

Human Low density lipoprotein (Dil-Ac-LDL) Acetylated & Dil-labeled

Cat # LDLA16-N-1

Human Plasma low density lipoprotein (Dil-Ac-LDL) Acetylated & Dil-labeled, purified

Size: 100 ug

Low-density lipoprotein (LDL) is one of the five major groups of lipoproteins, which in order of size, largest to smallest, are chylomicrons, VLDL, IDL, LDL, and HDL, that enable transport of multiple different fat molecules, including cholesterol, within the water around cells and within the water-based bloodstream. Studies have shown that higher levels of type-B LDL particles (as opposed to type-A LDL particles) are associated with health problems, including cardiovascular disease. LDL is often informally called **bad cholesterol**, (as opposed to HDL particles, which are frequently referred to as **good cholesterol** or healthy cholesterol).

Each native LDL particle contains a single apolipoprotein B-100 molecule (Apo B-100, a protein that has 4536 amino acid residues and a mass of 514 kDa), which circulates the fatty acids, keeping them soluble in the aqueous environment.[citation needed] In addition, LDL has a highly hydrophobic core consisting of polyunsaturated fatty acid known as linoleate and about 1500 esterified cholesterol molecules. This core is surrounded by a shell of phospholipids and unesterified cholesterol, as well as the single copy of Apo B-100. LDL particles are approximately 22 nm (0.0000087 in.) in diameter and have a mass of about 3 million daltons, but since LDL particles contain a changing number of fatty acids, they actually have a distribution of mass and size

Fifty percent of IDLs are recognized by receptors in the liver cells because of the apoB-100 and apoE they contain and are endocytosed. The other 50% of IDL lose apoE. When their cholesterol content becomes greater than the content of triglyceride, they become LDL, with apoB-100 as the primary apolipoprotein. The LDL is taken into a cell via the LDL receptor via endocytosis, where the contents are either stored, used for cell membrane structure, or converted into other products such as steroid hormones or bile acids.

Source and Form:

Purified LDL is acetylated and then labeled with fluorescent probe, Dil. Dil-Ac-DL is reloaded by ultracentrifugation (1.19-1.063g/cc)/ The resultant product is dialyzed against PBs, pH 7.4, 0.3mM EDTA, and sterile filtered. Cons is typically 200 ug/ml or 100 ug/0.5 ml. Absorbance ratio: Dil/Protein=555nm/280nm=5.1

Storage: Store at 4oC. Stable for 3 months. **Do not Freeze.**

Dil-Ac-LDL, Acetylated Low Density Lipoprotein, labeled with 1,1'-diiododecyl - 3,3',3'-tetramethyl-indocarbocyanine perchlorate, labels both vascular endothelial cells and macrophages. It can be used to identify and/or isolate these cells from mixed cell populations. When cells are labeled with Dil-Ac-LDL, the lipoprotein is degraded by lysosomal enzymes and the Dil (fluorescent probe) accumulates in the intracellular membranes. Labeling cells with Dil-Ac-LDL has no effect on cell viability. Pure cultures of vascular endothelial cells can be isolated from complex primary cultures using fluorescent activated cell sorting based on their increased metabolism of the Dil-Ac-LDL. Contaminating cell types (fibroblasts, smooth muscle, pericytes, epithelial cells) are not labeled. Macrophages can be differentiated from mixed cell populations (including endothelial cells) because they are more

brightly labeled. Labeling endothelial cells with Dil-Ac-LDL has many advantages over labeling other endothelial cell associated antigens. The labeling procedure is one step, and once the cells are labeled, the fluorescent probe (Dil) is not removed by Trypsin. Both low density and confluent cultures of vascular endothelial cells are effectively labeled. No other cell type (other than macrophages) is labeled to the same level as vascular endothelial cells. Each lot of Dil-Ac-LDL is evaluated for the specific labeling of bovine aortic endothelial cells and murine macrophages to assure consistent results.

All items are for in vitro research use only.

Related items

Catalog#	ProdDescription
HDL31-N-1	Human Plasma high density lipoprotein (HDL) native, purified
LDLA12-N-1	Human Plasma low density lipoprotein (Ac-LDL) Acetylated, purified
LDLA16-N-1	Human Plasma low density lipoprotein (Dil-Ac-LDL) Acetylated & Dil-labeled, purified
LDLB14-N-1	Human Plasma low density lipoprotein (b-LDL) Biotinylated, purified
LDLD15-N-1	Human Plasma low density lipoprotein (dil-LDL) Dil-labeled, purified
LDLN11-A	Anti-Human Plasma low density lipoprotein (LDL) native, antiserum
LDLN11-N-1	Human Plasma low density lipoprotein (LDL) native, purified
LDLN11-N-5	Human Plasma low density lipoprotein (LDL) native, purified
LDLO13-N-1	Human Plasma low density lipoprotein (o-LDL) Oxidized, purified
LDLO17-N-1	Human Plasma low density lipoprotein (Dil-O-LDL) Oxidized & Dil-labeled, purified
LIPH16-N	Lipoproteins, High Density, Human Plasma
LIP17-N	Lipoproteins, Intermediate Density, Human Plasma
LIP18-N	Lipoproteins, Low Density, Human Plasma
LIPV19-N	Lipoproteins, Very Low Density, Human Plasma
VLDLN21-N-1	Human Plasma very low density lipoprotein (VLDL) native, purified
APOA11-S	Anti-Human Plasma Apolipoprotein A-I protein antiserum
APOA12-A	Anti-Human Apolipoprotein A-I protein IgG, aff pure
APOA13-A	Anti-Mouse Apolipoprotein A-I protein IgG, aff pure
APOA15-N-100	Apolipoprotein A-I, Human Plasma, HDL
APOA21-A	Anti-Human Apolipoprotein A-II protein IgG, aff pure
APOA25-N-100	Apolipoprotein A-II, Human Plasma, HDL
APOA45-N-100	Apolipoprotein A-IV, Human Plasma, HDL
APOB21-A	Ant-Human Apolipoprotein B IgG, aff pure
APOB25-N-100	Apolipoprotein B, Human Plasma, LDL
APOC11-A	Anti-Human Apolipoprotein C-I IgG, aff pure
APOC15-N-100	Human Apolipoprotein C-I protein control for WB
APOC15-N-100	Apolipoprotein C-I, Human Plasma, VLDL
APOC21-S	Anti-Human Plasma Apolipoprotein C-II antiserum
APOC22-A	Anti-Human Apolipoprotein C-II IgG, aff pure
APOC25-N-50	Apolipoprotein C-II, Human Plasma, VLDL
APOC32-A	Anti-Human Apolipoprotein C-III IgG, aff pure
APOC35-N-50	Apolipoprotein C-III, Human Plasma, VLDL
Goat-Poly APOE11-S	Anti-Human ApoE protein antiserum #1
APOE12-M	Monoclonal Anti-Human ApoE protein IgG #2
APOE13-A	Anti-Human Plasma Apolipoprotein E (ApoE) IgG, aff pure
APOE15-R	Human Purified native plasma Apolipoprotein E protein
APOE25-R	Recombinant Purified Human Apolipoprotein E2 protein
APOE31-S	Anti-Human ApoE3
APOE35-R	Recombinant Purified Human Apolipoprotein E3 protein
APOE36-R	Recombinant (E coli) Purified

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India Contact:

Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura,
Delhi - 110034 (INDIA).
Ph: +91-11-42208000, 42208111, 42208222
Mobile: +91-9810521400
Fax: +91-11-42208444
Email: customerservice@lifetechindia.com
Web: www.lifetechindia.com ; www.atzlabs.com