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Protocol for Emulate Organ-Chips:
Glutathione S-Transferase (α GST) Assay

May 10, 2019

EP148 v1.0

TITLE Glutathione S-Transferase (α GST) Assay	DOCUMENT EP148	VERSION 1.0
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Goals:	Key Steps:	Other Required Materials:
Quantify alpha glutathione S-transferase (α GST) levels from Organ-Chip effluent samples	<ul style="list-style-type: none"> • Prepare all reagents, samples, and standards • Run the assay • Read plate 	<ul style="list-style-type: none"> • TECO[®] Alpha GST EIA (DiaPharma Cat No. TE1056) • Plate reader • Vortex mixer

Introduction

TECO[®] α GST is an ELISA for the quantitative determination of alpha Glutathione S-Transferase (α GST). GSTs are enzymes that catalyze the conjugation of glutathione to electrophilic centers on a wide variety of substrates in order to make the compounds more water-soluble. The role of GSTs is to detoxify endogenous compounds such as those that enable the breakdown of xenobiotics. High intracellular concentrations of GSTs coupled and released into serum are indicators of hepatocyte injury and toxicity and can be used as biomarkers. They are also used as indicators of renal injury and nephrotoxicity.

Method

Sample type	Organ-Chip effluent See Emulate Protocol EP124 Effluent Sampling Protocol.
Recommended assay flow rate (Liver-Chip)	30 μ L / h
Recommended effluent dilution (Liver-Chip)	No dilution: Samples are loaded neat. Note: Sample dilution may need to be adjusted further to accommodate for any experimental modifications by the end-user.
Run assay as described on supplier site	https://diapharma.com/product/apoptosis/toxicology/teco-alpha-gst/ Note: Store kit at 2–8 °C immediately upon receipt. Do not freeze.
Expected sample concentration range (Liver-Chip)	1–40 ng / mL

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