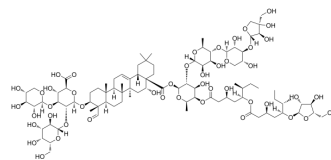


## QS-21

|                    |                                                                                  |
|--------------------|----------------------------------------------------------------------------------|
| 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<br>In solvent   -80°C    6 months<br>-20°C    1 month |



### SOLVENT & SOLUBILITY

|                                                                               |                                                                                                                                          |                                                      |           |           |           |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------|-----------|-----------|
| In Vitro                                                                      | DMSO : 100 mg/mL (50.25 mM; Need ultrasonic)<br>H <sub>2</sub> O : 50 mg/mL (25.12 mM; Need ultrasonic)                                  |                                                      |           |           |           |
|                                                                               | Preparing Stock Solutions                                                                                                                | <div>Solvent<br/>Concentration</div> <div>Mass</div> | 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<br>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<br>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)<br>Solubility: ≥ 2.5 mg/mL (1.26 mM); Clear solution            |                                                      |           |           |           |
|                                                                               | 4. Add each solvent one by one: 10% DMSO >> 90% corn oil<br>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 subsequent release of caspase-1 dependent proinflammatory cytokines IL-1 $\beta$ /IL-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.

## 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.

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

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