

# Lp-PLA<sub>2</sub>

## Lipoprotein-associated phospholipase A<sub>2</sub>

Emerging Biomarker in Atherosclerotic Risk Assessment

### Determination of Enzyme Activity

- Liquid-stable, ready-to-use reagents
- Excellent precision
- No interference by hemolytic, icteric and lipemic samples
- Adaptable on any clinical chemistry analyzer

**DiaSys**

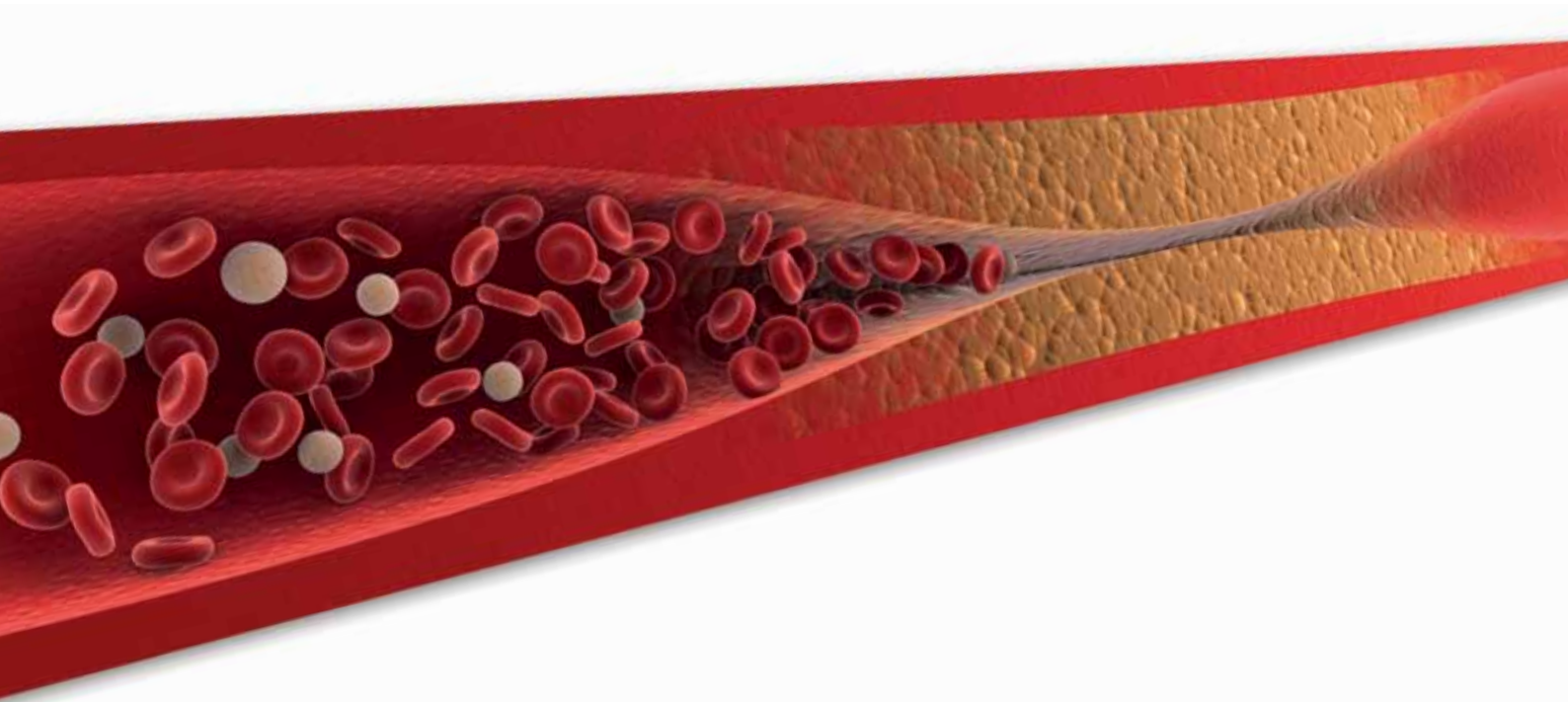
Diagnostic Systems

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## Clinical Relevance

Lp-PLA<sub>2</sub> – also known as platelet-activating factor acetylhydrolase (PAF-AH) – is a vascular-specific inflammatory enzyme, predominantly expressed by macrophages, lymphocytes and foam cells in atherosclerotic plaques. Circulating Lp-PLA<sub>2</sub> is mainly associated with apolipoprotein B-containing lipoproteins, hence closely associated with low-density lipoprotein (LDL). The enzyme hydrolyzes oxidized phospholipids on LDL particles within the arterial intima, generating highly inflammatory mediators, lysophosphatidylcholine (Lyso-PC) and oxidized non-esterified fatty acids (oxNEFAs).

