Product Data Sheet

Product Name: L-Homocitrulline
Cat. No.: GC31587

Chemical Properties

Cas. No.	1190-49-4		
SMILES	[H][C@](N)(CCCCNC(N)=O)C(O)=O		
Formula	$C_7H_{15}N_3O_3$	M.Wt	189.21
Solubility	H_2O : 33.33 mg/mL (176.15 mM; ultrasonic and warming and heat to 60°C); DMSO : < 1 mg/mL (insoluble or slightly soluble)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	L-Homocitrulline		

Background

Homocitrulline is an amino acid and a product of carbamylation, a post-translational modification of proteins and amino acids.[1,2] It is formed by the adduction of isocyanic acid, a product of urea degradation or thiocyanate oxidation induced by myeloperoxidase (MPO), to the ε-amino group of lysine residues.[2] Protein-bound homocitrulline levels are increased in the aortas of transgenic *Ldlr*$^{-/-}$ mice expressing human MPO fed a high-fat atherogenic diet.[3] Intra-articular injection of homocitrulline-containing peptides induce the development of arthritis in mice.[4] Homocitrulline-containing peptide and anti-homocitrulline antibody levels are increased in whole blood from patients with erosive rheumatoid arthritis compared to patients with non-erosive rheumatoid arthritis.

1.Shi, J., Knevel, R., Suwannalai, P., et al.Autoantibodies recognizing carbamylated proteins are present in sera of patients with rheumatoid arthritis and predict joint

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damageProc. Natl. Acad. Sci. USA108(42)17372-17377(2011) 2.Verbrugge, F.H., Tang, W.H.W., and Hazen, S.L.Protein carbamylation and cardiovascular diseaseKidney Int.88(3)474-478(2015) 3.Wang, Z., Nicholls, S.J., Rodriquez, E.R., et al.Protein carbamylation links inflammation, smoking, uremia and atherogenesisNat. Med.13(1)1176-1184(2007) 4.Mydel, P., Wang, Z., Brisslert, M., et al.Carbamylation-dependent activation of T cells: A novel mechanism in the pathogenesis of autoimmune arthritisJ. Immunol.184(12)6882-6890(2010)

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