L-Arabinose

A flexible pentose sugar that plays significant roles in bacteria, plants, and even chemical chemistry.

Naturally occurring pentose sugar, or L-Arabinose, is the second most abundant type of sugar in nature, after xylose. Being a component of several polysaccharides present in plant cell walls, including hemicelluloses, pectin, and arabinogalactan-protein complexes, it is important to plant biology.

Curiously, Mycobacteria also have L-arabinose as a crucial part of their cell walls. Here, L-arabinose is implicated in the creation of compounds that may affect cell wall permeability and possibly even drug resistance, such as arabinogalactan and lipoarabinomannan.

L-arabinose is used in organic chemistry in addition to its biological roles. For the full synthesis of several complicated chemicals, including radicamine B, ambruticin, herbarumin I, and zaragozic acid A, it is a necessary precursor.

Finally, the fact that certain bacteria use L-arabinose makes it noteworthy. An inducible arabinose operon, a group of genes that code for transporters and enzymes specific to L-arabinose, is present in most bacteria. This enables these bacteria to grow exclusively on L-arabinose when it is available.

Cat. Number	ASC-1023
CAS Number	5328-37-0
Additional CAS	87-72-9
Additional CAS	147-81-9 (DL-)
MDL Number	MFCD00135866
PubChem	310266976
Molecular Weight	150.13 g/mol
Molecular Formula	$C_5H_{10}O_5$
Storage Temperature	+20°C
Form and Color	White to off-white, Crystalline powder
Solubility (10% in water)	Clear, Colorless solution

Specific Optical Rotation ([α]20/D)	+101.0 - +105.0 ° (c=2, water, 24h)
Melting Point	152.0 - 160.0 °C
Loss on Drying	≤ 1.0% (105°C)
Assay (GC)	≥ 98.5%