

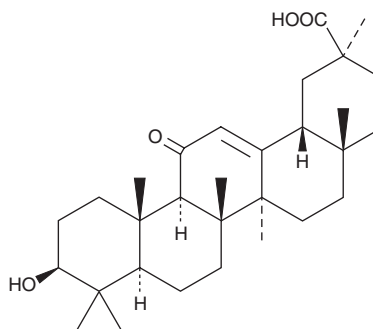
# PRODUCT INFORMATION



## 18 $\beta$ -Glycyrrhetic Acid

Item No. 11845

**CAS Registry No.:** 471-53-4  
**Formal Name:** (20 $\beta$ )-3 $\beta$ -hydroxy-11-oxo-olean-12-en-29-oic acid  
**Synonyms:** Arthrodont, Biosone, Enoxolone,  $\alpha$ -Glycyrrhetic Acid, GM 1658, NSC 35347, PO 12, STX 352  
**MF:** C<sub>30</sub>H<sub>46</sub>O<sub>4</sub>  
**FW:** 470.7  
**Purity:**  $\geq 98\%$   
**UV/Vis.:**  $\lambda_{\text{max}}$ : 248 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

18 $\beta$ -Glycyrrhetic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the 18 $\beta$ -glycyrrhetic acid in the solvent of choice. 18 $\beta$ -Glycyrrhetic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of 18 $\beta$ -glycyrrhetic acid in these solvents is approximately 20, 16, and 13 mg/ml.

18 $\beta$ -Glycyrrhetic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 18 $\beta$ -glycyrrhetic acid should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 18 $\beta$ -Glycyrrhetic acid has a solubility of approximately 0.13 mg/ml in a 1:7 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

18 $\beta$ -Glycyrrhetic acid is a major metabolite of glycyrrhizin (Item No. 11847), one of the main constituents of licorice. Both 18 $\beta$ -glycyrrhetic acid and glycyrrhizin have been shown to exhibit anti-ulcerative, anti-inflammatory, and immunomodulatory properties. 18 $\beta$ -Glycyrrhetic acid is an inhibitor of the complement pathway ( $IC_{50} = 35 \mu\text{M}$ ).<sup>1</sup> At 100 mg/kg/day, 18 $\beta$ -glycyrrhetic acid is protective against diabetes complications by reducing lipid peroxidation and increasing antioxidant activity in diabetic rats.<sup>2</sup> 18 $\beta$ -Glycyrrhetic acid inhibits mammalian DNA polymerases  $\alpha$ ,  $\gamma$ ,  $\kappa$ , and  $\lambda$  with  $IC_{50}$  values of 16.1, 19.3, 15.8, and 13.7  $\mu\text{M}$ , respectively.<sup>3</sup> At 100-200  $\mu\text{M}$ , 18 $\beta$ -glycyrrhetic acid suppresses LPS-induced TNF- $\alpha$  production and NF- $\kappa\text{B}$  activation in mouse macrophages.<sup>3</sup>

### References

1. Kroes, B.H., Beukelman, C.J., van den Berg, A.J.J., *et al.* Inhibition of human complement by  $\beta$ -glycyrrhetic acid. *Immunology* **90**, 115-120 (1997).
2. Kalaierasi, P. and Pugalendi, K.V. Protective effect of 18 $\beta$ -glycyrrhetic acid on lipid peroxidation and antioxidant enzymes in experimental diabetes. *Journal of Pharmacy Research* **4(1)**, 107-111 (2011).
3. Ishida, T., Mizushina, Y., Yagi, S., *et al.* Inhibitory effects of glycyrrhetic acid on DNA polymerase and inflammatory activities. *Evid. Based Complement. Alternat. Med.* **2012**, (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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