



# Human Chitinase-3-like Protein 1(YKL-40/CHI3L1)ELISA Kit

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <b>Product Code</b>                 | CSB-E13608h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Abbreviation</b>                 | CHI3L1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Protein Biological Process 1</b> | others                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Target Name</b>                  | chitinase 3-like 1 (cartilage glycoprotein-39)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Uniprot No.</b>                  | P36222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Alias</b>                        | ASRT7, DKFZp686N19119, FLJ38139, GP39, HC-gp39, HCGP-3P, YKL40, YYL-40, chitinase 3-like 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Product Type</b>                 | ELISA Kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Immunogen Species</b>            | Homo sapiens (Human)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Sample Types</b>                 | serum, plasma, tissue homogenates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Detection Range</b>              | 46.875 pg/mL-3000 pg/mL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Sensitivity</b>                  | 78.065 pg/mL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Assay Time</b>                   | 1-5h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Sample Volume</b>                | 50-100ul                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Detection Wavelength</b>         | 450 nm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Lead Time</b>                    | 3-5 working days after you place the order, and it takes another 3-5 days for delivery via DHL or FedEx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Research Area</b>                | Signal Transduction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Quality Control</b>              | <p>A microplate reader capable of measuring absorbance at 450 nm, with the correction wavelength set at 540 nm or 570 nm.</p> <p>An incubator can provide stable incubation conditions up to 37°C±5°C.</p> <p>Centrifuge</p> <p>Vortex</p> <p>Squirt bottle, manifold dispenser, or automated microplate washer</p> <p>Absorbent paper for blotting the microtiter plate</p> <p>50-300ul multi-channel micropipette</p> <p>Pipette tips</p> <p>Single-channel micropipette with different ranges</p> <p>100ml and 500ml graduated cylinders</p> <p>Deionized or distilled water</p> <p>Timer</p> <p>Test tubes for dilution</p> |
| <b>Gene Names</b>                   | CHI3L1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Tag Info</b>                     | quantitative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



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| <b>Protein Description</b> | Sandwich                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Component</b>           | <p>A micro ELISA plate --- The 96-well plate has been pre-coated with an anti-human CHI3L1 antibody. This dismountable microplate can be divided into 12 x 8 strip plates.</p> <p>Two vials lyophilized standard ---Dilute a bottle of the standard at dilution series, read the OD values, and then draw a standard curve.</p> <p>One vial Biotin-labeled CHI3L1 antibody (100 x concentrate) (120 µl/bottle) --- Act as the detection antibody.</p> <p>One vial HRP-avidin (100 x concentrate) (120 µl/bottle) ---Bind to the detection antibody and react with the TMB substrate to make the solution chromogenic.</p> <p>One vial Biotin-antibody Diluent (15 ml/bottle) ---Dilute the Biotin-antibody.</p> <p>One vial HRP-avidin Diluent (15 ml/bottle) ---Dilute the HRP-avidin solution.</p> <p>One vial Sample Diluent (50 ml/bottle)---Dilute the sample to an appropriate concentration.</p> <p>One vial Wash Buffer (25 x concentrate) (20 ml/bottle) ---Wash away unbound or free substances.</p> <p>One vial TMB Substrate (10 ml/bottle) ---Act as the chromogenic agent. TMB interacts with HRP, eliciting the solution turns blue.</p> <p>One vial Stop Solution (10 ml/bottle) ---Stop the color reaction. The solution color immediately turns from blue to yellow.</p> <p>Four Adhesive Strips (For 96 wells) --- Cover the microplate when incubation.</p> <p>An instruction manual</p>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Description</b>         | <p>CUSABIO's Human YKL-40/CHI3L1 ELISA Kit is an in vitro enzyme-linked immunosorbent assay for the quantitative measurement of human CHI3L1 in serum, plasma, and tissue homogenates. This assay employs the quantitative sandwich enzyme immunoassay technique, in which CHI3L1 in the samples or standards are sandwiched between pre-coated CHI3L1 antibody and HRP-conjugated antibody specific for CHI3L1. Following a wash to remove any unbound reagent, the TMB substrate solution is added to the wells and color develops in proportion to the amount of CHI3L1 bound in the initial step. The color development is stopped and the intensity of the color is measured at 450 nm via a microplate reader. This kit displays many advantages, including sensitivity, specificity, precision, linearity, and recovery. The product instructions are access to more information.</p> <p>CHI3L1 is a secreted glycoprotein and prototypic mammalian chitinase-like protein belonging to the glycoside hydrolase family 18. It is synthesized and secreted by numerous cells such as macrophages, neutrophils, and fibroblast-like cells. It is mainly involved in tissue damage, tissue repair, inflammation, and remodeling responses. CHI3L1 has been closely related to diseases including asthma, arthritis, sepsis, diabetes, liver fibrosis, and coronary artery disease. Several solid tumors including breast, colon, kidney, ovarian, prostate, and glioblastoma, have detected the presence of CHI3L1. CHI3L1 signaling plays a critical role in cancer cell growth, proliferation, invasion, metastasis, angiogenesis, activation of tumor-associated macrophages, and Th2 polarization of CD4+ T cells. Elevated CHI3L1 levels are correlated with poor prognosis and decreased survival rates of cancer patients.</p> |



## Target Details

Chitinases catalyze the hydrolysis of chitin, which is an abundant glycopolymer found in insect exoskeletons and fungal cell walls. The glycoside hydrolase 18 family of chitinases includes eight human family members. This gene encodes a glycoprotein member of the glycosyl hydrolase 18 family. The protein lacks chitinase activity and is secreted by activated macrophages, chondrocytes, neutrophils and synovial cells. The protein is thought to play a role in the process of inflammation and tissue remodeling.

