

High Value Isotope Synthesis

Dr Sean Bew

Aziridines are highly versatile intermediates used to generate alternative sought after molecules e.g. amino acids. These core building blocks have a plethora of uses in the medical, pharmaceutical, agrochemical, biotechnology, high technology, security and materials. Dr Sean Bew has developed a novel method of synthesising high value aziridines labelled with isotopes e.g. nitrogen, carbon and deuterium which are important for tracing how these molecules are used.

Current methods to incorporate multiple isotopes require reaction processes that are not only cumbersome, expensive and time consuming, but also cannot guarantee that the isotopes will incorporate at the desired location. The unique features of the labelling approach developed by Dr Bew are: i) the locations of the isotopes within the aziridines can be precisely controlled from the outset to the end, and (ii) single or multiple, identical or diverse isotopes can be placed, at will, in different locations within the aziridine in a single reaction.

The NRP Translational Funding will enable Dr Bew to develop three 'demonstration isotope syntheses' for further evaluation by industry. It will also support a consultant to formulate a commercialisation strategy with a business plan. The consultant will then undertake business development, converting initial leads into commercial opportunities.