

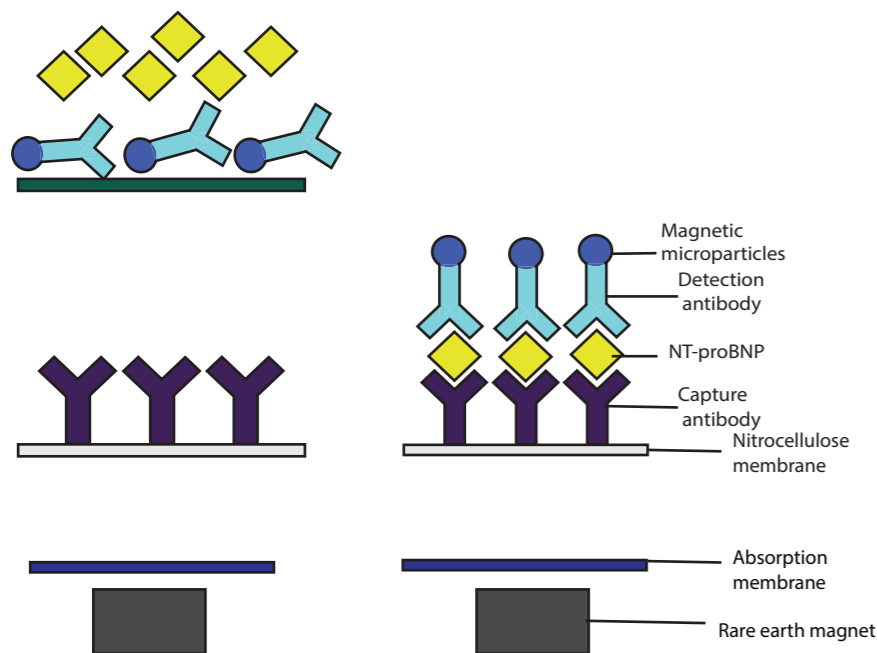


MagnUs



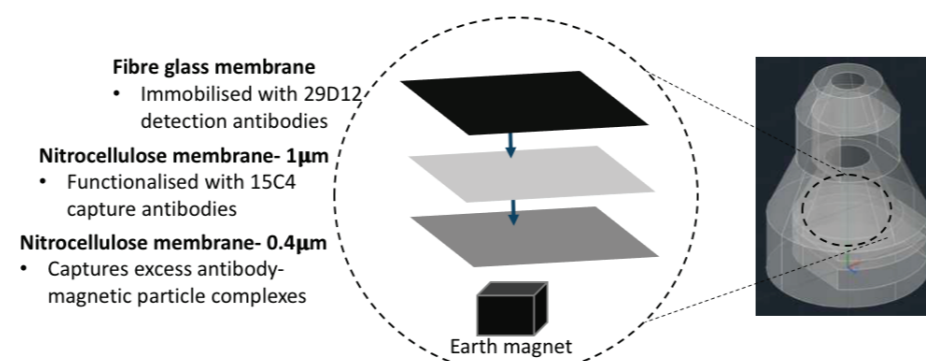
Biosensor to detect NT-proBNP molecule, a heart failure marker released in the blood

Sandwich Assay

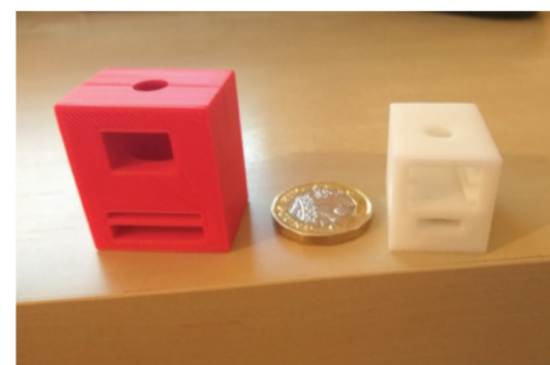


The detection antibodies are biotinylated with magnetic nanoparticles. The detection antibodies bind to NT-proBNP molecules present in the sample. The capture antibodies will bind to another epitope on the NT-proBNP. The unbound detection antibodies will pass through the filter as they are attracted by the rare earth magnet at the bottom of the prototype.

Prototype



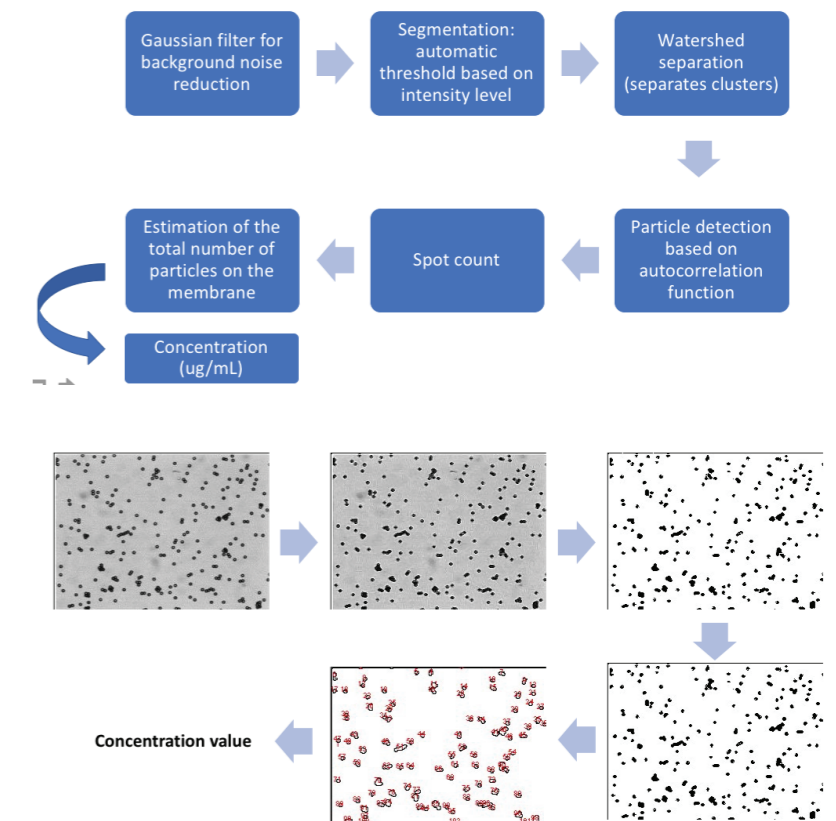
The sample is placed in the inlet of the design where it will come in contact with the three membranes.



AutoCAD designed prototype printed with PLA plastic, where the sample is inserted and the sandwich assay is formed.

Data presentation

Concentration estimation using image processing



ImageJ was used to analyse the image obtained from the optical microscope. In order to make the device portable and more user friendly, we changed to a USB microscope

Imperial College London Team:

Aoife Keane, Maria Medeiros, Qien Li, Ignacio Medina Fernandez, Ekaterina Pchelintseva, David Garcia, Vanessa Ho, Caoimhe Canavan, Akashaditya Das, Amparo Guemes Gonzalez