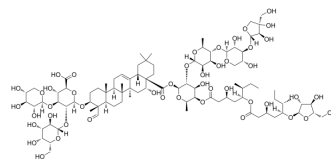


## QS-21

Cat. No.:	HY-101092		
CAS No.:	141256-04-4		
Molecular Formula:	C <sub>92</sub> H <sub>148</sub> O <sub>46</sub>		
Molecular Weight:	1990.13		
Target:	NOD-like Receptor (NLR)		
Pathway:	Immunology/Inflammation		
Storage:	Powder	-20°C	3 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (50.25 mM; Need ultrasonic)  
 H<sub>2</sub>O : 50 mg/mL (25.12 mM; Need ultrasonic)

Concentration	Solvent	Mass	1 mg			5 mg			10 mg		
			Concentration			Concentration			Concentration		
Preparing Stock Solutions	1 mM		0.5025 mL			2.5124 mL			5.0248 mL		
	5 mM		0.1005 mL			0.5025 mL			1.0050 mL		
	10 mM		0.0502 mL			0.2512 mL			0.5025 mL		

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
 Solubility: ≥ 2.5 mg/mL (1.26 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
 Solubility: ≥ 2.5 mg/mL (1.26 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
 Solubility: ≥ 2.5 mg/mL (1.26 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

QS-21, an immunostimulatory saponin, could be used as a potent vaccine adjuvant. QS-21 stimulates Th2 humoral and Th1 cell-mediated immune responses through action on antigen presenting cells (APCs) and T cells. QS-21 can activate the NLRP3 inflammasome with subsequent release of caspase-1 dependent cytokines, IL-1β and IL-18<sup>[1][2][3]</sup>.

#### IC<sub>50</sub> & Target

NLRP3 inflammasome

#### In Vivo

Studies in mouse APCs (DCs and macrophages) identify QS-21 as an activator of the NLRP3 inflammasome, and cause

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subsequent release of caspase-1 dependent proinflammatory cytokines I1-1 $\beta$ /I1-18 that can promote Th 17 cell maturation or drive INF- $\gamma$ -mediated Th1 responses, respectively<sup>[3]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## REFERENCES

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[1]. Fernández-Tejada A, et al. Development of Improved Vaccine Adjuvants Based on the Saponin Natural Product QS-21 through Chemical Synthesis. *Acc Chem Res.* 2016;49(9):1741-1756.

[2]. Marty-Roix R, et al. Identification of QS-21 as an Inflammasome-activating Molecular Component of Saponin Adjuvants. *J Biol Chem.* 2016;291(3):1123-1136

[3]. Lacaille-Dubois MA. Updated insights into the mechanism of action and clinical profile of the immunoadjuvant QS-21: A review. *Phytomedicine.* 2019;60:152905.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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