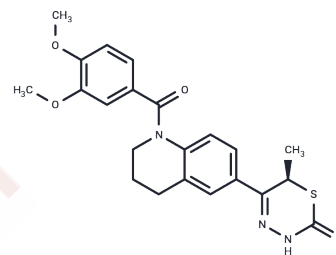


EMD57033

## Chemical Properties

CAS No. : 147527-31-9  
 Formula: C<sub>22</sub>H<sub>23</sub>N<sub>3</sub>O<sub>4</sub>S  
 Molecular Weight: 425.5  
 Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year  
*Actual storage temperature shall be subject to the COA.*



## Biological Description

Description	EMD57033 is a cardiac troponin C (cTnC) activator, a dominant Ca <sup>2+</sup> sensitizer, which functions by binding to cardiac/slow skeletal troponin C heterodimers to promote cardiac contraction.
Targets(IC50)	Others, Calcium Channel, Carbonic Anhydrase, PDE
In vitro	EMD57033 (5.0 to 5.8 μmol/L) enhances contractility and prolongs relaxation. Its effects are modulated by heart rate, [Ca <sup>2+</sup> ] <sub>o</sub> , and contraction mode, with positive inotropic effects being more prominent for ejecting beats.[4]
In vivo	EMD-57033 (0.4 mg. kg <sup>-1</sup> . min <sup>-1</sup> ) for 20 minutes) selective Ca <sup>2+</sup> sensitization with minimal PDE3I in vivo is achieved, improving basal and rate-stimulated contractility and mechanoenergetics of HF without compromising diastolic function. Despite PDE3I activity at higher doses, energetic benefits persist.[5]

## Solubility Information

Solubility	DMSO: 145 mg/mL (340.78 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (4.7 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

## Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3502 mL	11.7509 mL	23.5018 mL
5 mM	0.470 mL	2.3502 mL	4.7004 mL
10 mM	0.235 mL	1.1751 mL	2.3502 mL
50 mM	0.047 mL	0.235 mL	0.470 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

## Reference

- Papadaki M, et al. Uncoupling of myofilament Ca<sup>2+</sup> sensitivity from troponin I phosphorylation by mutations can be reversed by epigallocatechin-3-gallate. *Cardiovasc Res.* 2015 ; 108(1):99-110.
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- Hgashiyama A, et al. Effects of EMD 57033 on contraction and relaxation in isolated rabbit hearts. *Circulation.* 1995 ; 92(10):3094-3104.
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- Ochala J, et al. EMD 57033 partially reverses ventilator-induced diaphragm muscle fibre calcium desensitisation. *Pflugers Arch.* 2010 ; 459(3):475-483.
- Wang X, et al. Structure of the C-domain of human cardiac troponin C in complex with the Ca<sup>2+</sup> sensitizing drug EMD 57033. *J Biol Chem.* 2001 ; 276(27):25456-25466.

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