

Recombinant SimpleStep ELISA®

2 References 9 Images

Overview

| | |
|---------------------|-----------------------------|
| Product name | Human Lipocalin-2 ELISA Kit |
|---------------------|-----------------------------|

| | |
|------------------|--------------|
| Detection method | Colorimetric |
|------------------|--------------|

Precision

Intra-assay

| Sample | n | Mean | SD | CV% |
|-------------|---|------|----|------|
| Plasma-EDTA | 5 | | | 3.8% |

Inter-assay

| Sample | n | Mean | SD | CV% |
|-------------|---|------|----|------|
| Plasma-EDTA | 3 | | | 2.7% |

| | |
|--------------------|---|
| Sample type | Cell culture supernatant, Saliva, Urine, Serum, Hep Plasma, EDTA Plasma, Cit plasma |
|--------------------|---|

| | |
|-------------------|-------------------------|
| Assay type | Sandwich (quantitative) |
|-------------------|-------------------------|

Sensitivity 14.8 pg/ml

Range 46.9 pg/ml - 3000 pg/ml

Recovery

Sample specific recovery

| Sample type | Average % | Range |
|--------------------------|-----------|-------------|
| Cell culture supernatant | 104 | 101% - 106% |
| Saliva | 109 | 107% - 111% |
| Urine | 110 | 102% - 118% |
| Serum | 105 | 104% - 108% |
| Hep Plasma | 103 | 99% - 107% |
| EDTA Plasma | 109 | 107% - 111% |

| Sample type | Average % | Range |
|-------------|-----------|-------------|
| Cit plasma | 106 | 104% - 109% |

Assay time

1h 30m

Assay duration

One step assay

Species reactivity

Reacts with: Human

Does not react with: Cow

Product overview

Human Lipocalin-2 ELISA Kit (ab215541) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Lipocalin-2 protein in edta plasma, hep plasma, saliva, serum, urine, cell culture supernatant, and cit plasma. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Lipocalin-2 with 14.8 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate ([ab203359](#)) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Notes

Lipocalin-2 (also known as Neutrophil gelatinase-associated lipocalin or NGAL) is an iron binding and iron trafficking protein. Lipocalin-2 is involved in multiple cellular processes including apoptosis, innate immunity and renal development. Mice deficient in Lipocalin-2 appear normal but have increased susceptibility to bacterial infection. The bacteriostatic function may be related to Lipocalin-2 limiting bacterial iron supply. Human Lipocalin-2 has 62% protein sequence identity to mouse Lipocalin-2.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at +4°C. Please refer to protocols.

| Components | 1 x 96 tests | 10 x 96 tests |
|---|--------------|---------------|
| 10X Human Lipocalin-2 Capture Antibody | 1 x 600µl | 1 x 6000µl |
| 10X Human Lipocalin-2 Detector Antibody | 1 x 600µl | 1 x 6000µl |
| 10X Wash Buffer PT (ab206977) | 1 x 20ml | 1 x 200ml |

| Components | 1 x 96 tests | 10 x 96 tests |
|---|--------------|---------------|
| Antibody Diluent 4BR | 1 x 6ml | 10 x 6ml |
| Human Lipocalin-2 Lyophilized Recombinant Protein | 2 vials | 2 x 10 vials |
| Plate Seals | 1 unit | 1 x 10 units |
| Sample Diluent NS (ab193972) | 1 x 50ml | 2 x 250ml |
| SimpleStep Pre-Coated 96-Well Microplate (ab206978) | 1 unit | 1 x 10 units |
| Stop Solution | 1 x 12ml | 1 x 120ml |
| TMB Development Solution | 1 x 12ml | 1 x 120ml |

Function

Iron-trafficking protein involved in multiple processes such as apoptosis, innate immunity and renal development. Binds iron through association with 2,5-dihydroxybenzoic acid (2,5-DHBA), a siderophore that shares structural similarities with bacterial enterobactin, and delivers or removes iron from the cell, depending on the context. Iron-bound form (holo-24p3) is internalized following binding to the SLC22A17 (24p3R) receptor, leading to release of iron and subsequent increase of intracellular iron concentration. In contrast, association of the iron-free form (apo-24p3) with the SLC22A17 (24p3R) receptor is followed by association with an intracellular siderophore, iron chelation and iron transfer to the extracellular medium, thereby reducing intracellular iron concentration. Involved in apoptosis due to interleukin-3 (IL3) deprivation: iron-loaded form increases intracellular iron concentration without promoting apoptosis, while iron-free form decreases intracellular iron levels, inducing expression of the proapoptotic protein BCL2L11/BIM, resulting in apoptosis. Involved in innate immunity, possibly by sequestering iron, leading to limit bacterial growth.

