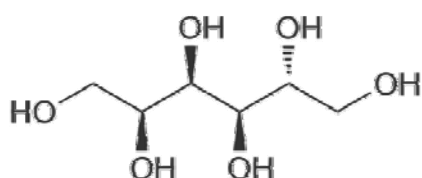
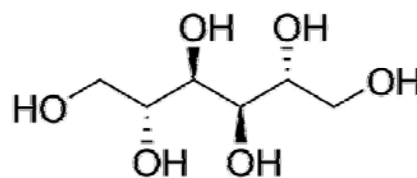


Sorbitol and Mannitol



Sorbitol



Mannitol

Mannitol and sorbitol are mainly used as an excipients in tablet production. Mannitol and sorbitol are sugar alcohols produced by reduction of sugar. Mannitol is used clinically in osmotherapy to reduce acutely raised intracranial pressure after head trauma. It is also used to treat patients with oliguric renal failure. Mannitol increases water and Sodium excretion, thereby decreasing extracellular fluid volume.

Mannitol can also be used as a facilitating agent for the transportation of pharmaceuticals directly into the brain. An intracarotid injection of high molarity mannitol (1.4–1.6M) is capable of opening the blood brain barrier.

The presence of mannitol preserves renal function during the times of low blood flow and pressure, while the patient is on cardiopulmonary bypass in a heart lung machine. It prevents the swelling of endothelial cells in the kidney.

Mannitol is also used to treat cystic fibrosis, it is inhaled as a dry powder and osmotically draws water into the lungs to thin the thick, sticky mucus characteristic of cystic fibrosis. This is intended to make it easier for the sufferer to cough the mucus up during physiotherapy. Sorbitol on the other hand has few clinical applications but can be used as a non-stimulant laxative.

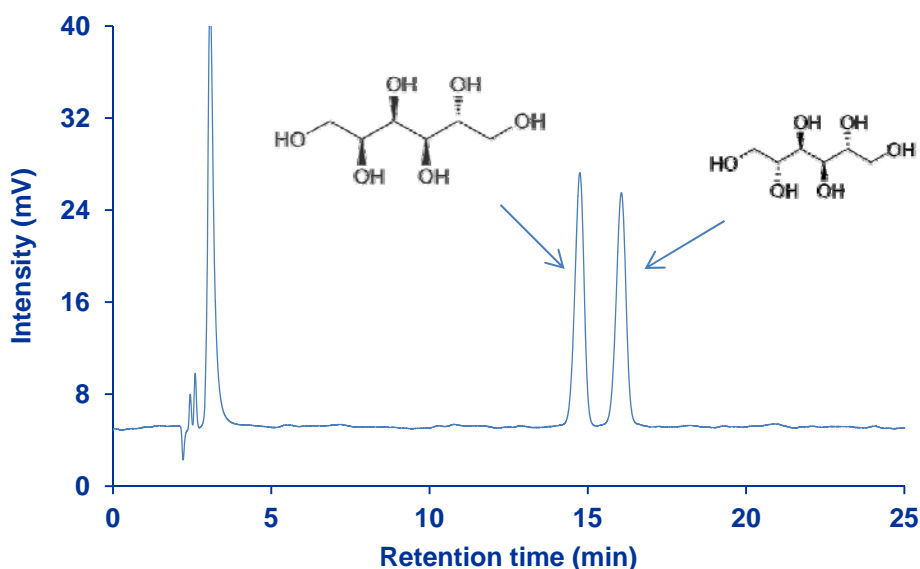
Pharmaceutical Emprove® grade sorbitol and mannitol are marketed under the brand name Pardeck® by Merck Millipore.

Sorbitol and Mannitol

SeQuant® ZIC®-cHILIC

Chromatographic Conditions

Column:	SeQuant® ZIC®-cHILIC (3 µm, 100 Å) PEEK 150 × 4.6 mm	1.50661.0001
Injection:	10 µL	
Detection:	Shimadzu Prominence, R.I.	
Cell:	10 µL	
Flow Rate:	0.8 mL/min	
Mobile Phase:	Dissolve 0.64 g of potassium di-hydrogen phosphate in 1000ml milli-Q water. Adjust pH 3.0 with ortho-phosphoric acid and filter. Mix buffer and acetonitrile 15:85 (v/v)	
Temperature:	40 °C (oven), 40 °C (detector cell)	
Diluent	Mix buffer and acetonitrile 20:80 (v/v)	
Standard:	Dissolve 48 mg each of Sorbitol and Mannitol standard in 10 ml volumetric flask and dilute upto the mark with diluent.	
Sample:	Dissolve 60 mg of sample in 10 ml volumetric flask and dilute upto the mark with diluent	
Pressure Drop:	43 Bar(624 psi)	



Chromatographic Data :

No.	Compound	Retention Time (min)	Theoretical Plate	Resolution
1	Sorbitol	14.7	11818	0
2	Mannitol	16.0	12510	2.3