## Product Precision

**Intra-assay Precision (Precision within an assay): CV%<8%**

Three samples of known concentration were tested twenty times on one plate to assess.

**Inter-assay Precision (Precision between assays): CV%<10%**

Three samples of known concentration were tested in twenty assays to assess.

|             | Intra-Assay Precision |         |         | Inter-Assay Precision |         |         |
|-------------|-----------------------|---------|---------|-----------------------|---------|---------|
| Sample      | 1                     | 2       | 3       | 1                     | 2       | 3       |
| n           | 20                    | 20      | 20      | 20                    | 20      | 20      |
| Mean(pg/ml) | 364.776               | 362.643 | 362.649 | 359.789               | 363.383 | 365.150 |
| SD          | 0.035                 | 0.038   | 0.033   | 0.029                 | 0.051   | 0.028   |
| CV(%)       | 6.017                 | 6.574   | 5.792   | 5.060                 | 8.805   | 4.808   |

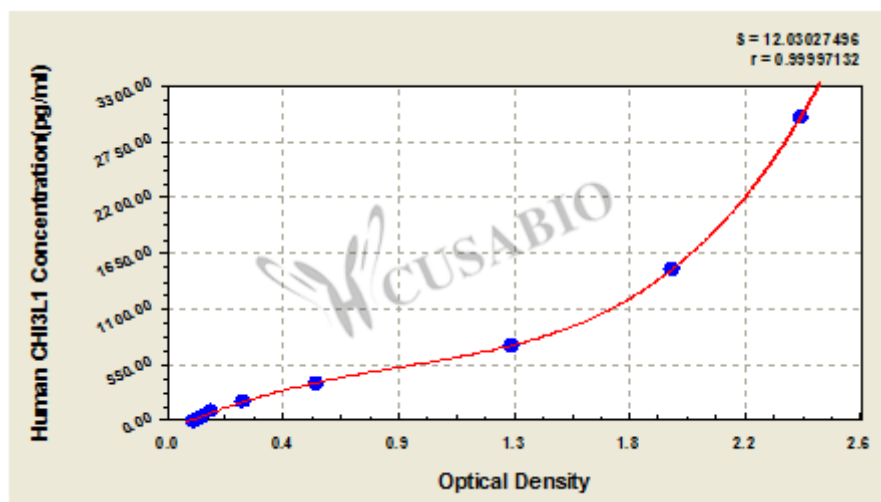
## Linearity

To assess the linearity of the assay, samples were spiked with high concentrations of human Chitinase-3-like Protein 1 in various matrices and diluted with the Sample Diluent to produce samples with values within the dynamic range of the assay.

|      | Sample    | Serum(n=4) |
|------|-----------|------------|
| 1:4  | Average % | 91         |
|      | Range %   | 80-101     |
| 1:8  | Average % | 86         |
|      | Range %   | 82-104     |
| 1:16 | Average % | 97         |
|      | Range %   | 89-117     |
| 1:32 | Average % | 94         |
|      | Range %   | 88-102     |

## Typical

These standard curves are provided for demonstration only. A standard curve should be generated for each set of samples assayed.



| pg/ml↕  | OD1↕   | OD2↕   | Average↕ | corrected↕ |
|---------|--------|--------|----------|------------|
| 0↕      | 0.103↕ | 0.111↕ | 0.107 ↕  | ↕          |
| 46.875↕ | 0.131↕ | 0.134↕ | 0.133 ↕  | 0.026 ↕    |
| 93.75↕  | 0.169↕ | 0.174↕ | 0.172 ↕  | 0.065 ↕    |
| 187.5↕  | 0.286↕ | 0.293↕ | 0.290 ↕  | 0.183 ↕    |
| 375↕    | 0.557↕ | 0.580↕ | 0.569 ↕  | 0.462 ↕    |
| 750↕    | 1.330↕ | 1.284↕ | 1.307 ↕  | 1.200 ↕    |
| 1500↕   | 1.916↕ | 1.911↕ | 1.914 ↕  | 1.807 ↕    |
| 3000↕   | 2.389↕ | 2.405↕ | 2.397 ↕  | 2.290 ↕    |

## Msds

```
{
  "0": {
    "fileurl": "https://www.cusabio.com/uploadfile/msds/MSDS CSB-E13608h.pdf",
    "filename": "MSDS"
  }
}
```