Tissue specificity

Expressed in bone marrow and in tissues that are prone to exposure to microorganism. High expression is found in bone marrow as well as in uterus, prostate, salivary gland, stomach, appendix, colon, trachea and lung. Not found in the small intestine or peripheral blood leukocytes.

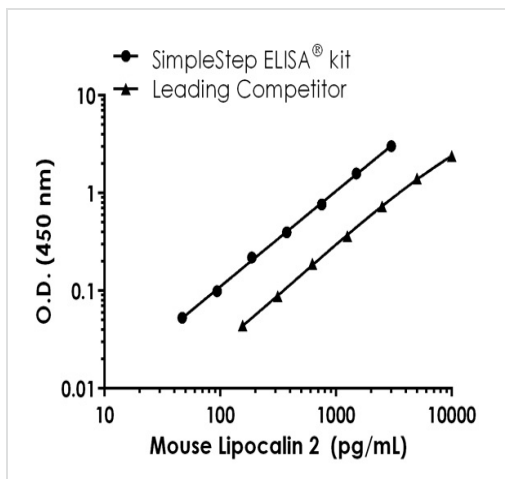
Sequence similarities

Belongs to the calycin superfamily. Lipocalin family.

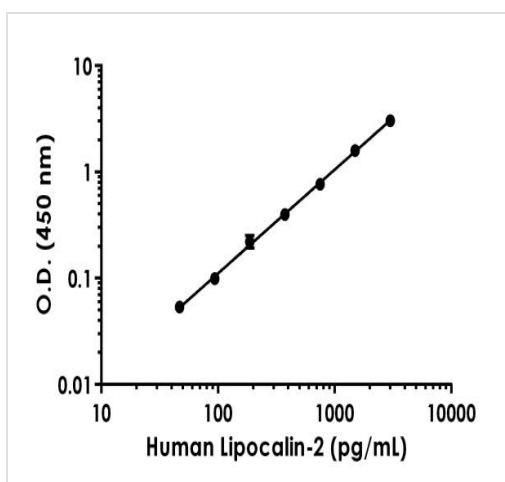
Cellular localization

Secreted. Upon binding to the SLC22A17 (24p3R) receptor, it is internalized.

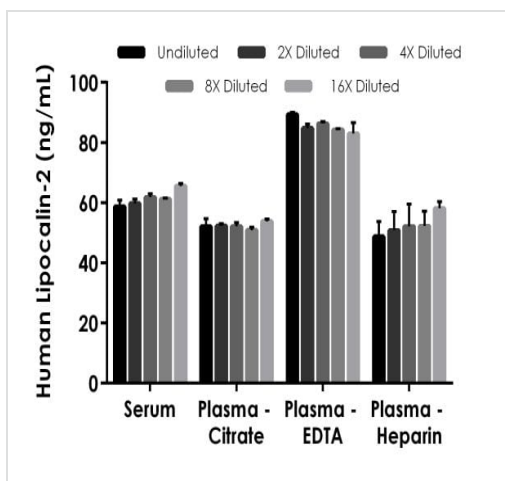
Images



Human Lipocalin-2 standard curve comparison data.

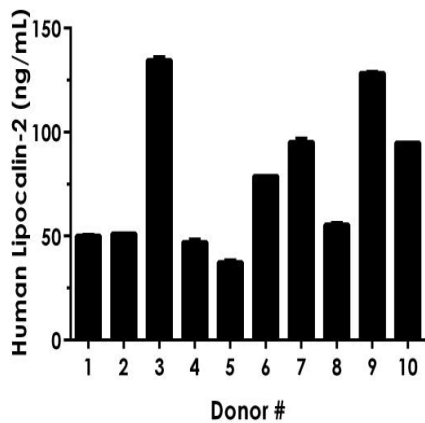


Example of human Lipocalin-2 standard curve.



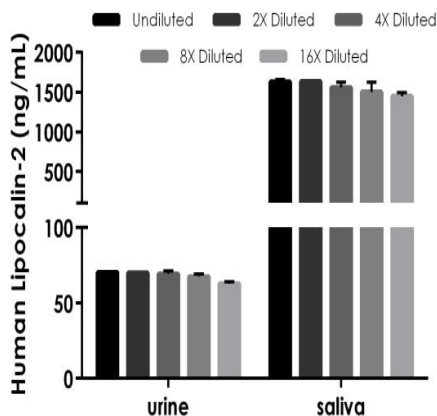
Interpolated concentrations of native Lipocalin-2 in human serum and plasma samples.

The concentrations of Lipocalin-2 were measured in duplicates, interpolated from the Lipocalin-2 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 2%, plasma (citrate) 2%, plasma (EDTA) 2%, and plasma (heparin) 2%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Lipocalin-2 concentration was determined to be 61.4 ng/mL in serum, 52.2 ng/mL in plasma (citrate), 85.5ng/mL in plasma (EDTA) and 52.4ng/mL in plasma (heparin).