Many important studies confirm a strong association between Lp-PLA<sub>2</sub> levels and cardiovascular risk among different populations. These studies show that in individuals with normal LDL, elevated Lp-PLA<sub>2</sub> levels were strongly associated with heart disease and ischemic stroke, independent of traditional risk markers and high-sensitive CRP. Due to the fact that Lp-PLA<sub>2</sub> is involved in the causal pathway of plaque inflammation and plaque rupture, the testing for Lp-PLA<sub>2</sub> represents a valuable adjunctive tool which goes beyond traditional cardiovascular risk assessment.



## The Importance of Lp-PLA<sub>2</sub> Testing

Studies provide strong evidence, that the presence of Lp-PLA<sub>2</sub> is associated with an increased risk of cardiac death, myocardial infarction, acute coronary syndrome and ischemic stroke. Increased Lp-PLA<sub>2</sub> concentrations are found in vulnerable atherosclerotic plaques and, therefore, allow discrimination between morphologically identical stable and unstable plaques. Lp-PLA<sub>2</sub> testing is an excellent complement to angiography because it detects very small unstable plaques not visible by medical imaging. Unlike traditional atherosclerotic risk markers, Lp-PLA<sub>2</sub> is highly specific for vascular inflammation, has low biological variability, and plays a causative role in atherosclerotic plaque inflammation.

**The predictive value of traditional atherosclerotic risk markers is limited. Lp-PLA<sub>2</sub> is able to overcome these limitations and, therefore, represents a powerful tool to close the diagnostic gap.**

# DiaSys Lp-PLA<sub>2</sub> FS

## Features and Benefits

- Enzymatic test determining the activity of Lp-PLA<sub>2</sub>
- Liquid-stable, ready-to-use reagent
- Adaptable on any clinical chemistry analyzer
- For use in serum, EDTA and heparin plasma
- Wide measuring range up to 2000 U/L
- 2-point calibration with superior stability of 8 weeks
- No interferences by blood components like bilirubin, ascorbate, hemoglobin and others
- Excellent precision over the entire measuring range

## Precision

Intra-assay n = 20	Mean [U/L]	SD [U/L]	CV [%]
Sample 1	319	2.02	0.63
Sample 2	633	4.40	0.69
Sample 3	1113	7.98	0.72

Total precision CLSI n = 80	Mean [U/L]	SD [U/L]	CV [%]
Sample 1	314	4.80	1.53
Sample 2	625	10.0	1.61
Sample 3	1105	13.3	1.20

## Essential Role of Lp-PLA<sub>2</sub> in Risk Assessment

Since 2010, Lp-PLA<sub>2</sub> testing is recommended by four major guidelines for patients estimated to be at moderate or high cardiovascular disease risk by traditional risk assessment.

### 2012

- **AACE Guideline** for Management of Dyslipidemia and Prevention of Atherosclerosis
- **European Guideline** on cardiovascular disease prevention in clinical practice

### 2011

- **AHA/ASA Guideline** for the Primary Prevention of Stroke

### 2010

- **ACCF/AHA Guideline** for Assessment of Cardiovascular Risk in Asymptomatic Adults

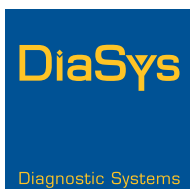
## Leading Technology in Fluid-Stable Reagents from DiaSys

- Global player in clinical chemistry tests with recognized R & D department
- Quality products made in Germany
- High quality raw materials from traceable origin
- Processes and resources certified according to ISO 13485, ISO 9001 and fulfilling highest internal quality standards
- Sustainable processes and products preserving the environment
- High performance ready-to-use reagents with minimized interferences, long shelf life, on-board stability and traceability to international references
- Perfectly matched fluid-stable reagents, calibrators and controls
- Premium service supply in technics, applications and after sales

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