

# **Blood Filtration Device – Feasibility & OEM Investment Overview**

## **Executive Summary**

This project introduces a disposable, multi-layer blood filtration device designed to replace centrifugation in laboratory workflows. The solution enables rapid plasma or serum separation in seconds, without requiring equipment, electricity, or complex procedures.

## **Problem Statement**

Current blood separation methods rely heavily on centrifugation, which requires expensive equipment, trained personnel, maintenance, and time (typically 10–15 minutes per sample). This creates inefficiencies in high-volume laboratories and limits accessibility in remote or emergency settings.

## **Proposed Solution**

A compact, disposable filtration device using a multi-layer membrane system. The design enables direct separation of plasma or serum from whole blood through optimized surface area and flow dynamics.

## **Technology Overview**

The device consists of multiple functional layers including prefiltration, red blood cell retention, white blood cell filtration, and final plasma collection. The design is compatible with standard medical-grade materials and scalable manufacturing techniques.

## **Market Opportunity**

The GCC region alone performs approximately 80 million blood tests annually. Global demand exceeds 100 million tests per year, representing a significant recurring consumables market.

## **Business Model**

The product is a single-use disposable filter targeting a unit price of  $\leq \$1$ . The model is based on high-volume recurring demand across hospitals, diagnostic laboratories, and clinics.

## **Revenue Potential (Example)**

Assuming a conservative 5% market penetration of a 100 million unit market: 5 million units annually. At \$1 per unit, this represents approximately \$5 million in annual revenue.

## **Manufacturing Feasibility (OEM Perspective)**

The device is designed for scalable OEM production using existing technologies such as membrane fabrication and plastic injection molding. No fundamentally new manufacturing processes are required, reducing development risk.

## **Applications**

Hospitals, diagnostic laboratories, emergency units, point-of-care settings, and remote healthcare facilities.

## **Partnership Opportunity**

We are seeking OEM manufacturing partners for production and strategic investors to support scaling, regulatory approvals, and market entry across GCC and global markets.

## **Conclusion**

This solution offers a practical, scalable, and cost-effective alternative to centrifugation, with strong commercial potential and global applicability.