

## ketosteroid monooxygenase

Cat. No. EXWM-0861

Lot. No. (See product label)

### Introduction

#### Description

A single FAD-containing enzyme catalyses three types of monooxygenase (Baeyer-Villiger oxidation) reaction. The oxidative esterification of a number of derivatives of progesterone to produce the corresponding 17 $\alpha$ -hydroxysteroid 17-acetate ester, such as testosterone acetate, is shown in Reaction (1). The oxidative lactonization of a number of derivatives of androstenedione to produce the 13,17-secoandrosteno-17,13 $\alpha$ -lactone, such as testololactone, is shown in Reaction (2). The oxidative cleavage of the 17 $\beta$ -side-chain of 17 $\alpha$ -hydroxyprogesterone to produce androstenedione and acetate is shown in Reaction (3). Reaction (1) is also catalysed by EC 1.14.99.4 (progesterone monooxygenase), and Reactions (2) and (3) correspond to that catalysed by EC 1.14.99.12 (androst-4-ene-3,17-dione monooxygenase). The possibility that a single enzyme is responsible for the reactions ascribed to EC 1.14.99.4 and EC 1.14.99.12 in other tissues cannot be excluded.

#### Synonyms

steroid-ketone monooxygenase; progesterone, NADPH2:oxygen oxidoreductase (20-hydroxylating, ester-producing); 17 $\alpha$ -hydroxyprogesterone, NADPH2:oxygen oxidoreductase (20-hydroxylating, side-chain cleaving); androstenedione, NADPH2:oxygen oxidoreductase (17-hydroxylating, lactonizing)

### Product Information

#### Form

Liquid or lyophilized powder

#### EC Number

EC 1.14.13.54

#### CAS No.

9044-53-5

#### Reaction

a ketosteroid + NADPH + H<sup>+</sup> + O<sub>2</sub> = a steroid ester/lactone + NADP<sup>+</sup> + H<sub>2</sub>O (general reaction); (1) progesterone + NADPH + H<sup>+</sup> + O<sub>2</sub> = testosterone acetate + NADP<sup>+</sup> + H<sub>2</sub>O; (2) androstenedione + NADPH + H<sup>+</sup> + O<sub>2</sub> = testololactone + NADP<sup>+</sup> + H<sub>2</sub>O; (3) 17 $\alpha$ -hydroxyprogesterone + NADPH + H<sup>+</sup> + O<sub>2</sub> = androstenedione + acetate + NADP<sup>+</sup> + 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.