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Hycult biotechnology

HUMAN Calprotectin/S100A8/A9 ELISA Kit

Catalog No. HK325

Quantity : 2 x 96 determinations

Description Calprotectin, also known as MRP-8/MRP-14 or S100A8/A9 heterocomplex, is formed out of the calcium-binding, migration inhibitory factor-related proteins, MRP-8 (S100A8) and MRP-14 (S100A9). The expression of these proteins is largely confined to the cytosol of neutrophils and monocytes. The complex formation of these proteins is calcium-dependent. Calprotectin comprises 60% of the cytoplasmic protein fraction of circulating polymorphonuclear granulocytes and is also found in monocytes, macrophages and ileal tissue eosinophils. Peripheral blood monocytes carry the antigen extra- and intracellularly, neutrophils only intracellularly. Calprotectin has antibacterial, antifungal, immunomodulating and antiproliferative effects. Furthermore, it is a potent chemotactic factor for neutrophils. Plasma concentrations are elevated in diseases associated with increased neutrophil activity. During intestinal wall inflammation, granulocytes transmigrate through the intestinal wall. Therefore calprotectin is also detectable in faeces. Several investigations report that faecal calprotectin is significantly increased in intestinal diseases such as inflammatory bowel disease (IBD), Crohn´s disease, ulcerative colitis and colon cancer.
Normal human plasma contains a calprotectin concentration ranging from 500 to 3000 ng/ml.

Aliases MRP-8/MRP-14, S100A8/S100A9

Application The human calprotectin ELISA has been developed for the quantitative measurement of natural calprotectin heterodimer in plasma, cell culture medium, urine and faeces. In plasma samples calprotectin can be measured accurately if samples are diluted at least 60 times. Most reliable results are obtained if EDTA plasma is used.
Urine samples have to be diluted at least 10x. For urine calprotectin detection, the standard curve could be adapted to 0.6-40 ng/ml to increase sensitivity. For detection of calprotectin in faeces, we recommend to test both 800x and 1200x diluted supernatant. Subsequently, determine the calprotectin-ratio by division of both calculated calprotectin-concentrations. When this ratio is > 1.2, the sample contains certain factors that interfere with reliable calprotectin-concentration determination.

Features

- Minimum concentration which can be measured is 1.6 ng/ml human calprotectin.
- Measurable concentration range of 1.6-100 ng/ml.
- Working volume of 100 µl/well.

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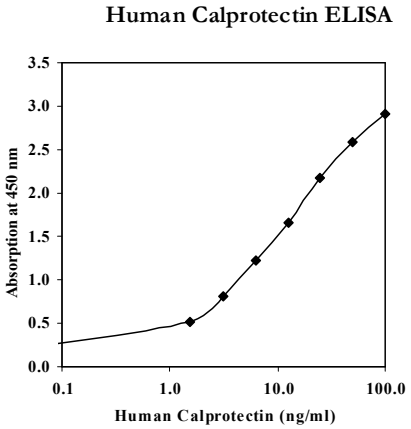
Typical standard curve



Principle

- The human calprotectin ELISA is a ready-to-use solid-phase enzyme-linked immunosorbent assay based on the sandwich principle with a working time of 3½ hours.
- The efficient format of 2 plates with twelve disposable 8-well strips allows free choice of batch size for the assay.
- Samples and standards are captured by a solid bound specific antibody.
- Biotinylated tracer antibody will bind to captured calprotectin.
- Streptavidin-peroxidase conjugate will bind to the biotinylated tracer antibody.
- Streptavidin-peroxidase conjugate will react with the substrate, tetramethylbenzidine (TMB).
- The enzyme reaction is stopped by the addition of citric acid.
- The absorbance at 450 nm is measured with a spectrophotometer. A standard curve is obtained by plotting the absorbance (linear) versus the corresponding concentrations of the calprotectin standards (log).
- The human calprotectin concentration of samples, which are run concurrently with the standards, can be determined from the standard curve.

Storage and stability

Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least six months. After reconstitution the reagents are stable for 1 month if stored at 2-8°C, except for the standard. After reconstitution, the standard must be used within 15 minutes. For longer stability, we recommend to store aliquots at ï 20°C.

Precautions

For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and Federal rules in the use of this product. Hbt is not responsible for any patent infringements that might result with the use of or derivation of this product.

Also available

HK314	Human BPI ELISA kit, 2 x 96 determinations
HK317	Human Alpha-Defensins 1-3 (HNP 1-3) ELISA kit, 2 x 96 determinations
HK319	Human Elastase ELISA kit, 2 x 96 determinations
HK324	Human MPO ELISA kit, 2 x 96 determinations
HK329	Human Lactoferrin ELISA kit, 2 x 96 determinations

NOT FOR HUMAN USE. FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.

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