ALPHA DIAGNOSTIC INTERNATIONAL

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Product Data Sheet

Cat # LDLD46-S	Bovine calf serum lipoprotein deficient serum	**Size:** 10 ml (or Bulk custom sizes)

Apolipoproteins are proteins that bind to fats (lipids). They form lipoproteins, which transport dietary fats through the bloodstream. Dietary fats are digested in the intestine and carried to the liver. Fats are also synthesized in the liver itself. Fats are stored in fat cells (adipocytes). Fats are metabolized as needed for energy in the skeletal muscle, heart, and other organs and are secreted in breast milk. Apolipoproteins also serve as enzyme co-factors, receptor ligands, and lipid transfer carriers that regulate the metabolism of lipoproteins and their uptake in tissues.

Apolipoprotein B (APOB) is the primary apolipoprotein of low-density lipoproteins (LDL or "bad cholesterol"), which is responsible for carrying cholesterol to tissues. While it is unclear exactly what functional role APOB plays in LDL, it is the primary apolipoprotein component and is absolutely required for its formation. What is clear is that the APOB on the LDL particle acts as a ligand for LDL receptors in various cells throughout the body (i.e. less formally, APOB "unlocks" the doors to cells and thereby delivers cholesterol to them). Through a mechanism that is not fully understood, high levels of APOB can lead to plaques that cause vascular disease (atherosclerosis), leading to heart disease. There is considerable evidence that levels of APOB are a better indicator of heart disease risk than total cholesterol or LDL. However, primarily for practical reasons, cholesterol, and more specifically, LDL-cholesterol, remains the primary lipid target and risk factor for atherosclerosis.

Apolipoprotein B is the dominant protein constituent of LDL. The concentration of Apo B in normal plasma is 90 mg per 100 ml. Two forms of Apo B exist: Apo B-100 and Apo B-48. The first is found in VLDL and LDL and is produced by the liver. The second is found in chylomicrons and originates in the intestine. Human ApoB (protein accession #PA04114; 4509 aa, chromosome 2).

General References: Knott C (1986) Nucl. Acid Res. 14, 7501-7503; Law SW (1985) PNAS 82, 8340-8344; Hardman DA (1987) Biochem. 26, 5478-5486; Hospattankar AV (1987) BBRC 148, 279-285; Yang C-y (1986) Nature 323, 738-742; Knott TC (1986) Nature 323, 734-738;

Product Specification

Protein Conc	72.3 mg/ml
Packaging:	Deficient Bovine calf serum is membrane (0.22 micron) filtered and aseptically packaged and frozen.
Preparation:	Bovine calf serum in the presence of KBr (concentration: 1.21 grams per CC) is ultracentrifuged for 48 hours. The resultant plasma (D>1.21) is extensively (4-5 days) dialyzed against 0.15M NaCl, 50mM Tris HCl and 0.3mM EDTA at pH 7.4. It is then membrane filtered (0.22 microns) and packaged in conical tubes. The resulting lipoprotein deficient volume is approximately ½ the original volume of bovine calf serum (we do not dilute back up to original volume).
Cell Culture:	Each lot is evaluated in Human Skin Fibroblast cell culture in conjunction with our I^{125}] LDL, to determine the ability of up regulation of LDL receptors.
Storage & Stability:	This product should be aliquoted and stored frozen (-20ºC or -80ºC). If particulates are present upon thawing, centrifuge for 15 minutes at 10000RPM. Filtration may be necessary. The shelf life of Lipoprotein Deficient Serum is estimated to be 6-12 months when stored at –80°C.

This type of Lipoprotein Deficient Human Serum preparation usually gives 3.5 to 4 fold increase in [I^{125}]LDL binding over fetal calf serum after a 48 hour incubation of 70% confluent human skin fibroblasts.

Usage:
This item is for LABORATORY ESEARCH USE ONLY.

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