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- Trockeneiszuschlag
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- Expressversand

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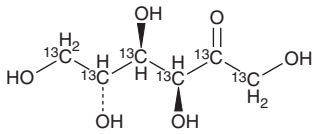
PRODUCT INFORMATION

D-Fructose-$^{13}C_6$

Item No. 30071

CAS Registry No.:	201595-65-5
Formal Name:	D-fructose-1,2,3,4,5,6-$^{13}C_6$
Synonyms:	D-(–)-Fructose-$^{13}C_6$, D-(–)-Levulose-$^{13}C_6$
MF:	$[^{13}C]_6H_{12}O_6$
FW:	186.1
Purity:	≥95%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

D-Fructose-$^{13}C_6$ is supplied as a crystalline solid. A stock solution may be made by dissolving the D-fructose-$^{13}C_6$ in the solvent of choice, which should be purged with an inert gas. D-Fructose-$^{13}C_6$ is soluble in the organic solvent DMSO at a concentration of approximately 1 mg/ml.

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 D-fructose-$^{13}C_6$ can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of D-fructose-$^{13}C_6$ in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

D-Fructose-$^{13}C_6$ is intended for use as an internal standard for the quantification of D-fructose by GC- or LC-MS. D-Fructose is a ubiquitous monosaccharide and is derived, in addition to glucose, from the breakdown of sucrose by sucrase in the intestine.[1] It is a precursor in the biosynthesis of D-fructose-1,6-bisphosphate (Item No. 20516), which is an intermediate in the production of D-glucose *via* gluconeogenesis. Deficiencies in the enzymes that metabolize D-fructose are inborn errors of metabolism that range from benign, for fructokinase deficiency, to severe, for hereditary fructose intolerance, if D-fructose, sucrose, and sorbitol are not eliminated from the diet.[2] Increased consumption of D-fructose is associated with obesity, dyslipidemia, and impaired insulin sensitivity.[3]

References

1. Chen, M. and Whistler, R.L. Metabolism of D-fructose. *Adv. Carbohydr. Chem. Biochem.* **34**, 265-343 (1977).
2. Tran, C. Inborn errors of fructose metabolism. What can we learn from them? *Nutrients* **9(4)**, E356 (2017).
3. Tappy, L. and Lê, K.-A. Metabolic effects of fructose and the worldwide increase in obesity. *Physiol. Rev.* **90(1)**, 23-46 (2010).

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