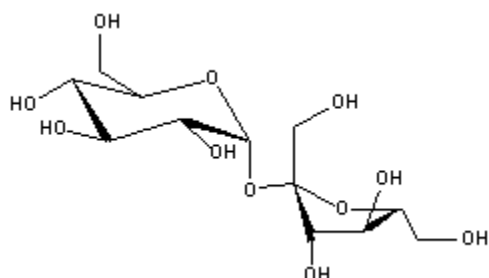


Catalog Number: 152584, 190271, 194018, 194747, 821713, 821721, 902978, 904713

Sucrose

Structure:



Molecular Formula: $C_{12}H_{22}O_{11}$

Molecular Weight: 342.30

CAS # : 57-50-1

Synonyms: Beet sugar; Cane sugar;
 β -D-Fructofuranosyl- α -D-glucopyranoside; D-(+)-Saccharose; Sugar;
 α -D-Glucopyranosyl- β -D-fructofuranoside

Physical Appearance: White crystalline powder

Solubility: Soluble in water (1 g/0.5 ml @ 25° C; 1 g/0.2 ml boiling water), ethanol (1 g/170 ml) or methanol (1 g/100 ml); moderately soluble in glycerol or pyridine.¹

Note:¹ Sucrose is hydrolyzed to glucose and fructose by dilute acids and by invertase, a yeast enzyme. Upon hydrolysis the optical rotation falls and is negative when the hydrolysis is complete. The mixture of glucose and fructose is known as "invert sugar."

Description: A simple carbohydrate. Its use in density gradients has been described.^{4, 8, 15, 17}

Physiological Impact of Dietary Carbohydrate Source: Diets which are high in simple carbohydrates, e.g., sucrose, can cause fatty liver^{2, 18} and Hepatic lipid levels can increase up to 6 fold over normal controls.² Serum triglycerides are also increased. Substitution of corn starch for sucrose

can reverse these effects.¹⁴ Intestinal flora are also affected by the simple vs. complex carbohydrate ratio in the diet.^{5, 19, 20}

The toxicity of some drugs is markedly affected by the simple/complex carbohydrate ratio of the diets used in the study.^{6, 9, 12, 13} Intestinal secretion of lipids and lipoproteins is also effected by the simple/complex ratio of the diet.¹⁶ For these reasons, Bacon, et al.², concludes that "The AIN-76A Diet is not suitable for toxicological studies which depend on normal hepatocellular structure." In a few cases, such as in riboflavin deficient diets, sucrose is preferred over corn starch due to its interactions in the gut to decrease intestinal synthesis of riboflavin, whereas corn starch has the opposite effect.³

Availability:

| Catalog Number | Description | Size |
|------------------|--|---------------------------------|
| 190271 | Sucrose, suitable for most density gradient studies with RNA. Typically forms a clear, colorless solution at a concentration of 5 g per 10 ml water. | 500 g 1 kg 5 kg |
| 194747 | Sucrose, cell culture reagent | 500 g 1 kg 5 kg |
| 902978 | Sucrose, this is a slightly less pure sucrose than 190271. It may not reduce Fehling's solution, and is suitable for most routine applications | 1 lb 5 lb 25 lb 100 lb |
| 152584 | Sucrose, ACS Reagent Grade | 500 g 1 kg |
| 821713 821721 | Sucrose, Ultra Pure, RNase free | 1 kg 5 kg |
| 194018 | Sucrose, molecular biology reagent, purity not less than 99% | 500 g 1 kg 5 kg |
| 804713 | Sucrose, FCC Grade | 5 lb 25 lb 100 lb |

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