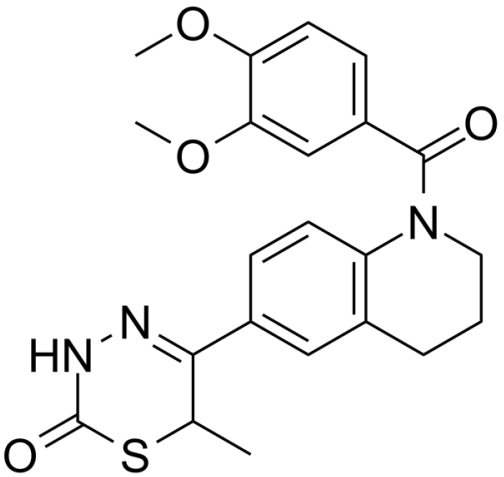
Product Data Sheet

Product Name: (+)-EMD 57033
Cat. No.: GC70265

Chemical Properties

Cas. No.	147527-31-9		
Formula	$C_{22}H_{23}N_3O_4S$	M.Wt	425.5
Solubility	DMSO : 100 mg/mL (235.02 mM; Need ultrasonic; Hygroscopic DMSO has a significant impact on the solubility of product, please use newly opened DMSO)	Storage	-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

(+)-EMD 57033 is a cardiac troponin C (cTnC) activator, is a dominant Ca2+ sensitizer. (+)-EMD 57033 binds the cardiac/slow skeletal troponin C isoform and exerts myocardial contractile promotion function.

Caution: Product has not been fully validated for medical applications. For research use only.
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(+)-EMD 57033 (30 μM) recovers the activation and sensitivity of Ca^{2+} in pig single muscle fibres and reduces VIDD (ventilator-induced diaphragm muscle fibre dysfunction) of [2].
(+)-EMD 57033 (5.0-5.8 μM; 10-15 min) significantly increases the coronary blood flow and myocardial $\dot{V}o_2$ (O_2 consumption) in both 100 bpm and 150 bpm heart rates of rabbit heart, with a $[Ca^{2+}]_0$ concentration-dependent manner ($[Ca^{2+}]_0$=1.0 or 2.5 mM)[3].
(+)-EMD 57033 (5.0-5.8 μM; 10-15 min) increases left ventricular (LV) end-diastolic pressure and prolongs relaxation[3].

(+)-EMD 57033 (0.4 or 0.8 mg/kg/min; i.v.drip; over than 20 min) enhances contractility and achieves Ca^{2+} sensitization in intact failing hearts at substantial energetic savings and without compromise of diastolic function in dogs[4].

References:
[1]. Wang X, et al. Structure of the C-domain of human cardiac troponin C in complex with the Ca2+ sensitizing drug EMD 57033. J Biol Chem. 2001 Jul 6;276(27):25456-66.
[2]. Ochala J, et al. EMD 57033 partially reverses ventilator-induced diaphragm muscle fibre calcium desensitisation. Pflugers Arch. 2010 Feb;459(3):475-83.
[3]. Hgashiyama A, et al. Effects of EMD 57033 on contraction and relaxation in isolated rabbit hearts. Circulation. 1995 Nov 15;92(10):3094-104.
[4]. Senzaki H, et al. Improved mechanoenergetics and cardiac rest and reserve function of in vivo failing heart by calcium sensitizer EMD-57033. Circulation. 2000 Mar 7;101(9):1040-8.

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