

QS-21 Data Sheet



Cat. No.: AFG-MCH-00002

CAS No.: 141256-04-4

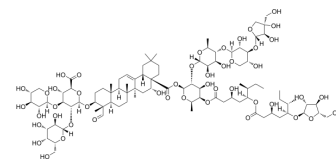
Molecular Formula: $C_{92}H_{148}O_{46}$

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 ₂ O : 50 mg/mL (25.12 mM; Need ultrasonic)					
	Preparing Stock Solutions	<div><div>Solvent</div><div>Concentration</div></div>	Mass	1 mg	5 mg	10 mg
		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	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (50.25 mM); Clear solution; Need ultrasonic					
	2. 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					
	3. 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					
	4. 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 ^{[1][2][3]} .
IC ₅₀ & Target	NLRP3 inflammasome

In Vivo

Studies in mouse APCs (DCs and macrophages) identify QS-21 as an activator of the NLRP3 inflammasome, and cause subsequent release of caspase-1 dependent proinflammatory cytokines IL-1 β /IL-18 that can promote Th 17 cell maturation or drive INF- γ -mediated Th1 responses, respectively^[3].

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

CUSTOMER VALIDATION

- iScience. 2024 Apr 8.
- CNS Neurosci Ther. 2024 Aug;30(8):e70006.
- Mol Pharm. 2024 May 9.
- Patent. US20250027036A1.

REFERENCES

[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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