

General Heme Assay Kit | Heme assay kit

Heme assay Kit

CATALOG #
AAA250296

REACTIVITY
General

PRODUCT SYNONYMS

Heme; Heme assay Kit; Heme assay kit

PRODUCT SPECIFICATIONS

Reactivity	General
Samples	Serum, plasma (e.g. jaundice or hemolysis blood test) and RBC lysate
Detection Range	15.6-1000pmol/ml
Sensitivity	5pmol/ml
Intra-assay Precision	CV<8%
Inter-assay Precision	CV<10%
Preparation and Storage	Store at 2-8 degree C for 6 months

ADDITIONAL INFORMATION

Related Product Information for Heme assay kit

Background: Heme (Molecular Formula: $C_{34}H_{33}N_4O_4FeOH$) is a non-protein iron porphyrin component of hemoglobin, and also found in other respiratory pigments, animal/plant cells. The dark red heme is soluble in water. As the ferrous derivative of protoporphyrin, heme is a kind of coordination chelate linked by 4 pyrrole rings and iron atom. Differences between hemin (Fe^{3+}) and heme (Fe^{2+}) are the valency of chelated iron. Heme is the prosthetic group of hemoglobin and some oxidoreductases, involved in the oxygen transfer and oxido-reduction in the organism. Damaged senescent cells release hemoglobin. Decomposed by the mononuclear phagocyte in the bone marrow, spleen and liver, hemoglobin acts as the liposoluble unconjugated bilirubin which enters the blood and is transferred to the liver by adhering to albumin. Processed by a series of enzymes in the hepatocyte, liposoluble unconjugated bilirubin is converted into water-soluble conjugated bilirubin(direct bilirubin). Unconjugated bilirubin is indirect bilirubin. The direct bilirubin can be filtrated by glomerulus but indirect bilirubin fails. Conjugated bilirubin is excreted into biliary tract and duodenum respectively through bile capillary as well as hepatic duct and common bile duct. Conjugated bilirubin in the colon is reduced to urobilinogen and urobilin by bacteria. Most of urobilinogen is excreted in the feces. The rest is resorbed in the colon and reconverted into bilirubin by the translocation of the portal vein to the liver. A tiny of resorbed urobilinogen enters systemic circulation and is excreted by the kidney. Due to damaged red blood cells, increased liver load, disorders of hepatocyte transport, binding and excretion, or extrahepatic biliary obstruction, the increased bilirubin concentration in the blood can result in the jaundice.

Principle of the Assay: This kit is based on enzyme assay method. Activated heme can oxidize TMB to blue solution(max absorption peak: 630nm). The kit offers heme standard and activation diluent buffer. The activated standard and diluted sample were added to the wells subsequently. TMB substrates were added into each well to visualize the enzyme-substrate reaction(blue), which is stopped by adding sulfuric acid solution later. Read the O.D. absorbance at 450nm by spectrophotometry. Compare the OD450 value with standard curve using the curve fitting software, and then the concentration of heme in the sample can be calculated.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.