

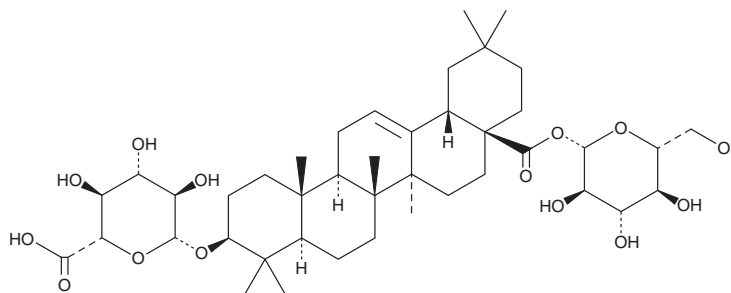
# PRODUCT INFORMATION



## Chikusetsusaponin IVa

Item No. 34832

**CAS Registry No.:** 51415-02-2  
**Formal Name:** (3 $\beta$ )-28-( $\beta$ -D-glucopyranosyloxy)-28-oxoolean-12-en-3-yl  $\beta$ -D-glucopyranosiduronic acid  
**Synonyms:** Chi IVa, Chikusetsu Saponin IVa  
**MF:** C<sub>42</sub>H<sub>66</sub>O<sub>14</sub>  
**FW:** 795.0  
**Purity:**  $\geq$ 98%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years  
**Item Origin:** Plant/*Panax pseudoginseng*



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

### Laboratory Procedures

Chikusetsusaponin IVa is supplied as a solid. A stock solution may be made by dissolving the chikusetsusaponin IVa in the solvent of choice, which should be purged with an inert gas. Chikusetsusaponin IVa is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of chikusetsusaponin IVa in these solvents is approximately 5 and 1 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of chikusetsusaponin IVa can be prepared by directly dissolving the solid in aqueous buffers. The solubility of chikusetsusaponin IVa in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Chikusetsusaponin IVa is an oleanane-type triterpenoid that has been found in *P. stipuleanatus* and has diverse biological activities.<sup>1-3</sup> It inhibits the growth of human HL-60 leukemia and HCT116 colon cancer cells (IC<sub>50</sub>s = 76.23 and 78.11  $\mu$ M, respectively).<sup>1</sup> Chikusetsusaponin IVa (50-200  $\mu$ g/ml) reduces LPS-induced increases in inducible nitric oxide synthase (iNOS), COX-2, IL-1 $\beta$ , IL-6, and TNF- $\alpha$  levels in THP-1 macrophages differentiated with phorbol 12-myristate 13-acetate (PMA; Item No. 10008014).<sup>2</sup> It decreases plasma glucose, triglyceride, and LDL-cholesterol, and increases HDL-cholesterol, levels in a rat model of type 2 diabetes induced by streptozotocin (STZ; Item No. 13104) and a high-fat diet when administered at doses ranging from 45 to 180 mg/kg.<sup>3</sup> It also decreases malondialdehyde (MDA), and increases superoxide dismutase (SOD), glutathione (GSH), and glutathione peroxidase 4 (GPX4), levels in the pancreas in the same model.

### References

1. Liang, C., Ding, Y., Nguyen, H.T., *et al.* Oleanane-type triterpenoids from *Panax stipuleanatus* and their anticancer activities. *Bioorg. Med. Chem. Lett.* **20(23)**, 7110-7115 (2010).
2. Wang, H., Qi, J., Li, L., *et al.* Inhibitory effects of Chikusetsusaponin IVa on lipopolysaccharide-induced pro-inflammatory responses in THP-1 cells. *Int. J. Immunopathol. Pharmacol.* **28(3)**, 308-317 (2015).
3. Wang, L., Duan, J., Jia, N., *et al.* IRS-2/Akt/GSK-3 $\beta$ /Nrf2 pathway contributes to the protective effects of Chikusetsu Saponin IVa against lipotoxicity. *Oxid. Med. Cell. Longev.* 8832318 (2021).

#### 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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