

Product Data Sheet

Product Name: Spironolactone-d 6 -1

Cat. No.: GC80845

Chemical Properties

Cas. No.

Formula $C_{24}H_{26}D_6O_4S$

M.Wt 422.61

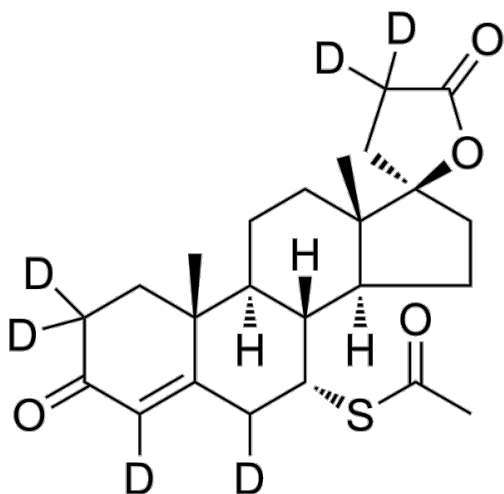
Solubility

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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



Background

Spironolactone -d 6 -1 is the deuterium labeled Spironolactone. Spironolactone is an aldosterone antagonist that acts on the aldosterone mineralocorticoid receptor ($IC_{50} = 24$ nM) and androgen receptor ($IC_{50} = 77$ nM), promotes podocyte autophagy and regulates pain. Spironolactone improves hypertension-related vascular hypertrophy and remodeling by reducing angiotensin II (Ang II)-induced inflammation, reduces aldosterone-induced vascular and soft tissue calcification through PIT1-dependent signaling, and alleviates vascular dysfunction in type II diabetic mice by reducing

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

oxidative stress and restoring NO/GC signaling; at low concentrations, it and its metabolites can interfere with aldosterone biosynthesis in the adrenal cortex and inhibit voltage-dependent Ca²⁺ channels to exert antihypertensive effects [1] [2] [3] [4] [5] [6] [7] [8] [9] [10].

In Vitro, Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs.

References:

- [1]. Sachiko Sakurabayashi-Kitade, et al. Aldosterone blockade by Spironolactone improves the hypertensive vascular hypertrophy and remodeling in angiotensin II overproducing transgenic mice. *Atherosclerosis*. 2009 Sep;206(1):54-60.
- [2]. Jakob Voelkl, et al. Spironolactone ameliorates PIT1-dependent vascular osteoinduction in klotho-hypomorphic mice. *J Clin Invest*. 2013 Feb;123(2):812-22.
- [3]. Omar M E Abdel-Salam, et al. Effect of spironolactone on pain responses in mice. *EXCLI J*. 2010 Feb 25;9:46-57.
- [4]. Marcondes A B Silva, et al. Spironolactone treatment attenuates vascular dysfunction in type 2 diabetic mice by decreasing oxidative stress and restoring NO/GC signaling. *Front Physiol*. 2015 Oct 5;6:269.
- [5]. Ryuzea Miura, et al. Anti-inflammatory effect of spironolactone on human peripheral blood mononuclear cells. *J Pharmacol Sci*. 2006 Jul;101(3):256-9.
- [6]. S C Cheng, et al. Effects of Spironolactone, Canrenone and Canrenoate-K on Cytochrome P450, and 11 β - and 18-Hydroxylation in Bovine and Human Adrenal Cortical Mitochondria¹. *Endocrinology*. 1976 Oct;99(4):1097-106.
- [7]. R Sorrentino. Effect of Spironolactone and Its Metabolites on Contractile Property of Isolated Rat Aorta Rings. *J Cardiovasc Pharmacol*. 2000 Aug;36(2):230-5.
- [8]. Kim GK, et al. Oral Spironolactone in Post-teenage Female Patients with Acne Vulgaris: Practical Considerations for the Clinician Based on Current Data and Clinical Experience. *J Clin Aesthet Dermatol*. 2012;5(3):37-50.
- [9]. Fagart J, et al. A new mode of mineralocorticoid receptor antagonism by a potent and selective nonsteroidal molecule. *J Biol Chem*. 2010;285(39):29932-29940.
- [10]. Dong D, et al. Spironolactone alleviates diabetic nephropathy through promoting autophagy in podocytes. *Int Urol Nephrol*. 2019;51(4):755-764.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA