

## UDP-N-acetylglucosamine 4,6-dehydratase (configuration-inverting)

Cat. No. EXWM-4955

Lot. No. (See product label)

### Introduction

**Description** Contains NADP<sup>+</sup> as a cofactor. This is the first enzyme in the biosynthetic pathway of pseudaminic acid, a sialic-acid-like sugar that is unique to bacteria and is used by *Helicobacter pylori* to modify its flagellin. This enzyme plays a critical role in *H. pylori*'s pathogenesis, being involved in the synthesis of both functional flagella and lipopolysaccharides. It is completely inhibited by UDP- $\alpha$ -D-galactose. The reaction results in the chirality of the C-5 atom being inverted. It is thought that Lys-133 acts sequentially as a catalytic acid, protonating the C-6 hydroxy group and as a catalytic base, abstracting the C-5 proton, resulting in the elimination of water. This enzyme belongs to the short-chain dehydrogenase/reductase family of enzymes.

**Synonyms** FlaA1; UDP-N-acetylglucosamine 5-inverting 4,6-dehydratase; PseB; UDP-N-acetylglucosamine hydro-lyase (inverting; UDP-2-acetamido-2,6-dideoxy- $\beta$ -L-arabino-hex-4-ulose-forming)

### Product Information

**Form** Liquid or lyophilized powder

**EC Number** EC 4.2.1.115

**Reaction** UDP-N-acetyl- $\alpha$ -D-glucosamine = UDP-2-acetamido-2,6-dideoxy- $\beta$ -L-arabino-hex-4-ulose + H<sub>2</sub>O

**Notes** This item requires custom production and lead time is between 5-9 weeks. We can custom produce according to your specifications.

### Storage and Shipping Information

**Storage** Store it at +4 °C for short term. For long term storage, store it at -20 °C~-80 °C.