

Product Data Sheet

Product Name: Etomidate

Cat. No.: GC16134

Chemical Properties

Cas. No. 33125-97-2

Chemical Name ethyl 3-[(1R)-1-phenylethyl]imidazole-4-carboxylate

SMILES CCOC(=O)C1=CN=CN1C(C)C2=CC=CC=C2

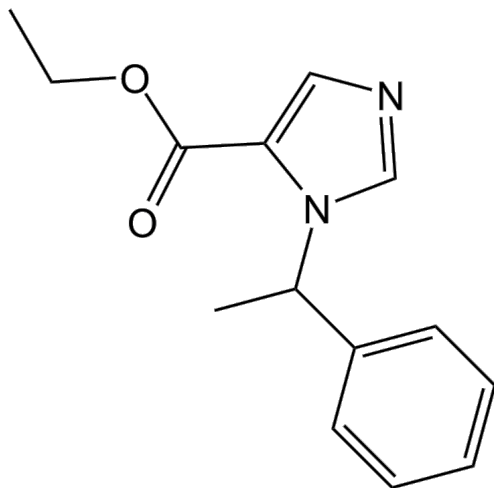
Formula $C_{14}H_{16}N_2O_2$ M.Wt 244.29

Solubility $\geq 12.2\text{mg/mL}$ in DMSO 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



Protocol

Cell experiment [1]:

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

Cell lines	human embryonic kidney (HEK293) cells (with high expression levels of the cloned murine 2A-adrenoceptor , α 2C-adrenoceptor and α 2B -adrenoceptor subtypes)
Preparation method	The solubility of this compound in DMSO is >12.2mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting condition	10 μ M for 20 min
Applications	In membranes from HEK293 cells transfected with α 2-receptors, etomidate inhibited binding of the α 2-antagonist, [3H]RX821002, with higher potency from α 2B- and α 2C-receptors than from α 2A-receptors. Etomidate activated mitogen-activated protein kinase phosphorylation via α 2B -receptors. In α 2B-receptor-expressing HEK293 cells, stimulated with 10 μ M etomidate for 20 min rapidly increased phosphorylation of the extracellular signal-related kinases ERK1/2.

Animal experiment [2]:

Animal models	α 2Adrenoceptor-deficient Mice, α 2Bdrenoceptor-deficient Mice
Dosage form	intraperitoneal injection ,5–50 mg/kg body weight

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

Application

These results showed that 27% of the mice lost the reflex at 10 mg/kg etomidate and all mice transiently lost the righting reflex at 20mg/kg and higher etomidate doses. After injection of etomidate at 30 mg/kg, the righting reflex disappeared in wild-type and $\alpha 2$ A-deficient mice at similar times after intraperitoneal injection. On intravenous injection of etomidate at 30 mg/kg, wild-type mice showed a rapid and transient hypertensive response that was completely absent in mice lacking $\alpha 2$ B-receptors.

Other notes

Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

References:

[1]. Paris A, Philipp M, Tonner PH., et al. Activation of alpha 2B-adrenoceptors mediates the cardiovascular effects of etomidate. Anesthesiology. 2003 Oct;99(4):889-95.

Background

Etomidate(R-16659) is a GABAA receptors agonist, which is a short acting intravenous anaesthetic agent used for the induction of general anaesthesia. Target: GABA Receptor Etomidate is a potent inhibitor of the adrenal response to surgery. The absence of clinical consequences associated with the blunted response suggests that a major increase in adrenal hormone production may not be necessary during surgery [1]. Etomidate is an intravenous induction agent that is associated with hemodynamic stability during intubation. The agent is therefore attractive for use in critically ill patients who have a high risk of hemodynamic instability during this procedure [2]. Etomidate use was not associated with all cause 28-day mortality or hospital mortality but was associated with significantly higher ICU mortality (91% vs. 64% for etomidate and controls groups, respectively; $p = 0.02$). Etomidate patients who received subsequent doses of hydrocortisone required lower doses of vasopressors and had more vasopressor-free days but no improvement in mortality [3]. Clinical indications: FDA Approved Date: 1983 Toxicity: Undesirable side effects of etomidate that may limit its use include pain on injection, myoclonus and adrenocortical suppression lasting 4-6 hours following

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

an induction dose.

References:

- [1]. Griesdale, D.E., Etomidate for intubation of patients who have sepsis or septic shock - where do we go from here Crit Care, 2012. 16(6): p. 189.
- [2]. Cherfan, A.J., et al., Etomidate and mortality in cirrhotic patients with septic shock. BMC Clin Pharmacol, 2011. 11: p. 22.
- [3]. Mehta, M.P., et al., Etomidate anesthesia inhibits the cortisol response to surgical stress. Acta Anaesthesiol Scand, 1985. 29(5): p. 486-9.

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