

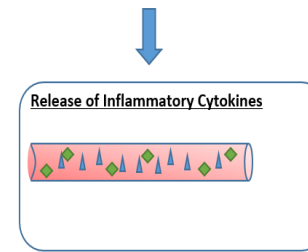
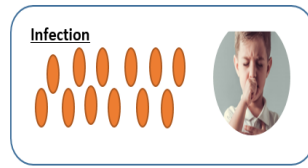
Project 35- Development of Magnetic Cell Sorting Device for Enumeration of Blood Cells



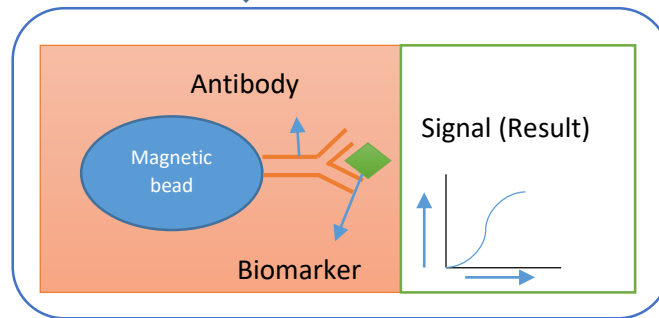
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Magnetic Cell Sorting Device

The clinical diagnosis of infection has been a huge challenge due to time and cost associated with the same. This has led to prescribing of antimicrobials based on the physical symptoms without waiting for the diagnostic test results. Bacterial and Viral infection have many common symptoms due to which they are often mistaken and misunderstood. According to a recent study, in around 40-60% of cases where antimicrobials are prescribed, the infection is actually not bacterial. This over-prescription of antibiotics has majorly led to Anti-Microbial Resistance (AMR).

There's a need of an intense literature review for the search of a biomarker that correlates with the bacterial infection for rapid, and affordable diagnosis of Bacterial Infection. This project will evaluate the expression of cytokine markers like IL-4, TNF Alpha etc. and surface proteins on the blood cells like Neutrophils, monocytes and lymphocytes. Currently, we mostly enumerate these biomarkers using flow cytometers, which are time consuming and expensive. We would hence like to investigate the biomarkers expression profile under different disease conditions and develop an immunological assay.