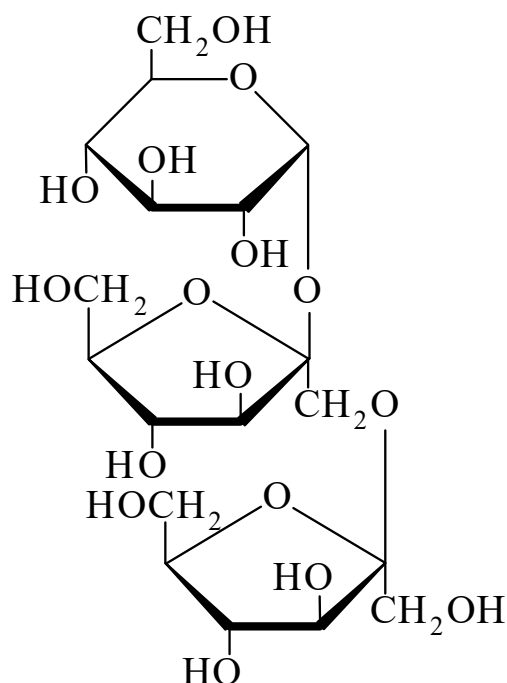




>>Entry Name: 1-Kestose

Synonym(s): *O*-β-D-Fructofuranosyl-(2→1)-β-D-fructofuranosyl α-D-glucopyranoside, 9Cl, 8Cl. *O*-α-D-Glucopyranosyl-(1→2)-*O*-β-D-fructofuranosyl-(1→2)-β-D-fructofuranoside. Isokestose. 1-Fructosylsucrose. Inulobiosylsucrose. 1-Kestotriose



CAS Registry Number: 470-69-9

Molecular Formula: C₁₈H₃₂O₁₆

Molecular Weight: 504.441

Accurate Mass: 504.16904

Percentage Composition: C 42.86%; H 6.39%; O 50.75%

Biological Source: Formed by the action of various enzymes on sucrose. Also isol. from some monocotyledons and from moulds, eg. *Aspergillus*

Use/Importance: Appears to play an essential role in the metabolism of D-fructose polymers in the tubers of the Jerusalem artichoke

Melting Point: Mp 82-88°. Mp 200-201° (double Mp)

Optical Rotation: $[\alpha]_D^{20} +28.5$ (c, 1.8 in H₂O)

>>Derivative: Undeca-Ac

Molecular Formula: C₄₀H₅₄O₂₇

Molecular Weight: 966.85

Accurate Mass: 966.285255

Percentage Composition: C 49.69%; H 5.63%; O 44.68%

Physical Description: Syrup

Optical Rotation: $[\alpha]_D^{20} +31.8$ (c, 3.7 in CHCl₃)

>>Derivative: Undeca-Me

Molecular Formula: C₂₉H₅₄O₁₆

Molecular Weight: 658.736

Accurate Mass: 658.34119

Percentage Composition: C 52.88%; H 8.26%; O 38.86%

Optical Rotation: $[\alpha]_D^{20} +27.9$ (c, 2.5 in H₂O)

References:

- Bacon, J.S.D. *et al.*, *J.C.S.*, 1953, 2528, (*isol*)
Barker, S.A. *et al.*, *J.C.S.*, 1954, 2125
Bacon, J.S.D., *Biochem. J.*, 1959, **73**, 507, (*isol*)
Gross, D., *Methods Carbohydr. Chem.*, 1962, **1**, 360, (*enzymic synth*)
Pazur, J.H., *Methods Carbohydr. Chem.*, 1962, **1**, 365, (*enzymic synth*)
Edelman, J. *et al.*, *Biochem. J.*, 1966, **98**, 787
Binkley, W.W. *et al.*, *Carbohydr. Res.*, 1969, **10**, 245; 1971, **17**, 127, (*pmr, ms*)
Jeffrey, G.A. *et al.*, *Acta Cryst. B*, 1972, **28**, 257, (*cryst struct*)
Jarrell, H.C. *et al.*, *Carbohydr. Res.*, 1979, **76**, 45, (*cmr*)
Calub, T.M. *et al.*, *Carbohydr. Res.*, 1990, **199**, 11, (*pmr, cmr*)
Waterhouse, A.L. *et al.*, *Carbohydr. Res.*, 1991, **217**, 29, (*pmr, cmr, conformn*)