Looking for collaborator and commercial partners

A low-cost, high-throughput native polyacrylamide gel electrophoresis (N-PAGE) protocol for lipoprotein sub-fractionation

Ratio of low density to high density lipoprotein concentration is critical for normal functioning of human body. Deviation in this ratio has been linked to various diseases, many of which are fatal if not diagnosed at early stages. For example, cardiovascular diseases (CVD) have been linked to the level of low density lipoprotein (LDL). Henceforth, detection of the lipoprotein subtractions is crucial for health of an individual. To date, methods like ultracentrifugation, nuclear magnetic resonance (NMR), high performance liquid chromatography (HPLC) and gradient gel electrophoresis (GGE) have been used for separation and identification of lipoprotein types and subtypes. However, these methods are expensive, time consuming and require specialized equipments and expertise. This paper aims to propose a low-cost, high-throughput native polyacrylamide gel electrophoresis (N-PAGE) based protocol for analysis of lipoproteins. Quality by Design (QbD) based approach has been utilized. The initial screening of parameters was followed by a fractionalfactorial design to optimize the protocol. The lipoprotein subtractions obtained by the optimized protocol were compared with the commercially available and commonly used Lipoprint® Lipoprotein Subfractions Testing System from Quantimetrix. The proposed method gave comparable results to those obtained with the commercial system. The proposed method is capable ofanalysis of up to forty different samples in two hours at a cost of approximately 2$/sample. This is an order of magnitude better than the present cost of 265$/sample when using the commercial system.

On offer:-

1. Technology
2. Technical expertise