

# Agmatinase (G-12): sc-166414

## BACKGROUND

Agmatinase (also known as agmatine ureohydrolase) results from the decarboxylation of L-arginine by arginine decarboxylase to form a metabolic intermediate in the biosynthesis of putresine and higher polyamines (spermidine and spermine). Agmatinase has been shown to play a role in several important biochemical processes in humans, ranging from effects on the central nervous system to cell proliferation in cancer and viral replication. Agmatinase catalyzes the hydrolysis of agmatine to putresine and urea and is a major target for drug therapy. Human Agmatinase retains about 30% identity to bacterial agmatinases and less than 20% identity to mammalian arginases. Residues required for binding of Mn<sup>2+</sup> at the active site in bacterial Agmatinase and other members of the arginase superfamily are fully conserved in human Agmatinase. Agmatinase mRNA is most abundant in human liver and kidney, but is also expressed in several other tissues, including skeletal muscle and brain. Expression of Agmatinase mRNA in human liver is induced during hepatitis B virus infection, suggesting that Agmatinase may contribute to the pathophysiology of this disease.

## REFERENCES

1. Iyer, R.K., et al. 2002. Cloning and characterization of human Agmatinase. *Mol. Genet. Metab.* 75: 209-218.
2. Mistry, S.K., et al. 2002. Cloning of human Agmatinase. An alternate path for polyamine synthesis induced in liver by hepatitis B virus. *Am. J. Physiol. Gastrointest. Liver Physiol.* 282: G375-G381.
3. Santos, A.R., et al. 2005. Mechanisms involved in the antinociception caused by agmatine in mice. *Neuropharmacology* 48: 1021-1034.
4. Wang, J.F., et al. 2005. Inhibitory effect of agmatine on proliferation of tumor cells by modulation of polyamine metabolism. *Acta Pharmacol. Sin.* 26: 616-622.

## CHROMOSOMAL LOCATION

Genetic locus: AGMAT (human) mapping to 1p36.21; Agmat (mouse) mapping to 4 E1.

## SOURCE

Agmatinase (G-12) is a mouse monoclonal antibody raised against amino acids 53-160 mapping within an internal region of Agmatinase of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Agmatinase (G-12) is available conjugated to agarose (sc-166414 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166414 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166414 PE), fluorescein (sc-166414 FITC), Alexa Fluor<sup>®</sup> 488 (sc-166414 AF488), Alexa Fluor<sup>®</sup> 546 (sc-166414 AF546), Alexa Fluor<sup>®</sup> 594 (sc-166414 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-166414 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-166414 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-166414 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

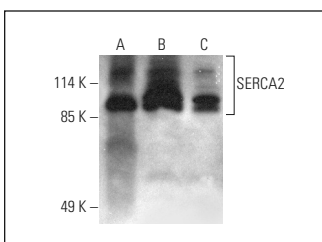
Agmatinase (G-12) is recommended for detection of Agmatinase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Agmatinase siRNA (h): sc-60060, Agmatinase siRNA (m): sc-60061, Agmatinase shRNA Plasmid (h): sc-60060-SH, Agmatinase shRNA Plasmid (m): sc-60061-SH, Agmatinase shRNA (h) Lentiviral Particles: sc-60060-V and Agmatinase shRNA (m) Lentiviral Particles: sc-60061-V.

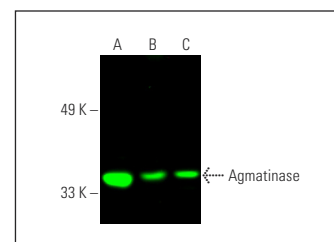
Molecular Weight of Agmatinase: 38 kDa.

Positive Controls: rat liver extract: sc-2395, mouse liver extract: sc-2256 or Hep G2 cell lysate: sc-2227.

## DATA



SERCA2 (F-1) HRP: sc-376235 HRP. Direct western blot analysis of SERCA2 expression in A-431 (A), K-562 (B) and THP-1 (C) whole cell lysates.



Agmatinase (G-12): sc-166414. Near-infrared western blot analysis of Agmatinase expression in Hep G2 whole cell lysate (A) and mouse liver (B) and rat liver (C) tissue extracts. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

## SELECT PRODUCT CITATIONS

1. Zhu, H.E., et al. 2019. Agmatinase promotes the lung adenocarcinoma tumorigenesis by activating the NO-MAPKs-PI3K/Akt pathway. *Cell Death Dis.* 10: 854.
2. Yan, S., et al. 2023. The expression of agmatinase manipulates the affective state of rats subjected to chronic restraint stress. *Neuropharmacology* 229: 109476.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.