

## Tetrahydrobiopterin (THB) dihydrochloride

Cat. No. COEC-024

Lot. No. (See product label)

### Introduction

#### 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 neurotransmitter 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

#### Appearance

Powder

#### Form

Solid

#### CAS No.

69056-38-8

#### Molecular Formula

C<sub>9</sub>H<sub>15</sub>N<sub>5</sub>O<sub>3</sub>•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).