

# PRODUCT INFORMATION



## Estradiol 17-( $\beta$ -D-Glucuronide) (sodium salt hydrate)

Item No. 16156

**Formal Name:** (17 $\beta$ )-3-hydroxyestra-1,3,5(10)-trien-17-yl  $\beta$ -D-glucopyranosiduronic acid, monosodium salt, hydrate

**Synonyms:** E217G,  $\beta$ -Estradiol 17-( $\beta$ -D-Glucuronide), 17 $\beta$ -Estradiol 17-( $\beta$ -D-Glucuronide), 17 $\beta$ -Oestradiol 17-( $\beta$ -D-Glucuronide)

**MF:** C<sub>24</sub>H<sub>31</sub>O<sub>8</sub> • Na [XH<sub>2</sub>O]

**FW:** 470.5

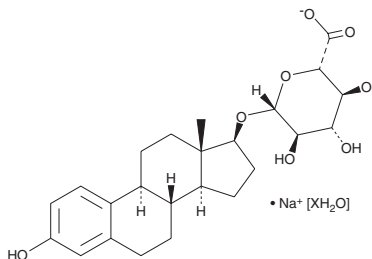
**Purity:**  $\geq$ 95%

**UV/Vis.:**  $\lambda_{\text{max}}$ : 282 nm

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:**  $\geq$ 2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

E<sub>2</sub>17G (sodium salt hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the E<sub>2</sub>17G (sodium salt hydrate) in the solvent of choice. E<sub>2</sub>17G (sodium salt hydrate) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of E<sub>2</sub>17G (sodium salt hydrate) in these solvents is approximately 20 and 10 mg/ml, respectively.

E<sub>2</sub>17G (sodium salt hydrate) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, E<sub>2</sub>17G (sodium salt hydrate) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. E<sub>2</sub>17G (sodium salt hydrate) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Estradiol 17-( $\beta$ -D-glucuronide) (E<sub>2</sub>17G) is an estrogen metabolite formed in the liver and subsequently excreted in bile.<sup>1</sup> It acts as a substrate of the multidrug resistance protein 2 (MRP2; K<sub>m</sub> = 75  $\mu$ M), and through MRP2-mediated transport, functions as a cholestatic agent, decreasing bile flow.<sup>1,2</sup> In addition to binding to the MRP2 transport site, E<sub>2</sub>17G has been shown to bind to an allosteric site that through positive cooperativity activates its own transport *via* MRP2 and the transport of other MRP2 substrates, including the non-cholestatic estrogen metabolite, estradiol 3-( $\beta$ -D-glucuronide) (E<sub>2</sub>3G; Item No. 16155).<sup>2,3</sup> E<sub>2</sub>17G has also been reported to be transported by MDR1, MRP1, MRP3, MRP4, MRP7, ABCG2 (a breast cancer resistance protein transporter), and the rat organic anion-transporting polypeptides 1-4.<sup>2</sup>

### References

1. Loe, D.W., Almquist, K.C., Cole, S.P., *et al.* ATP-dependent 17 $\beta$ -estradiol 17-( $\beta$ -D-glucuronide) transport by multidrug resistance protein (MRP). Inhibition by cholestatic steroids. *J. Biol. Chem.* **271**(16), 9683-9689 (1996).
2. Gerk, P.M., Li, W., and Vore, M. Estradiol 3-glucuronide is transported by the multidrug resistance-associated protein 2 but does not activate the allosteric site bound by estradiol 17-glucuronide. *Drug Metab. Dispos.* **32**(10), 1139-1145 (2004).
3. Gerk, P.M., Li, W., Megaraj, W., *et al.* Human multidrug resistance protein 2 transports the therapeutic bile salt tauroursodeoxycholate. *J. Pharmacol. Exp. Ther.* **320**(2), 893-899 (2007).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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