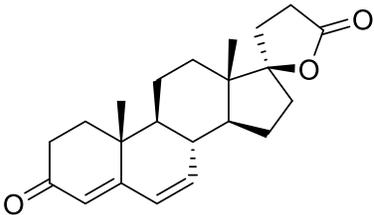


Product data sheet



MedKoo Cat#: 540056 Name: Canrenone CAS#: 976-71-6 Chemical Formula: C ₂₂ H ₂₈ O ₃ Exact Mass: 340.2038 Molecular Weight: 340.46		
Product supplied as:		Powder
Purity (by HPLC):		≥ 98%
Shipping conditions		Ambient temperature
Storage conditions:		Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Canrenone is a metabolite of spironolactone, Na/K ATPase partial agonist and aldosterone and androgen receptor antagonist used as a diuretic.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	68	199.72

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.94 mL	14.69 mL	29.37 mL
5 mM	0.59 mL	2.94 mL	5.87 mL
10 mM	0.29 mL	1.47 mL	2.94 mL
50 mM	0.06 mL	0.29 mL	0.59 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Caligiuri A, De Franco RM, Romanelli RG, Gentilini A, Meucci M, Failli P, Mazzetti L, Rombouts K, Geerts A, Vanasia M, Gentilini P, Marra F, Pinzani M. Antifibrogenic effects of canrenone, an antialdosteronic drug, on human hepatic stellate cells. *Gastroenterology*. 2003 Feb;124(2):504-20. doi: 10.1053/gast.2003.50058. PMID: 12557155.

In vivo study

1. Vassallo PF, Stefanon I, Rossoni LV, França A, Vassallo DV. Small doses of canrenone block the effects of ouabain on the mechanical activity of the heart and vessels of the rat. *J Cardiovasc Pharmacol*. 1998 Nov;32(5):679-85. doi: 10.1097/00005344-199811000-00001. PMID: 9821839.

7. Bioactivity

Biological target:

Canrenone (Aldadiene) is an aldosterone antagonist extensively used as a diuretic agent.

In vitro activity

Canrenone dose-dependently reduced platelet-derived growth factor-induced cell proliferation and motility. This effect was not associated with either changes in the phosphorylation of platelet-derived growth factor receptor and phospholipase C gamma or in the activation of the Ras/extracellular signal-regulated kinase pathway, whereas it was accompanied by a dose-dependent inhibition of

Product data sheet



platelet-derived growth factor-induced phosphatidylinositol 3-kinase activity. In addition, canrenone inhibited the activity of the Na(+)/H(+) exchanger 1 induced by platelet-derived growth factor. The effect of canrenone on Na(+)/H(+) exchanger 1 activity was reproduced by phosphatidylinositol 3-kinase inhibitors, thus supporting an inhibitory action of canrenone on phosphatidylinositol 3-kinase activity. To further address this possibility, the action of canrenone was compared with that of 2 established Na(+)/H(+) exchanger 1 inhibitors: ethylisopropylamiloride and cariporide. Whereas ethylisopropylamiloride was able to inhibit platelet-derived growth factor-induced phosphatidylinositol 3-kinase activity, cariporide was without any effect. Both compounds reproduced the effects of canrenone on platelet-derived growth factor-induced mitogenesis and chemotaxis. Finally, canrenone was able to reduce transforming growth factor-beta1-induced de novo synthesis of procollagen type I/IV and fibronectin and thrombin-induced hepatic stellate cell contraction.

Reference: Gastroenterology. 2003 Feb;124(2):504-20. <https://linkinghub.elsevier.com/retrieve/pii/S0016508502159099>

In vivo activity

In this study, the effects of low doses or concentrations of canrenone were investigated in rats by using isolated papillary muscles, Langendorff-perfused hearts, perfused rat-tail vascular bed, and anesthetized animals. Canrenone (0.5, 1, 2, and 5 mg/ml) produced a dose-dependent negative inotropic effect in papillary muscles contracting isometrically and blocked the positive inotropic effect produced by 660 microM ouabain. In Langendorff-perfused hearts beating spontaneously, a low concentration of canrenone (10 microg/ml) increased the isovolumic systolic pressure obtained at several diastolic pressures. Higher concentrations of canrenone (20, 30 microg/ml) brought the isovolumic pressure toward control values, and 100 microg/ml canrenone produced an isovolumic pressure reduction. In these preparations, 20 microg/ml canrenone reduced significantly the positive inotropic effects of 100 microM ouabain. Investigating the vascular smooth muscle reactivity to phenylephrine (PE; 0.5, 1, and 2 microg bolus injections) in the perfused rat-tail vascular bed, it was observed that canrenone blocked completely the enhancement of PE pressor effect produced by 1-h treatment with 100 microM ouabain. Similar results were obtained with the arterial blood pressure reactivity to PE in anesthetized rats. In these animals, canrenone (1 mg/kg) blocked the sensitizing effect of 18 microg/kg ouabain on PE reactivity. In conclusion, results presented here suggest that canrenone may block ouabain effects at very low concentrations. It blocked myocardial positive inotropic effects of ouabain on both papillary muscle and perfused hearts, and the sensitization of PE pressor effects. The results also suggest that canrenone at very small doses might be used to reduce arterial blood pressure in hypertensive conditions accompanied by increased ouabain plasma levels as the main therapeutic procedure or as an adjunct treatment to prevent ouabain sensitizing effects on pressor responses.

Reference: J Cardiovasc Pharmacol. 1998 Nov;32(5):679-85. <https://doi.org/10.1097/00005344-199811000-00001>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.