinoids such as 2-arachidonoyl glycerol (2-AG; Item No. 62160) and arachidonoyl ethanolamide (AEA; Item No. 90050) are biologically active lipids that are involved in a number of synaptic processes including activation of cannabinoid receptors. Monoacylglycerol lipase (MAGL) is a serine hydrolase responsible for the hydrolysis of 2-AG to arachidonic acid and glycerol, thus terminating its biological function.^{1,2} MAGL 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 MAGL was characterized using 4-nitrophenylacetate as a substrate, which upon hydrolysis by MAGL, forms 4-nitrophenol with an absorbance maximum at 412 nm.

References

1. Dinh, T.P., Freund, T.F., and Piomelli, D. A role for monoglyceride lipase in 2-arachidonoylglycerol inactivation. *Chem. Phys. Lipids* **121(1-2)**, 149-158 (2002).
2. 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(33)**, 9578-9585 (2007).
3. Blankman, J.L., Simon, G.M., and Cravatt, B.F. A comprehensive profile of brain enzymes that hydrolyze the endocannabinoid 2-arachidonoylglycerol. *Chem. Biol.* **14(12)**, 1347-1356 (2007).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM