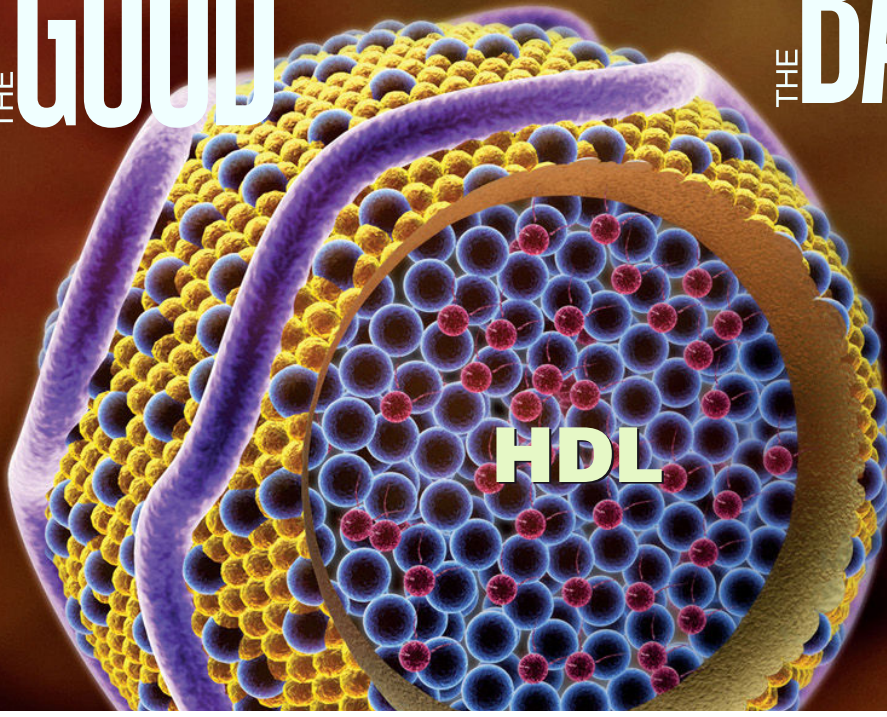


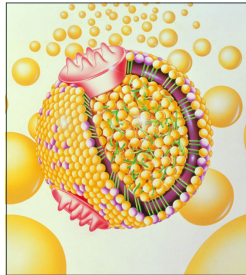
THE **GOOD**

THE **BAD**



AND THE **UGLY**
sd-LDL

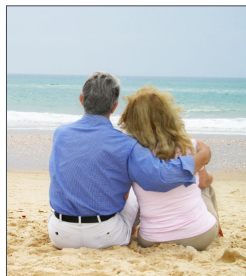
Small, dense LDL cholesterol is considered a critical risk factor for developing coronary heart disease (CHD) and cardiovascular disease (CVD)



Small, dense LDL particles have been suggested to be more atherogenic than large buoyant LDL and are a strong and independent predictor of CHD



The measurement of small, dense LDL, when used in conjunction with other biochemical markers and coronary risk factors, is useful in the prediction of CHD/CVD risk and the assessment of CHD/CVD severity



Small, dense LDL can now be measured easily and quickly in any routine clinical laboratory with the s LDL-C assay, allowing medical professionals to initiate appropriate treatment and monitor patients with elevated levels of small, dense LDL

 **DENKA SEIKEN CO., LTD.**

Small, dense LDL Cholesterol

Summary

The measurement of small, dense LDL cholesterol, when used in conjunction with other biochemical markers and coronary risk factors, is useful in the prediction of CHD/CVD risk and the assessment of CHD/CVD severity.

Clinical relevance



LDL-cholesterol is considered a critical risk factor for developing coronary heart disease (CHD) and cardiovascular disease (CVD). However, the qualitative features of LDL particles also play important roles in the development of CHD, particularly in view of the predominance of small dense LDL particles. Small dense LDL particles have been suggested to be highly atherogenic due to their higher penetration into the arterial wall, their lower binding affinity for the LDL receptor, their prolonged plasma half-life and their lower resistance to oxidative stress compared to that of large buoyant LDL (1-4). A recent study has confirmed that a predominance of small dense LDL is a strong and independent risk predictor of CHD (5). Another study demonstrated that the LDL size is markedly smaller and that small, dense LDL levels are significantly higher in CHD patients than in controls and also that there is a clear relationship between small, dense LDL cholesterol levels and the severity of coronary heart diseases (6,7).

Detection method

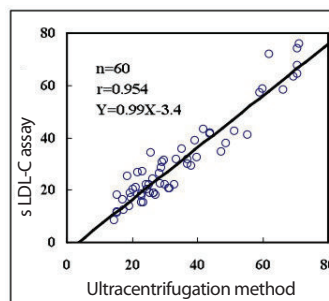
To date, ultracentrifugation and electrophoresis-based methods are used for the measurement of small, dense LDL.

However, these methods are both laborious and time-consuming (8) and hence cannot be used easily in a routine laboratory setting.

The s LDL-C assay is a simple test for the quantitative determination of small dense LDL cholesterol in human serum or plasma. The assay is based on Denka Seiken's patented technology and consists of two steps: the first step removes non-sd LDL lipoproteins (chylomicrons, VLDL, IDL, L LDL and HDL) using a surfactant and sphingomyelinase in Reagent 1, where the released cholesterol is then degraded by standard enzymatic reactions; in the second step, another specific surfactant releases cholesterol only from the sd LDL particles and the catalase in Reagent 1 is inhibited by sodium azide while the hydrogen peroxide produced from the reaction of cholesterol esterase and cholesterol oxidase results in a purple red color with the coupler in the presence of peroxidase. The test is completed in 10 minutes and can be run on any standard clinical chemistry analyzer.

Test performance

The linearity range of this assay is 4-100 mg/dL and little or no interference was detectable in blood samples containing Hemoglobin (<500 mg/dL), Ascorbic Acid (<50 mg/dL) or Bilirubin (<30 mg/dL). This simple, homogeneous assay shows excellent correlation with the ultracentrifugation method as shown below. For more detailed information, please read the s LDL-C product insert.



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