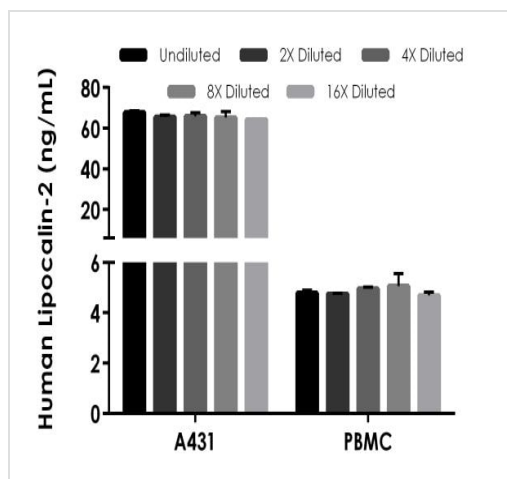
Serum from ten individual healthy human female donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean \pm SD, $n=2$). The mean Lipocalin-2 concentration was determined to be 77 ng/mL with a range of 37 – 135 ng/mL.



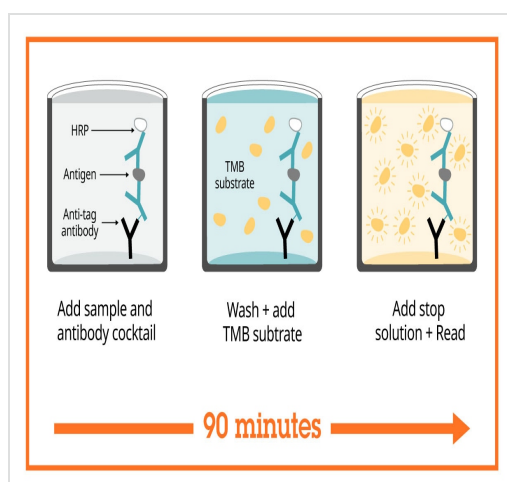
Interpolated concentrations of native Lipocalin-2 in human urine and saliva samples.

The concentrations of Lipocalin-2 were measured in duplicates, interpolated from the Lipocalin-2 standard curves and corrected for sample dilution. Undiluted samples are as follows: urine 3% and saliva 0.05%. The interpolated dilution factor corrected values are plotted (mean \pm SD, $n=2$). The mean Lipocalin-2 concentration was determined to be 67.9 ng/mL in urine and 1,551 ng/mL in saliva.



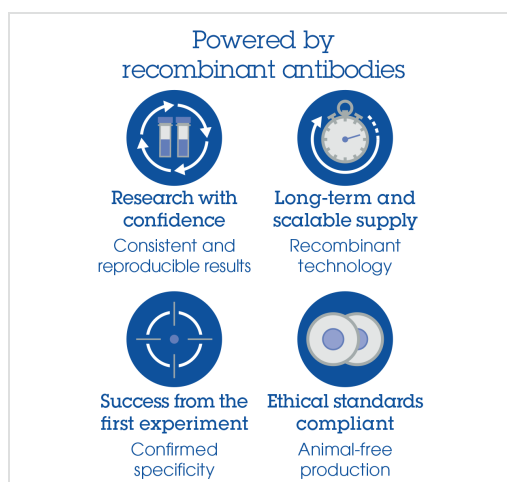
Interpolated concentrations of native Lipocalin-2 in human A431 cell culture supernatant and peripheral blood monocyte (PBMC) cell culture supernatant.

The concentrations of Lipocalin-2 were measured in duplicates, interpolated from the Lipocalin-2 standard curves and corrected for sample dilution. Undiluted samples are as follows: A431 2% and PBMC 33%. The interpolated dilution factor corrected values are plotted (mean \pm SD, $n=2$). The mean Lipocalin-2 concentration was determined to be 65.8 ng/mL in A431 and 4.85 ng/mL in PBMC cell culture supernatant.



Sandwich ELISA - Human Lipocalin-2 ELISA Kit (ab215541)

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



Sandwich ELISA - Human Lipocalin-2 ELISA Kit (ab215541)

To learn more about the advantages of recombinant antibodies see [here](#).

**Get more done with
SimpleStep ELISA**



Easy to use
Single-wash 90-minute
protocol



Flexible
Matched antibody pairs
available



Precision antibodies
High sensitivity, specificity
and reproducibility



Scalable
Now in 10-pack and
384-well formats

To learn more about the advantages of SimpleStep ELISA® kits
see [here](#).

Sandwich ELISA - Human Lipocalin-2 ELISA Kit
(ab215541)

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