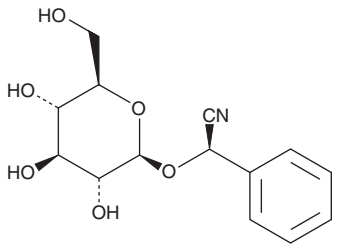
PRODUCT INFORMATION

(R)-Prunasin

Item No. 15959

CAS Registry No.:	99-18-3
Formal Name:	(αR)-(β-D-glucopyranosyloxy)-benzeneacetonitrile
MF:	$C_{14}H_{17}NO_6$
FW:	295.3
Purity:	≥95%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

(R)-Prunasin is supplied as a crystalline solid. A stock solution may be made by dissolving the (R)-prunasin in the solvent of choice, which should be purged with an inert gas. (R)-Prunasin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (R)-prunasin in ethanol and DMSO is approximately 10 mg/ml and approximately 15 mg/ml in DMF.

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 (R)-prunasin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (R)-prunasin in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(R)-Prunasin is a cyanogenic glucoside that is the precursor to amygdalin, a bitter component found in species of the genera *Prunus* and *Olinia*.[1] It can be degraded to hydrogen cyanide, glucose, and benzaldehyde by the action of prunasin hydrolase and mandelonitrile lyase and possesses inhibitory effects on plant growth.[1] (R)-Prunasin reportedly inhibits rat DNA polymerase β, which performs base excision repair required for DNA maintenance and replication, with an IC_{50} value of 98 µM.[2]

References

1. Sánchez-Pérez, R., Belmonte, F.S., Borch, J., *et al.* Prunasin hydrolases during fruit development in sweet and bitter almonds. *Plant Physiol.* **158(4)**, 1916-1932 (2012).
2. Mizushina, Y., Takahashi, N., Ogawa, A., *et al.* The cyanogenic glucoside, prunasin (D-mandelonitrile-β-D-glucoside), is a novel inhibitor of DNA polymerase β. *J. Biochem.* **126(2)**, 430-436 (1999).

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