2-Acetyl-4-(1R,2S,3R,4-tetrahydroxybutyl)-imidazole

Catalog No: 1858
Common Name: THI
Source: synthetic
Solubility: DI water
CAS No: 94944-70-4
Molecular Formula: C₉H₁₄N₂O₅
Molecular Weight: 230
Storage: -20°C
Purity: HPLC, MS, NMR >99%
Appearance: solid

Application Notes:
2-Acetyl-4-(1R,2S,3R,4-tetrahydroxybutyl)-imidazole (THI) is an inhibitor of sphingosine-1-phosphate lyase (S1P lyase). In high doses it leads to the inhibition of S1P lyase, causing an accumulation of sphingosine-1-phosphate and a decrease in the activity of sphingosine-1-phosphate receptor-1. This results in lymphopenia (depression of blood lymphocyte counts) as well as an immune deficiency.¹ THI does not appear to have any toxic effects and may therefore be valuable as an immunosuppressive drug. Diabetes can occur spontaneously due to autoimmune insulitis and THI has been proposed as a possible treatment for the prevention of this disease.² It is thought that THI and Pyridoxine (vitamin B₆) may compete for the same binding site as an additional diet of pyridoxine can prevent the decrease of blood lymphocyte counts caused by THI. THI has a structural similarity to histamine and urocanic acid, both known to have immunosuppressive properties.³ THI is a minor component of the food additive caramel color III.

Selected References:

This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives. Matreya assumes no liability for any use of this product by the end user. We believe the information, offered in good faith, is accurate.

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DS1858 Rev. #6
March 15, 2022