

# PRODUCT INFORMATION

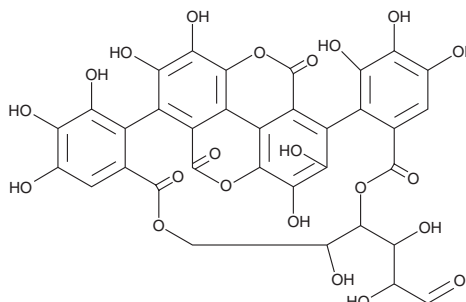


## Punicalin

Item No. 33714

**CAS Registry No.:** 65995-64-4  
**Formal Name:** cyclic 4,6-[(2S,2'S)-2,2'-(5,10-dihydro-2,3,7,8-tetrahydroxy-5,10-dioxo[1]benzopyrano[5,4,3-cde][1]benzopyran-1,6-diyl)bis[3,4,5-trihydroxybenzoate]] D-glucose

**MF:** C<sub>34</sub>H<sub>22</sub>O<sub>22</sub>  
**FW:** 782.5  
**Purity:** ≥95% (mixture of anomers)  
**UV/Vis.:** λ<sub>max</sub>: 219, 262 nm  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years  
**Item Origin:** Plant/*Punica granatum*



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

### Laboratory Procedures

Punicalin is supplied as a solid. A stock solution may be made by dissolving the punicalin in the solvent of choice, which should be purged with an inert gas. Punicalin is soluble in DMSO.

### Description

Punicalin is an ellagitannin that has been found in *P. granatum* and has diverse biological activities.<sup>1-3</sup> It inhibits the interaction between the severe acute respiratory coronavirus 2 (SARS-CoV-2) spike glycoprotein receptor-binding domain (RBD), also known as the surface glycoprotein RBD, and angiotensin-converting enzyme 2 (ACE2; IC<sub>50</sub> = 0.14 mg/ml).<sup>2</sup> Punicalin is an inhibitor of carbonic anhydrase with an IC<sub>50</sub> value of 1 μM.<sup>1</sup> It scavenges DPPH (Item No. 14805) radicals and superoxide anions, as well as inhibits lipid peroxidation, in cell-free assays in a concentration-dependent manner.<sup>3</sup> Punicalin (10 mg/kg per day) also increases the activities of superoxide dismutase (SOD) and glutathione peroxidase (GPX), and decreases the level of malondialdehyde (MDA), in the intestine in a mouse model of oxidative stress.

### References

1. Satomi, H., Umemura, K., Ueno, A., *et al.* Carbonic anhydrase inhibitors from the pericarps of *Punica granatum* L. *Biol. Pharm. Bull.* **16(8)**, 787-790 (1993).
2. Suručić, R., Travar, M., Petković, M., *et al.* Pomegranate peel extract polyphenols attenuate the SARS-CoV-2 S-glycoprotein binding ability to ACE2 receptor: *In silico* and *in vitro* studies. *Bioorg. Chem.* **114**, 105145 (2021).
3. Sun, Y.-Q., Xin, T., Men, X.-M., *et al.* *In vitro* and *in vivo* antioxidant activities of three major polyphenolic compounds in pomegranate peel: Ellagic acid, punicalin, and punicalagin. *J. Integr. Agric.* **16(8)**, 1808-1818 (2017).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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