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Zuschläge

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- Trockeneiszuschlag
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- Expressversand

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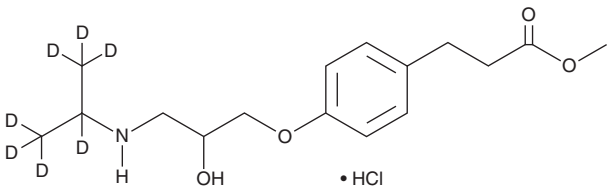
PRODUCT INFORMATION

Esmolol-d_7 (hydrochloride)

Item No. 30727

CAS Registry No.: 1346598-13-7
Formal Name: methyl 3-(4-(2-hydroxy-3-((propan-2-yl-d_7)amino)propoxy)phenyl) propanoate, monohydrochloride
MF: $C_{16}H_{18}D_7NO_4 \bullet HCl$
FW: 338.9
Chemical Purity: ≥95% (Esmolol)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_7); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Esmolol-d_7 (hydrochloride) is intended for use as an internal standard for the quantification of esmolol (Item No. 22581) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Esmolol-d_7 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the esmolol-d_7 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Esmolol-d_7 (hydrochloride) is soluble in methanol.

Description

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 µM, 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.

References

1. Fallouh, H., 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.* Beta 1-adrenoceptor subtype selective antagonism of esmolol and its major metabolite in vitro and in man. Investigations using tricresylphosphate as red blood cell carboxylesterase inhibitor. *Arzneimittelforschung* **45(5)**, 536-541 (1995).

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