Creative Enzymes®

# Tetrahydrobiopterin (THB) dihydrochloride

*Cat. No. COEC-024*

*Lot. No.* (See product label)

## Introduction

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| ***Description*** | Tetrahydrobiopterin (THB) dihydrochloride is an activating Nitric Oxide Synthase (NOS)cofactor used in a variety of applications. The compound is also a known cofactor for the monooxygenases that hydroxylates phenylalanine, tyrosine, and tryptophan. Synthesis of THB has been documented to be the rate limiting step in the metabolism of phenylalanine and the biosynthesis of neurotransmiter amines. In mice, Quinolinic acid (sc-203226) induced convulsions were potentiated with Tetrahydrobiopterin dihydrochloride demonstrating that endogenous NO may be involved in stimulating the NMDA receptors. When hypertensive mice were fed THB, but were not introduced to hydralazine or tetrahydroneopterin, they displayed improved cardiac THB stores, phosphorylated phospholamban levels, and diastolic dysfunction. The compound has also been observed as an essential cofactor in the hydroxylation process in mammalian brains. |
| ***Applications*** | An activating NOS cofactor |
| ***Synonyms*** | (6R)-5,6,7,8-Tetrahydro-L-biopterin dihydrochloride |

## Product Information

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| ***Appearance*** | Powder |
| ***Form*** | Solid |
| ***CAS No.*** | 69056-38-8 |
| ***Molecular Formula*** | C9H15N5O3•2HCl |
| ***Molecular Weight*** | 314.17 |
| ***Purity*** | ≥98% |
| ***Melting Point*** | 233.81° C (Predicted) |
| ***Boiling Point*** | 545.42° C (Predicted) |
| ***Solubility*** | Soluble in DMSO, ethanol, and water (23 mg/ml). |