## MS04-019

# Acoustophoresis in lifescience applications

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Acoustophoresis in microfludic systems have in recent years become a viable strategy for advanced cell manipulation, including cell separation, buffer switching, valving, affinity bead extraction, cell interaction studies. Cells undergoing acoustophoresis experience a low mechanical stress, which opens the route to a wide range of clinical applications. Free Flow Acoustophoresis, FFA, utilizes the migration speed of different cell types in the acoustic field as the basis for separation will be described. This enables e.g. separation of erythrocytes, leukocytes and thrombocytes. More recently FFA has been developed to target clinical use where purification of circulating tumor cells (CTC) from white blood cell fractions is accomplished. Affinity Acoustophoresis enables purification of components from complex samples and examples on the extraction of bacteriophages from a phage library will be given. Acoustic standing wave resonators can also be designed in microfluidic systems to retain/trap and enrich cellular, bacterial or other bioparticle species prior to down stream diagnostic

**Keywords:** ultrasonic standing wave;acoustophoresis;microfluidics;cell separation;

**Preferred Presentation Type:** lecture