Recombinant Human VLDL R

Catalog Number: 8444-VL

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived Thr25-Ser797, with a C-terminal 6-His tag Accession # P98155
N-terminal Sequence Analysis	Thr25
Predicted Molecular Mass	86 kDa

SPECIFICATIONS

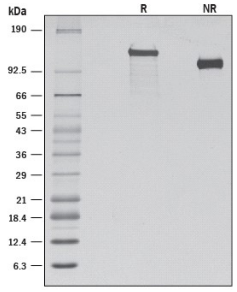
SDS-PAGE	116-142 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human LRPAP is coated at 1 µg/mL (100 µL/well), the concentration of Recombinant Human VLDL R hat produces 50% of the optimal binding response is found to be approximately 5-30 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

SDS-PAGE



1 µg/lane of Recombinant Human VLDL R (Catalog # 8444-VL) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 129 and 107 kDa, respectively.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

Recombinant Human VLDL R

Catalog Number: 8444-VL

BACKGROUND

Very low density lipoprotein receptor (VLDL R) is a 130 kDa type I transmembrane protein that plays a significant role in lipid metabolism and in nervous system development and function (1). Mature human VLDL R consists of a 770 amino acid (aa) extracellular domain (ECD) with eight tandem LDLR class A repeats, three EGF-like domains, six tandem LDLR class B repeats, and a juxtamembrane region that is rich in O-linked glycosylation; a transmembrane segment, and a 54 aa cytoplasmic domain with one NPxY internalization motif (2). Within the ECD, human VLDLR shares 95% and 92% aa sequence identity with mouse and rat VLDL R, respectively. Alternative splicing of human VLDL R shows a deletion of the O-glycosylated region and also includes a critical determinant for ApoE binding (3, 4). VLDL R is predominantly expressed on endothelial cells lining capillaries and small arterioles (5). VLDL R participates in the tissue uptake of fatty acids from plasma by mediating the internalization of ApoE-containing lipoparticles (*i.e.* VLDL, β-VLDL, and chylomicron remnants) (6). VLDL R binds and internalizes lipoprotein lipase (LPL) and mediates its transport from the basolateral to the lumenal face of endothelial cells (7, 8). VLDL R knockout mice are characterized by reduced LPL activity and increased serum triglyceride clearance (9). VLDL R influences breast cancer cell motility by mediating the uptake of uPAR-PAI1 complexes (7, 10). Lipoprotein accumulation *via* macrophage VLDL R is instrumental in promoting the formation of atherosclerotic plaques (11). In the nervous system, VLDL R and ApoE R2 interactions with Reelin are critical for neuronal migration and positioning in the developing brain (12, 13). VLDL R also functions in adult hippocampal synapse maturation, synaptic plasticity, and memory formation (14).

References:

1. May, P. *et al.* (2005) Cell. Mol. Life Sci. **62**:2325.
2. Sakai, J. *et al.* (1994) J. Biol. Chem. **269**:2173.
3. Iijima, H. *et al.* (1998) J. Biochem. **124**:747.
4. Ruiz, J. *et al.* (2005) J. Lipid Res. **46**:1721.
5. Wyne, K.L. *et al.* (1996) Arterioscler. Thromb. Vasc. Biol. **16**:407.
6. Hauser, P.S. *et al.* (2011) Prog. Lipid Res. **50**:62.
7. Argraves, K.M. *et al.* (1995) J. Biol. Chem. **270**:26550.
8. Obunike, J.C. *et al.* (2001) J. Biol. Chem. **276**:8934.
9. Yagyu, H. *et al.* (2002) J. Biol. Chem. **277**:10037.
10. Webb, D.J. *et al.* (1999) J. Biol. Chem. **274**:7412.
11. van Eck, M. *et al.* (2005) Atherosclerosis **183**:230.
12. Hiesberger, T. *et al.* (1999) Neuron **24**:481.
13. Trommsdorff, M. *et al.* (1999) Cell **97**:689.
14. Weeber, E.J. *et al.* (2002) J. Biol. Chem. **277**:39944.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449