SANTA CRUZ BIOTECHNOLOGY, INC.

Arginine (21C7): sc-57624

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Arginine is an α-amino acid that is synthesized by humans in the urea cycle and is also found in many foods, including chocolate, wheat germ and flour, dairy products, beef, pork and nuts. Arginine is basic with a long side chain nearest to the backbone that is carbon-containing and hydrophobic and a complex guanidinium group on the end. The guanidinium group has a pKa of 12.48 and is positively charged in neutral, acidic and even most basic environments. Since Arginine has the ability to easily form hydrogen bonds, it is usually found on the outside of the proteins where it can interact with the polar environment. Arginine plays a key role in many biological processes, including cell division, healing of wounds, removal of ammonia from the body, immune function and release of hormones. Arginine also functions as the immediate precursor of nitric oxide, urea, ornithine and agmatine.

REFERENCES

1. Marletta, M.A., Yoon, P.S., Iyengar, R., Leaf, C.D. and Wishnok, J.S. 1989. Macrophage oxidation of L-Arginine to nitrite and nitrate: nitric oxide is an intermediate. J. Biol. Chem. 27: 8706-8711.
2. Castillo, L., deRojas, T.C., Chapman, T.E., Vogt, J., Burke, J.F., Tannenbaum, S.R. and Young, V.R. 1993. Splanchnic metabolism of dietary Arginine in relation to nitric oxide synthesis in normal adult man. Proc. Natl. Acad. Sci. USA 90: 193-197.
3. Castillo, L., Ajami, A., Branch, S., Chapman, T.E., Yu, Y.M., Burke, J.F. and Young, VR. 1994. Plasma Arginine kinetics in adult man: response to an Arginine-free diet. Metab. Clin. Exp. 43: 114-122.
4. Argaman, Z., Young, V.R., Noviski, N., Castillo-Rosas, L., Lu, X.M., Zurakowski, D., Cooper, M., Davison, C., Tharakan, J.F., Ajami, A. and Castillo, L. 2003. Arginine and nitric oxide metabolism in critically ill septic pediatric patients. Crit. Care Med. 31: 591-597.
5. Morris, S.M. 2004. Enzymes of Arginine metabolism. J. Nutr. 134: 2743-2747.
6. Thompson, P.R. and Fast, W. 2006. Histone citrullination by protein Arginine deiminase: is Arginine methylation a green light or a roadblock? ACS Chem. Biol. 1: 433-441.

SOURCE

Arginine (21C7) is a mouse monoclonal antibody raised against asymmetric NG-NG-dimethyl Arginine.

PRODUCT

Each vial contains 100 µl ascites containing IgM with < 0.1% sodium azide.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

APPLICATIONS

Arginine (21C7) is recommended for detection of free and bound asymmetric NG-NG-dimethyl Arginine by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500).

SELECT PRODUCT CITATIONS

1. Vaes, B.L., Lute, C., van der Woning, S.P., Piek, E., Vermeer, J., Blom, H.J., Mathers, J.C., Müller, M., de Groot, L.C. and Steegenga, W.T. 2010. Inhibition of methylation decreases osteoblast differentiation via a non-DNA-dependent methylation mechanism. Bone 46: 514-523.

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.