



## Anti-human Leptin

20141007BB

**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no.:</b>	<b>102-PA135</b>
Size:	200 µg
Lot. No.:	According to product label
Country of origin:	Germany

**Preparation:** Produced from sera of rabbits pre-immunized with highly pure (>98%) recombinant human Leptin (Val22-Cys167) derived from E. coli.

### Target Background

<b>Synonyms:</b>	Obese protein, Obesity factor, OBS
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Obesity is linked to increased incidence of breast cancer. The precise causes and mechanisms of these morbid relationships are unknown. However, accumulating evidence would suggest that leptin's pro-angiogenic effects in cancer play an essential role in the disease. Leptin, the main adipokine secreted by adipose tissue, is also abnormally expressed together with its receptor (OB-R) by breast cancer cells. Leptin induces proliferation and angiogenic differentiation of endothelial cells upregulates VEGF/VEGFR-2 and transactivates VEGFR-2 independent of VEGF. Leptin induces two angiogenic factors: IL-1 and Notch that can increase VEGF expression. Additionally, leptin induces the secretion and synthesis of proteases and adhesion molecules needed for the development of angiogenesis. Leptin's paracrine actions can further affect stromal cells and tumor associated macrophages, which express OB-R and secrete VEGF and IL-1, respectively. A complex crosstalk between Leptin, Notch and IL-1 (NILCO) that induces VEGF/VEGFR-2 is found in breast cancer. Leptin actions in tumor angiogenesis could amplify, be redundant and/or compensatory to VEGF signaling. Current failure of breast cancer anti-angiogenic therapies emphasizes the necessity of targeting the contribution of other pro-angiogenic factors in breast cancer. Leptin's impact on tumor angiogenesis could be a novel target for breast cancer, especially in obese patients. However, more research is needed to establish the importance of leptin in tumor angiogenesis.

### References

1. Gonzalez-Perez RR et al, Cancers 5(3):1140-62, 2013
2. Umeki H et al, PLoS One 9(7):e101984, 2014
3. Manuel-Apolinar L et al, Int J Clin Exp Med 6(3):192-6, 2013
4. Vansaun MN, Clin Cancer Res 15:19(8):1926-32, 2013
5. Cao Y, J Clin Invest 117(9):2362-8, 2007
6. Cao R et al, PNAS 98(11):6390-5, 2001
7. Ferla R et al, BMC Cancer 11:303, 2011
8. Garonna E et al, PLoS One 6(4):e18823, 2011
9. Zhou W et al, Br J Cancer 104(1):128-37, 2011

### Database References Antigen

<b>Protein RefSeq:</b>	NP_000221.1
<b>Uniprot ID:</b>	P41159
<b>mRNA RefSeq:</b>	NM_000230.2

### Product Specifications

<b>Species reactivity</b>	human
<b>Clone/Ab feature</b>	rabbit IgG
<b>Cross reactivity</b>	n.d.
<b>Host</b>	rabbit
<b>Clonality</b>	polyclonal
<b>Purification</b>	Protein A purified
<b>Immunogen</b>	recombinant human Leptin (RT #400-019)
<b>Formulation</b>	Lyophilized
<b>Buffer</b>	5 mM PBS, pH 7.2

**Stability:** The lyophilized antibody is stable at room temperature for up to 1 month. The reconstituted antibody is stable for at least two weeks at 2-8°C. Frozen aliquots are stable for at least 6 months when stored at -20°C.

**Reconstitution:** Centrifuge vial prior to opening. Reconstitute in sterile water to a concentration of 0.1-1.0 mg/ml.

**AVOID REPEATED FREEZE AND THAW CYCLES!**

### Applications

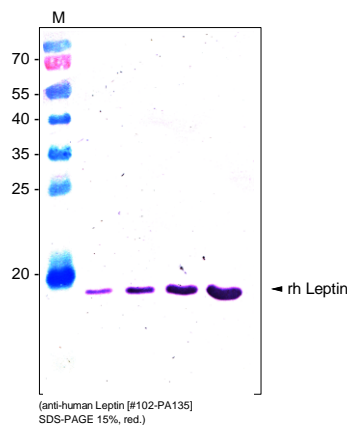
**Western Blot:** Use at 1-5 µg/ml

**NOTE: OPTIMAL DILUTIONS SHOULD BE DETERMINED BY EACH LABORATORY FOR EACH APPLICATION!**

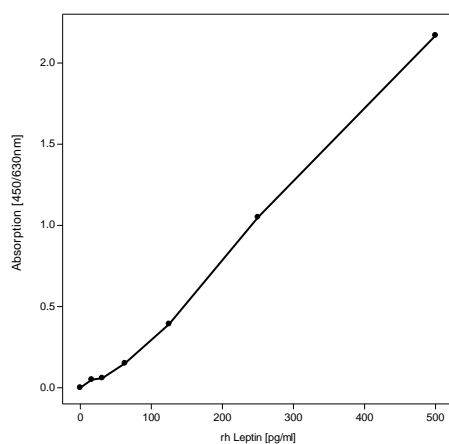


## Anti-human Leptin

### Handling/Applications



**Figure 1:** Western analysis of recombinant human Leptin [Cat# 400-019] using an anti-human Leptin polyclonal antibody [WB. AP-conjugated secondary antibody].



**Figure 2:** Functional ELISA with anti-human Leptin [Cat# 102-PA135]. Recombinant human Leptin [Cat# 400-019] was coated with increasing amounts in a 96 well microtiter plate. Rabbit anti-human Leptin [0,1µg/well] was used for detection.