Thiamine hydrochloride
(Vitamin B1 hydrochloride)
Cell Culture Tested

Product Code: TC173

Product Description:
Molecular Weight: 337.27
Molecular Formula: C₁₂H₁₇ClN₄OS.HCl
CAS NO.: 67-03-8
Synonym: Vitamin B1 hydrochloride

Thiamine is extensively used in cell culture and is an important component of the basal media formulations and serum. Thiamine is regulated by calmodulin and is a required by cells via a carrier-mediated system. The active form of this vitamin is synthesized from ATP and thiamine by thiamine diphosphokinase. TPP (an enzyme cofactor) contains enzymes that are involved in energy metabolism and amino acid synthesis. If thiamine is not provided to the cells in vitro, pyruvate cannot be metabolized effectively. The metabolism of pyruvate to acetyl-CoA undergoes a critical reaction in the cells that is mediated by the pyruvate dehydrogenase complex. TPP is also a cofactor of two enzymes that are involved in the citric acid cycle. These enzymes bind and decarboxylate the alpha-keto acids and facilitate the transfer of the aldehydes to enzyme CoA. For the synthesis of the three amino acids, such as valine, isoleucine and leucine, TPP containing enzymes are required. All three of these amino acids are synthesized from pyruvate, which requires thiamine for its metabolism.

Quality Control:
Appearance
White to off-white crystals or powder.
Solubility
Clear colorless solution at 5gm in 100ml of water.
Water (KF)
NMT 5%
Assay
NLT 98%
Cell Culture Test
Passes

Storage and Shelf Life:
Store at 2-8°C away from bright light.
Shelf life is 36 months.
Use before expiry date given on the product label.

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