**Transcript**

***Dr Marc Kvansakul – Treating cancer by the backdoor – a new take on chemotherapy***

Our research hypothesis is really that particular infections by viruses have a long term effect in that they lead to the development of particular cancers and so, we believe this to be the case because of the way how viruses ensure that when they infect humans, for example, how they make sure that they can actually stay around in the human for a long time, so, such as like in chronic infections. An example, for example herpes viruses. All our cells have a finite lifetime and when the time ends for a cell then what they do is they activate a suicide program. And when the suicide program is triggered the cell will go and reasonably peacefully kill itself for the benefit of all the other cells and without any major mess. And what viruses do is they hijack this process to make sure that no cell dies too early before the virus has actually reproduced itself and then taken over the host. And, we believe that if this happens in chronically infected cells where lots of viruses are around. This will not allow cells that are supposed to die to actually go and kill themselves off and this is really what, if you think about it molecularly, is what defines a tumour. A tumour can’t die. The cells keep hanging around and we think this is because the chronically present virus stops tumour cells from dying too early and therefore we get the cancer.

The key outcome we hope to achieve is really to develop very targeted therapies for some of the rarer tumours that people can catch and what my lab focusses on is Burkitt’s Lymphoma which is a somewhat rarer tumour that develops in the blood compartment. And so, what we really hope to do is, we aim to target the viral protein that we think is responsible for, or at least plays a major role in the development of the tumour. And if we can knock out this viral protein we can hopefully force the virus, or force the tumour to go and slowly die off. And, if we can achieve this by just targeting the viral protein we hopefully can minimise the effect on normal healthy cells around it because the healthy cells should not have the viral protein therefore there’s very little side effects. Things that you see with current chemotherapeutic drugs. Things like loss of hair, problems with your bowels and things like that.

We hope that there’ll be a long term benefit to the community in the sense that for certain more challenging tumours that people can have these days we can have very targeted therapies that have low levels of side effects and so that hopefully means that it’s not quite so traumatic anymore when you have to be treated for these tumours and that people have, will enjoy a much higher quality of life during the therapy and hopefully also be successfully treated.