NATURAL BIOACTIVE BASED
CHOLESTEROL MANAGEMENT

Cardiovascular disease (CVD) is a leading cause of mortality and is responsible for the deaths of 17 million people each year, approximately one-third of all global deaths annually. Higher concentrations of Low Density Lipoprotein (LDL) and lower concentrations of functional High Density Lipoprotein (HDL) have been found to be associated with cardiovascular disease as these promote atherosclerosis, leading to myocardial infarction and stroke. As a first line of intervention as well as during treatment conditions with cholesterol reducing drugs, changes to the lifestyle are recommended. In the recent past functional foods fortified with plant based bioactives and dietary supplements have found increasing focus as adjuvant in cholesterolmanagement.

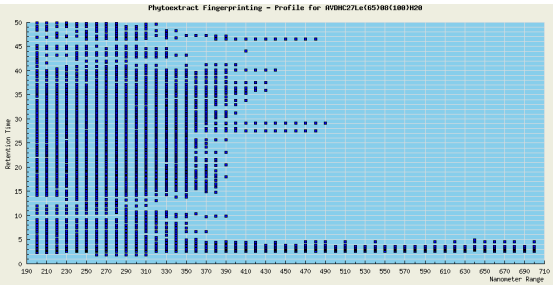


Fig 1: MetaGrid™ of ProVa™

Development of ProVa™ follows a strict QC protocol. ProVa is standardized by Avesthagen's proprietary Metabolite Fingerprinting technique, MetaGrid™ (Fig 1) and discovery engine ADePt™. This unique standardization method represents wide array of metabolites, which synergistically contribute to the safety and efficacy of ProVa™.

ProVa ™ is subjected and supported by systematic activity analysis using in-vitro, biochemical and cell-based assays ensuring the presence of bioactive component(s) in the final product

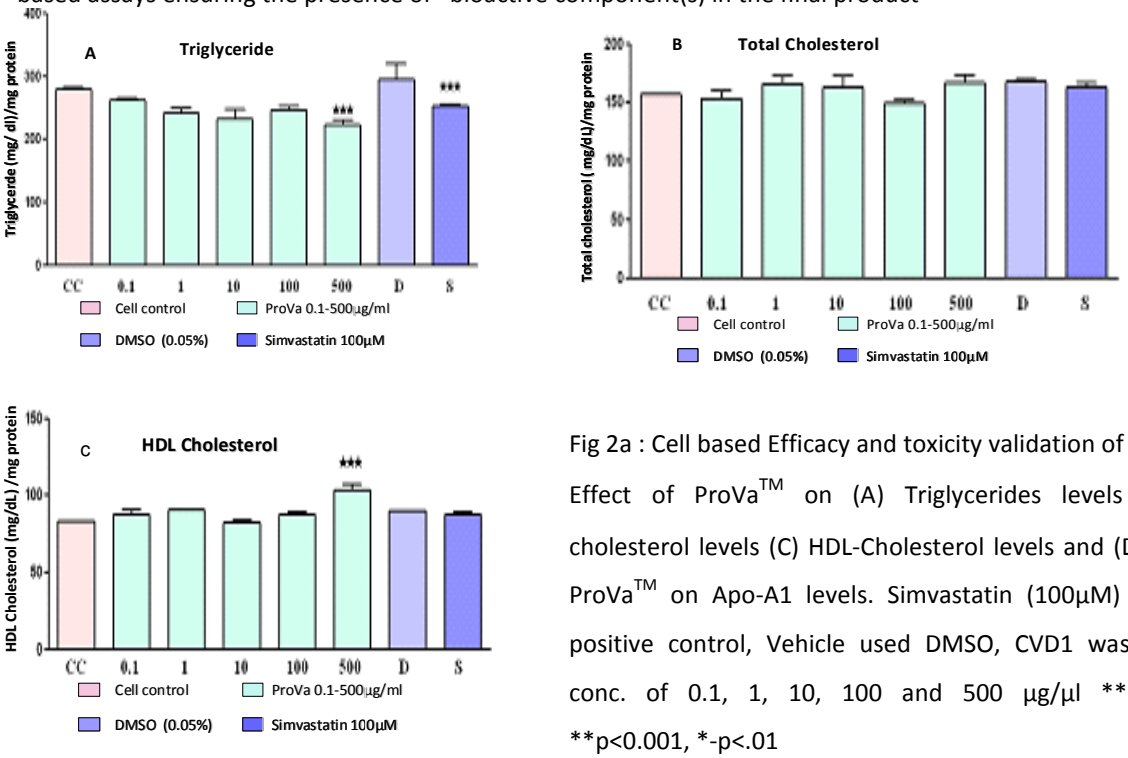
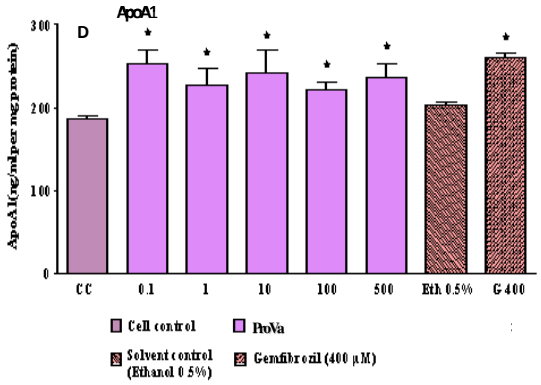


Fig 2a : Cell based Efficacy and toxicity validation of ProVa

Effect of ProVa™ on (A) Triglycerides levels (B) Total cholesterol levels (C) HDL-Cholesterol levels and (D) Effect of ProVa™ on Apo-A1 levels. Simvastatin (100µM) used as a positive control, Vehicle used DMSO, CVD1 was tested at conc. of 0.1, 1, 10, 100 and 500 µg/µl ***.p<0.0001 **p<0.001, *-p<.01



In cell based efficacy and toxicity validation in HepG2 cells, ProVa [TM] was non-toxic and effective in managing Dyslipidemia by reduction of total cholesterol and triglycerides levels as well as increase in HDL-cholesterol levels. ProVa[TM] showed statistically significant increase in apo lipo protein AI (Apo A1) levels, a key component of HDL molecule Fig 2).

ProVa [TM] is supported by systematic pre-clinical efficacy, safety and toxicity data from animal trials.

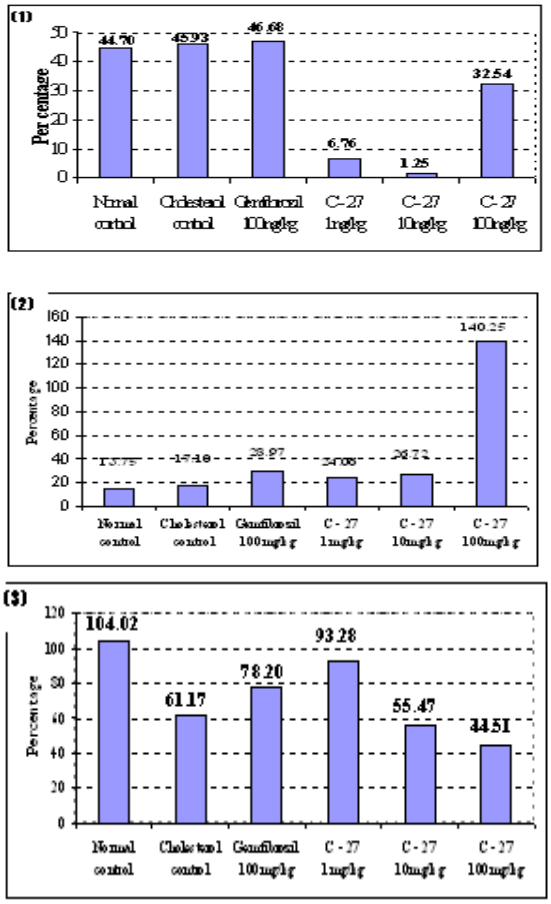


Fig 3: Hypolipidemic Activity of the extract ProVa as measured by its ability to raise plasma High-density lipoprotein cholesterol levels (1) and to inhibit other lipid metabolism markers such as Plasma Total Cholesterol (2) and Plasma Tryglycerides (3)

The cardio-protective action of extract ProVa[TM] on Hypercholesterolemic Guinea pigs was tested. Guinea pigs fed with the cholesterol rich diet showed increase in plasma concentration of Cholesterol, when compared normal control group.

ProVa[TM] at concentrations of 1, 10, and 100-mg/kg-body weight showed a percent variation of 6.76%, 1.25% and 32.54% in plasma total cholesterol respectively on day 29, where as cholesterol control group exhibited a higher variation of 45.93% when compared to their own baselines on day 0 (Fig 3).

ProVa[TM] at concentrations of 1, 10 and 100-mg/kg bd-wt showed a percent variation of 24.06%, 26.72% and 140.25% in plasma HDL-C respectively on day 29 when compared with day 0 base line, where as cholesterol control group exhibited only a variation of 17.10%.

Animal treated with ProVa[TM] at 1, 10 and 100-mg/kg body weight showed 93.28 %, 55.47% and 44.51 percent variation of plasma triglyceride respectively on day 29 when compared with day 0 base line, where as cholesterol control group exhibited a variation of 61.17 %.

Pre-clinical animal study on the extract ProVa[TM] at 100mg/kg body weight has proved its efficacy to raise plasma high-density lipoprotein, also has shown to reduce the total cholesterol and triglyceride levels in Guinea pigs fed with cholesterol rich diet.

ProVa[TM] is non-toxic at active concentrations and lowered plasma triglyceride, total cholesterol and increased HDL-Cholesterol at 100 mg/kg/day animal models dose in.

ProVa[TM] is manufactured in Avesthagen's award winning, large capacity production plant under strict GMP conditions. The plant is certified ISO 22000