

Human Leptin/OB (hLeptin)



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MW (kDa):
15

UniProt ID:
#P41159

Entrez-Gene Id:
3952

Background

Leptin is a 16 kDa adipocyte-derived hormone that relays the status of the body's energy reserves to the hypothalamus, resulting in the suppression of appetite and modulation of energy expenditure (1,2). Leptin functions as a pleiotropic cytokine with multiple roles in immune function and reproduction (1-4). There are at least five isoforms of the leptin receptor, but only OB-Rb is signaling competent (1,2). OB-Rb is expressed on a number of cells, including T cells, B cells, keratinocytes, and others (1-6). Leptin/OB-Rb interactions induce Jak2, PI3K, Erk1/2, and Stat3 activation (1,2). OB-Rb is often highly expressed in many tumor types, including breast, pancreatic, and Tumor Initiating Stem Cells (TISCS), providing a potential mechanistic link for the tumor promoting effects of obesity (2,7).

Endotoxin

Less than 0.01 ng endotoxin/1 µg hLeptin.

Purity

>98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hLeptin. All lots are greater than 98% pure.

Source / Purification

Recombinant human Leptin (hLeptin) Val22-Cys167 (Accession #NP_000221) was produced in *E.coli* at Cell Signaling Technology.

Bioactivity

The bioactivity of recombinant hLeptin was determined by its ability to induce TNF-α production from MCF7 cells. The minimum concentration used to obtain this effect was 50 µg/ml.

Background References

1. Faggioni, R. et al. (2001) *FASEB J* 15, 2565-71.
2. Park, J. et al. (2011) *Endocr Rev* 32, 550-70.
3. Mancuso, P. et al. (2011) *J Immunol* 186, 1081-90.
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5. Kanda, N. and Watanabe, S. (2008) *Endocrinology* 149, 5189-98.
6. Tanaka, M. et al. (2011) *J Neurosci* 31, 8373-80.
7. Feldman, D.E. et al. (2012) *Proc Natl Acad Sci U S A* 109, 829-34.

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