**Transcript**

***Dr Suresh Mathivanan – Early diagnosis of cancer***

My research laboratory in the Biochemistry Department is basically interested in exosomes. Exosomes are small vesicles or packages that are released by normal and cancer cells. So the beauty about these vesicles is they contain protein and RNA which is reflected off the cell that it is coming from. Basically, if you look at a cancer cell the exosomes that they’re secreting is different as opposed to a normal cell. So our research hypothesis is these exosomes are basically seen in blood of normal and patient samples. So we are interested in cancer and our research hypothesis in this case. So if we can monitor exosomes in the blood of a patient sample we can basically diagnose the cancer patient early or we can basically look at the progress in terms of the cancer patients when they are undergoing therapy.

In our research what we’re trying to do is basically using a large panel of patient blood samples and we are profiling the exosomal RNA and protein from them. So what we are trying to achieve out of this is to identify some signature of RNA or protein in various stages of cancer. For example, we want to have a definitive pattern of a signature of RNA or protein in advanced disease; a patient where the cancer has spread to a distant organ as opposed to a normal patient, a normal patient, or even a patient who is just developing a cancer. So, when we have a definitive catalogue like that so we can look at it in terms of the clinical settings and we can translate that and identify or diagnose patients.

So the biggest problem as of cancer in terms of the community is like by the time a person is diagnosed with cancer they already in the advanced stages so it’s basically either we have to treat the cancer or alternatively we can look to diagnose it early so we can treat them early and then the survival of those patients are really high. So that’s what we are trying to achieve by doing our research. So if we are successful in our project what we are going to do with this is we can translate those proteins and RNAs and we can design some kits, diagnostic kits, which can be given to hospitals and doctors can use that routinely that people coming and all they need is some blood or maybe urine as well and this can be done non-invasively. And the beauty about this is, like say if you’re going to diagnose, or even if you are going into later stages there’s no need of any biopsy or no need of any invasive technologies. This is a non-invasive technology. When I say non-invasive it means like you are just retrieving the blood or the urine which is not as painful as some of the other things that we are doing in the clinic as we speak but it’s really, really promising. So, and by achieving this what we are hoping to do is increase the patient survival rate and at least save one life.