



Contribution ID : 133

Type : Oral

## Using the Australian Synchrotron – A clinical perspective

*Thursday, 26 November 2015 11:00 (30)*

While synchrotron science is well beyond most clinicians, our research suggests it will become an important tool in future clinical research. Although there is a lot of science behind the clinical and pharmacological understanding of drug products formulation, what actually happens inside the tablet before and during the administration process is mostly empirical and sometimes “mystical”.

The Australian Synchrotron has progressed understanding of the science of tablet formulation with benefits in formulation development, enabling us to understand the three dimensional structure of various tablet matrices – something that has never been a factor for consideration – allowing better control of drug release as a function of excipients and delivery route. While drug release from tablet matrices, for example, is relatively simple and studied in a standard dissolution apparatus, release rate is traditionally varied by combination of binders, fillers, compression and interaction with specific membranes.

This knowledge of how the tablet works and the effects various components have on each other and on biological transport has also provided significant protection of our intellectual property. As a result, the science of future tablet formulation will more likely involve the synchrotron.

A brief review will be shared on how our multi-disciplinary team collaborated to solve a clinical problem and, importantly, attracted support from state and federal government grants.

### Keywords

**Primary author(s) :** Dr KANNAR, David (Monash University)

**Presenter(s) :** Dr CULLEN, John (Aspen Australia)

**Session Classification :** Collaborating with Industry - the perils and the pleasure

**Track Classification :** Biological Systems