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*BSc (Hons) Pharmacology*

Utilising clinical pharmacology studies to optimise analysis of blood samples in childhood cancer patients

The Northern Institute for Cancer Research (NICR) is currently developing a method of simultaneously quantifying multiple anticancer drugs from one blood sample using one universal method. If implemented, this could save a large amount of time and expense for the NHS and streamline therapeutic drug monitoring (TDM) for cancer patients. The method relies on High-Performance Liquid Chromatography (HPLC) to separate the components in a sample, in tandem with Mass Spectrometry (MS) which uses molecular weight to quantify each individual fraction.

For my project, I selected five Tyrosine Kinase inhibitors: Bosutinib, Dasatinib, Imatinib, Nilotinib and Ponatinib. The full method would be capable of analysing up to 40 drugs, but all need testing to assess how they behave when in combination. My work focused on five of these, with the results forming part of the overall combination method.

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