DATASHEET

S100A12
Heterodimer (human)

ELISA KIT A05084

- Broad range of quantification
- QC included
- Sandwich format

S100A12 belongs to the S100 family, called **calgranulin**. Calgranulins are endogenous molecules released in response to environmental triggers and cellular damage. Also known as **Damage-Associated Molecular Pattern Molecules** (DAMPs), these proteins play an important role in a diverse range of physiological and pathological processes, such as host defense, wound healing, autoimmunity, oncogenesis, and inflammation, among others.

S100A12 is a calcium-, zinc- and copper-binding protein involved in processes that contribute to nutritional immunity against invading microbial pathogens. In humans, S100A12 (also named Calgranulin C or EN-RAGE) is mainly expressed and secreted by neutrophil granulocytes and has been implicated **in immune regulation**. S100A12 is a ligand for the receptor for advanced glycation end products (RAGE), toll-like receptor 4 (TLR4), and CD36, which promote cellular and immunological pathways to alter inflammation.

S100A12 is co-expressed with two other S100 proteins, S100A8 (MRP8) and S100A9 (MRP14), the two subunits of the calprotectin heterodimer, within granulocytes. S100A12 and S100A8/A9 proteins are encoded on the same chromosome, appear to be coregulated, and have functional and structural similarities. Given that S100A12 is intensely upregulated during **trauma, infection, heat, stress**, and many other **inflammatory processes**, it is a valuable candidate as both a diagnostic biomarker and a therapeutic target for inflammation-associated diseases. Plasma levels of S100A8/S100A9 and S100A12 were found to be higher in septic shock patients than in healthy volunteers. Furthermore, the high level of plasma calgranulins at admission in septic shock was higher in non-survivors compared to survivors (Dubois et al 2019).

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S100A12

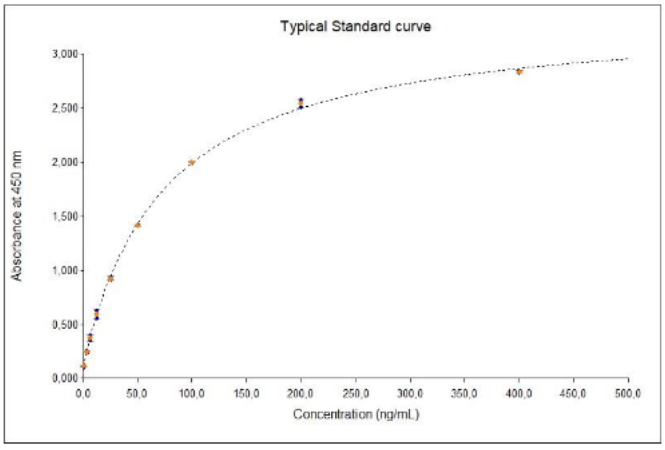
FOCUS ON THE KIT

This ELISA kit is based on a sandwich technique. The wells of the plate are coated with a **monoclonal** antibody specific to the S100A12 homodimer (human) that will bind to the S100A12 homodimer (human) introduced into the wells (standard or sample). Then the homodimer is detected by a second **monoclonal** antibody tagged with biotin also specific to S100A8/S100A9 heterodimer (human).

The two antibodies then form a sandwich by binding on different parts of the S100A12 homodimer (human). The tracer (streptavidin labeled with HRP) will then bind to the biotin. The concentration of S100A12 homodimer (human) is determined by measuring the enzymatic activity of the immobilized tracer using TMB as substrate.

TECHNICAL FEATURES

- Validated with human serum samples
- Standard range: 3.1 - 400.0 ng/mL
- Inter-assay variation:
  - 7.4% (34.4 ng/mL)
  - 8.8% (84.3 ng/mL)
  - 22.6 % (276.3 ng/mL)
- Tracer label: HRP
- Storage: +4°C
- Sample preparation: dilution of at least at 1:5 in 1x Biotin-free ELISA Buffer
- Limit of detection (LOD): ≤2 ng/mL
- Intra-assay variation:
  - 4.9% (35.0 ng/mL)
  - 6.3% (83.3 ng/mL)
  - 10.0 % (251.7 ng/mL)
- Alias: Calgranulin C, EN-RAGE, MRP6
- Size: 96 wells



Typical S100A12 heterodimer (human) standard curve

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