

Product Data Sheet

Product Name: Esmolol-d7 (hydrochloride)

Cat. No.: GC47307

Chemical Properties

Cas. No. 1346598-13-7

SMILES OC(COC1=CC=C(CCC(OC)=O)C=C1)CNC(C([2H])([2H])[2H])([2H])C([2H])([2H])[2H].Cl

Formula C₁₆H₁₈D₇NO₄.HCl

M.Wt 338.9

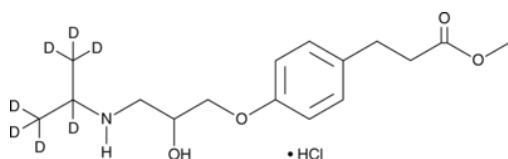
Solubility Methanol: soluble

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

Esmolol-d7 is intended for use as an internal standard for the quantification of esmolol by GC- or LC-MS. Esmolol is a β_1 -adrenergic receptor (β_1 -AR) antagonist.¹ It binds to β_1 -ARs (K_D = 100 nM in isolated cardiac myocytes) and is 34-fold selective for β_1 - over β_2 -ARs.^{1,2} Esmolol also inhibits L-type Ca^{2+} currents ($I_{Ca,L}$) and the fast Na^+ current (I_{Na}) in rat cardiac myocytes (IC_{50} s = 50 and 169 μ M, respectively), which results in complete ventricular arrest at concentrations greater than or equal to 1 mM.¹ Formulations containing esmolol have been used in the treatment of cardiac arrhythmias, postoperative hypertension, and acute ischemic heart disease, as well as to minimize myocardial contraction during cardiac surgery and attenuate the adrenergic response associated with tracheal intubation.

1. Fallouh, H.B., Bardswell, S.C., McLatchie, L.M., et al. Esmolol cardioplegia: The cellular mechanism of diastolic arrest. *Cardiovasc. Res.* 87(3):552-560 (2010).
2. Jahn, P., Eckrich, B., Schneidrowski, B., et al. β_1 -adrenoceptor subtype selective antagonism of esmolol and its major metabolite in vitro and in

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

man. Investigations using tricresylphosphate as red blood cell carboxylesterase inhibitorArznei.-
Forschung45(5)536-541(1995)

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