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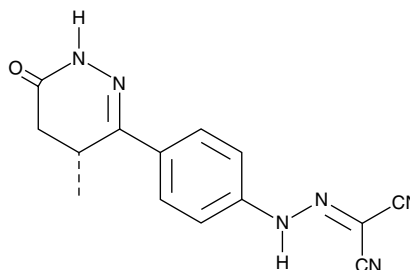
Product Information



Levosimendan

Item No. 16128

CAS Registry No.: 141505-33-1
Formal Name: 2-[2-[4-[(4R)-1,4,5,6-tetrahydro-4-methyl-6-oxo-3-pyridazinyl]phenyl]hydrazinylidene]-propanedinitrile
Synonyms: OR 1259, Simdax®, (R)-Simendan
MF: C₁₄H₁₂N₆O
FW: 280.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 250, 290, 382 nm



Laboratory Procedures

For long term storage, we suggest that levosimendan be stored as supplied at -20°C. It should be stable for at least two years.

Levosimendan is supplied as a crystalline solid. A stock solution may be made by dissolving the levosimendan in the solvent of choice. Levosimendan is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of levosimendan in these solvents is approximately 10, 25, and 30 mg/ml, respectively.

Levosimendan is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Levosimendan is a calcium sensitizer that can cause increased cardiac contractility by binding troponin C (EC₅₀ = 9 nM), promotes vasodilation by activating ATP-sensitive potassium channels on vascular smooth muscle cells (EC₅₀ = 0.28 μM), and performs a cardioprotective function by prompting the opening of mitochondrial potassium channels in cardiomyocytes.¹⁻² It also has been reported to inhibit phosphodiesterases 3 and 4 in left ventricular cardiac tissue with IC₅₀ values of 2.5 nM and 25 μM, respectively.³

References

1. Nieminen, M.S., Fruhwald, S., Heunks, L.M.A., *et al.* Levosimendan: Current data, clinical use and future development. *Heart Lung Vessel* **5**(4), 227-245 (2013).
2. Papp, Z., Csapó, K., Pollesello, P., *et al.* Pharmacological mechanisms contributing to the clinical efficacy of levosimendan. *Cardiovasc. Drug Rev.* **23**(1), 71-98 (2005).
3. Szilgyi, S., Pollesello, P., Levijoki, J., *et al.* The effects of levosimendan and OR-1896 on isolated hearts, myocyte-sized preparations and phosphodiesterase enzymes of the guinea pig. *Eur. J. Pharmacol.* **486**, 67-74 (2004).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/16128

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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