Product Data Sheet

Product Name: Valsartan D9
Cat. No.: GC37884

Chemical Properties

Cas. No.	1089736-73-1		
SMILES	CC(C)[C@@H](C(O)=O)N(C(C([2H])([2H])C([2H])([2H])C([2H])([2H])C([2H])([2H])C([2H])([2H])[2H])=O)CC(C=C1)=CC=C1C2=CC=CC=C2C3=NN=NN3		
Formula	$C_{24}H_{20}D_9N_5O_3$	M.Wt	444.57
Solubility	DMF: 30 mg/ml,DMSO: 30 mg/ml,Ethanol: 30 mg/ml	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	Valsartan D9		

Protocol

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Animal experiment:

Rats: Rats are randomly divided into two groups: (i) valsartan-treated group that is given intravenously 3 mg/kg/day valsartan in 0.5 mL normal saline via the vein daily for 1 week; (ii) hydralazine-treated group receiving 0.2 mg/kg/day hydralazine injection in saline; and (iii) control group that receives saline injection in the same way (n=15 for each group)[4]. Mice: Valsartan is dissolved in water containing 0.5% methylcellulose solution. Valsartan (5-40 mg/kg/d) is administered by oral (p.o.) route in a volume of 10 mL/kg body weight using the gavage technique. Potential alteration in blood pressure in response to chronic treatment with valsartan is assessed with a commercial blood pressure analysis systemdesigned. The mice are trained for at least 2 consecutive days to adapt to the apparatus before the study is initiated. To record the blood pressure, the mice are placed on a heated pad (35°C) and measured with a programmable tail-cuff sphygmomanometer in steady state. The average of 10 readings from each mouse is recorded[5].

References:

[1]. Shan H, et al. Valsartan ameliorates ageing-induced aorta degeneration via angiotensin II type 1 receptor-mediated ERK activity. J Cell Mol Med. 2014 Jun;18(6):1071-80.
[2]. Wang Y, et al. Valsartan blocked alcohol-induced,

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Toll-like receptor 2 signaling-mediated inflammation in human vascular endothelial cells. Alcohol Clin Exp Res. 2014 Oct;38(10):2529-40.
[3]. Sui X, et al. Novel mechanism of cardiac protection by valsartan: synergetic roles of TGF-β1 and HIF-1α in Ang II-mediated fibrosis after myocardial infarction. J Cell Mol Med. 2015 Aug;19(8):1773-82.
[4]. Jiang Y, et al. Cardioprotective effect of valsartan in mice with short-term high-salt diet by regulating cardiac aquaporin 1 and angiogenic factor expression. Cardiovasc Pathol. 2015 Jul-Aug;24(4):224-9.
[5]. Ping G, et al.

Product Data Sheet

Valsartan reverses depressive/anxiety-like behavior and induces hippocampal neurogenesis and expression of BDNF protein in unpredictable chronic mild stress mice. Pharmacol Biochem Behav. 2014 Sep;124:5-12.

Background

Valsartan-d_9 is intended for use as an internal standard for the quantification of valsartan by GC- or LC-MS. Valsartan is a nonpeptide antagonist of the angiotensin II type 1 (AT_1) receptor (IC_{50} = 2.7 nM).[1] It is 20,000-fold selective for AT_1 over AT_2 and, unlike some other AT receptor antagonists, does not alter peroxisome proliferator-activated receptor γ (PPARγ) activity *in vitro*.[2] *In vivo*, valsartan (30 mg/kg) increases cardiac output and reduces left ventricular fibrosis in a model of heart failure with reduced ejection fraction in mice with streptozotocin-induced diabetes.[3] Formulations containing valsartan have been used in the treatment of hypertension and heart failure.[4,2,5]

1.Burnier, M.Angiotensin II type 1 receptor blockersCirculation103(6)904-912(2001) 2.Munger, M.A.Use of angiotensin receptor blockers in cardiovascular protection: Current evidence and future directionsPT36(1)22-40(2011) 3.Suematsu, Y., Miura, S., Goto, M., et al.LCZ696, an angiotensin receptor-neprilysin inhibitor, improves cardiac function with the attenuation of fibrosis in heart failure with reduced ejection fraction in streptozotocin-induced diabetic miceEur. J. Heart Fail.18(4)386-393(2016) 4.Irons, B.K., Tsikouris, J.P., and Thomas, A.A.The use of angiostensin receptor blockers in the

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

treatment of chronic hear failureJ. Cardiovasc. Pharmacol.44(6)718-724(2004)
5.Schiffrin, E.L.Beyond blood pressure: The endothelium and atherosclerosis progressionAm. J. Hypertens.15(10 Pt 2)115S-122S(2002)