



Mouse uncoupling protein 3 (UCP3) ELISA kit-Quantitative sandwich (78-5000 pg/mL)

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| Cat. No.: | 0126WXX-2079 |
| Assay Type: | Quantitative sandwich ELISA |
| Target Species: | Mouse |
| Assay Target: | UCP3 |
| Size: | 48T; 96T |

This product is for research use only and is not intended for diagnostic use.

Product Overview

Description

Mouse uncoupling protein 3 (UCP3) ELISA kit-Quantitative sandwich (78-5000 pg/mL) is an ELISA-based *in vitro* research tool designed specifically for the quantitative detection of UCP3 in mouse samples with a range of 78-5000 pg/mL and a minimum detectable dose (sensitivity) of 40.7 pg/mL. The kit is highly sensitive and easy to use.

Assay Principle

The ELISA analytical biochemical technique is based on UCP3 antibody-UCP3 antigen interactions (immunosorbency) and an HRP colorimetric detection system to detect UCP3 antigen targets in samples.

Background

UCP3 is a key member of the UCP family, functioning as a transporter located in the inner mitochondrial membrane. Its primary role is to create a proton leakage pathway, allowing protons to bypass the ATP synthase and thereby decouple the oxidative phosphorylation process. This decoupling results in energy that would otherwise be used for ATP synthesis being dissipated as heat rather than stored in chemical bonds. In obesity research, UCP3 serves as a key regulator of thermogenesis and systemic energy balance, exhibiting high expression primarily in skeletal muscle. Studies indicate that elevated UCP3 levels may contribute to increased basal metabolic rate, enhanced fatty acid oxidation, and resistance to weight gain, positioning it as a potential therapeutic target for obesity treatment and improved insulin sensitivity.



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| Synonyms | SLC25A9; Mitochondrial uncoupling protein 3; UCP 3; Solute carrier family 25 member 9; Uncoupling protein 3; mitochondrial |
| Formula Weight | 33,911 Da |
| Applications | Mouse uncoupling protein 3 (UCP3) ELISA kit-Quantitative sandwich (78-5000 pg/mL) is used to quantify UCP3 in mouse samples, providing data to support research in a wide range of areas, including metabolism, mitochondrial function, oxidative stress, exercise physiology, energy balance, obesity, and others. |
| Research Area | Metabolism; Mitochondrial function; Oxidative stress; Exercise physiology and energy balance; Obesity |

Specification

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| Sample Type | Mouse samples |
| Detection Range | 78-5000 pg/mL |
| Sensitivity | 40.7 pg/mL |
| Precision (Intra-assay) | CV≤5.8% |
| Precision (Inter-assay) | CV≤8.3% |
| Cross-reactivity | No significant cross-reactivity or interference was observed. |
| Recovery | 1.06 |
| Storage | Store at -20°C. |