



# Human Mitochondrial brown fat uncoupling protein 1(UCP1) ELISA kit

Product Code	CSB-EL025554HU
Abbreviation	UCP1
Protein Biological Process 1	Transport
Target Name	uncoupling protein 1 (mitochondrial, proton carrier)
Uniprot No.	P25874
Alias	SLC25A7, UCP, mitochondrial brown fat uncoupling protein thermogenin uncoupling protein 1
Product Type	ELISA Kit
Immunogen Species	Homo sapiens (Human)
Protein Biological Process 3	Transport
Sample Types	serum, plasma, tissue homogenates
Detection Range	31.25 pg/mL-2000 pg/mL
Sensitivity	7.81 pg/mL
Assay Time	1-5h
Sample Volume	50-100ul
Detection Wavelength	450 nm
Lead Time	3-5 working days after you place the order, and it takes another 3-5 days for delivery via DHL or FedEx.
Research Area	Cancer
Gene Names	UCP1
Tag Info	quantitative
Protein Description	Sandwich

## Description

This Human UCP1 ELISA Kit was designed for the quantitative measurement of Human UCP1 protein in serum, plasma, tissue homogenates. It is a Sandwich ELISA kit, its detection range is 31.25 pg/mL-2000 pg/mL and the sensitivity is 7.81 pg/mL .

## Target Details

Mitochondrial uncoupling proteins (UCP) are members of the family of mitochondrial anion carrier proteins (MACP). UCPs separate oxidative phosphorylation from ATP synthesis with energy dissipated as heat, also referred to as the mitochondrial proton leak. UCPs facilitate the transfer of



anions from the inner to the outer mitochondrial membrane and the return transfer of protons from the outer to the inner mitochondrial membrane. They also reduce the mitochondrial membrane potential in mammalian cells. Tissue specificity occurs for the different UCPs and the exact methods of how UCPs transfer  $H^+/OH^-$  are not known. UCPs contain the three homologous protein domains of MACPs. This gene is expressed only in brown adipose tissue, a specialized tissue which functions to produce heat.

#### 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.

#### Linearity

To assess the linearity of the assay, samples were spiked with high concentrations of human UCP1 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)
1:1	Average %	92
	Range %	87-99
1:2	Average %	101
	Range %	93-105
1:4	Average %	94
	Range %	86-98
1:8	Average %	98
	Range %	93-105

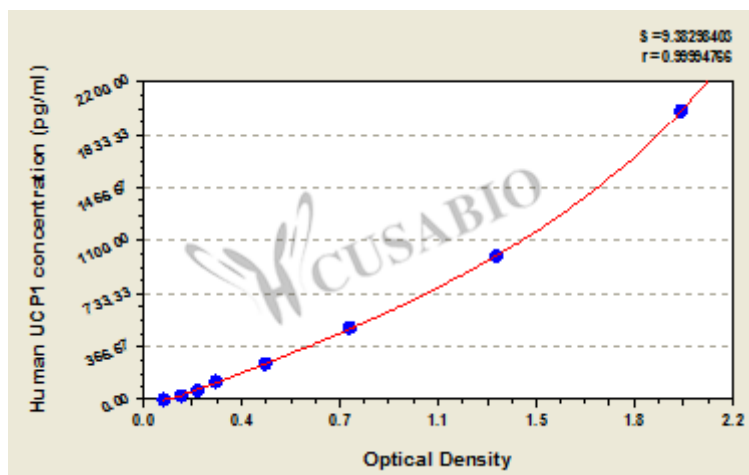
#### Recovery

The recovery of human UCP1 spiked to levels throughout the range of the assay in various matrices was evaluated. Samples were diluted prior to assay as directed in the Sample Preparation section.

Sample Type	Average % Recovery	Range
Serum (n=5)	95	90-98
EDTA plasma (n=4)	92	89-95

#### 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
2000	2.093	1.952	2.023	1.940
1000	1.344	1.321	1.333	1.250
500	0.781	0.777	0.779	0.696
250	0.471	0.455	0.463	0.380
125	0.283	0.278	0.281	0.198
62.5	0.212	0.207	0.210	0.127
31.25	0.149	0.145	0.147	0.064
0	0.085	0.081	0.083	?

## Msds

```
{
  "0": {
    "fileurl": "https://www.cusabio.com/uploadfile/msds/MSDS CSB-EL025554HU.pdf",
    "filename": "MSDS"
  }
}
```