



QuantiChrom™ Sulfate Assay Kit

INORGANIC SULFATE is one of the most abundant anions in mammalian plasma¹. Sulfate plays important physiological roles in activating and detoxifying xenobiotics, steroids, neurotransmitters, and bile acids. Sulfate is needed for the biosynthesis of glycosaminoglycans, cerebroside sulfate, and heparin sulfate. Undersulfation of cartilage proteoglycans has been associated with human inherited osteochondrodysplasia disorders. In mammals, sulfate homeostasis is regulated by the kidney. The majority of filtered sulfate is absorbed in the proximal tubules, and only 5–20% of the filtered load is excreted into the urine².

Simple, direct and automation-ready procedures for quantitative determination of inorganic sulfate find wide applications in research and drug discovery. BioAssay Systems' sulfate assay kit is designed to measure sulfate concentration in biological fluids such as serum and urine. The improved method utilizes the quantitative formation of insoluble barium sulfate in polyethylene glycol³. The turbidity which is measured as optical density between 540 and 610nm (recommended 600nm), is an accurate measure of the sulfate level in the sample.

APPLICATIONS:

Direct Assays: inorganic sulfate in serum and urine.

Pharmacology: effects of drugs on sulfate metabolism.

Ester sulfate can be determined using the same method following a digestion step³. This will allow quantification of total sulfate (inorganic and ester sulfate) in biological samples.

KEY FEATURES:

Sensitive and accurate. Detection range 0.01 mM (0.096 mg/dL) to 1.2 mM (11.5 mg/dL) sulfate in 96-well plate assay.

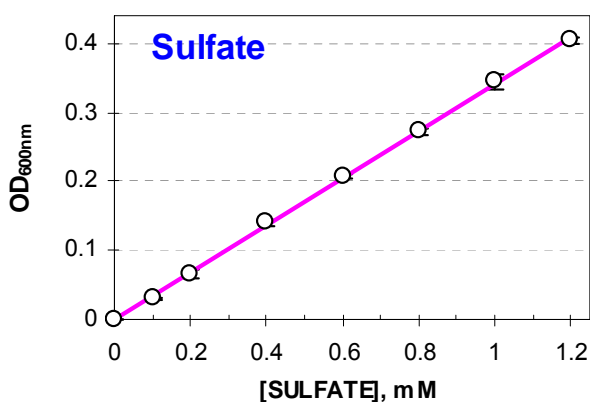
Simple and high-throughput. The procedure involves addition of a single working reagent and incubation for 5 min. Can be readily automated as a high-throughput assay in 96-well plates for thousands of samples per day.

PRODUCT INFORMATION:

QuantiChrom™ Sulfate Assay Kit DSFT-200

Each kit is sufficient for 200 assays in 96-well plate. Kit includes:

- 1 x 25 mL Reagent A
- 1 x 25 mL Reagent B
- 1 x 2 mL Sulfate Standard



Standard Curve in 96-well plate assay

REFERENCES:

- [1]. Bolt, M.J.G. et al. (2004). Critical role of vitamin D in sulfate homeostasis: regulation of the sodium-sulfate cotransporter by 1,25-dihydroxyvitamin D₃. *Am J Physiol Endocrinol Metab* 287: E744–E749.
- [2]. Becker, E.L. et al. (1960) Renal mechanisms for the excretion of inorganic sulfate in man. *J Clin Invest* 39: 1909–1913.
- [3]. Lundquis, P. et al. (1980). Turbidimetry of inorganic Sulfate, Ester Sulfate, and Total Sulfur in Urine. *CLIN. CHEM.* 26/8, 1178-1181.