‘Build-A-Release’-Achieving Polymer Based Disintegrating Tablets

Sarahjane Wood [1] & Gavin Halbert[1,2]

[1]EPSRC Doctoral Training Centre for Innovative Manufacturing in Continuous Manufacturing and Crystallisation, University of Strathclyde, Glasgow, UK

[2]The Cancer Research UK Formulation Unit, the Strathclyde Institute of Pharmacy and Biomedical Sciences, the University of Strathclyde, Glasgow, UK

sarahjane.wood@strath.ac.uk

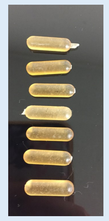
Overview:

Powder blends

Hot Melt Extrusion

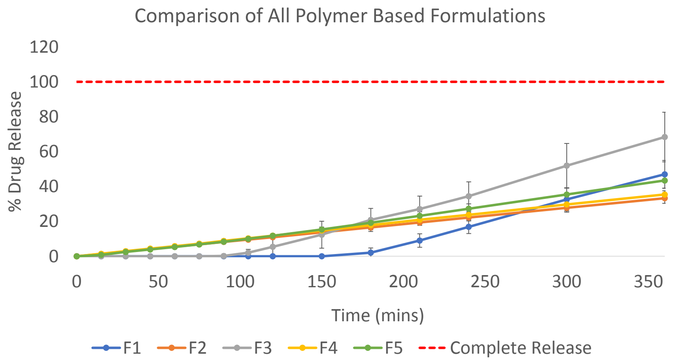
Extrudate

Injection Moulding



Dosage forms

The problem:



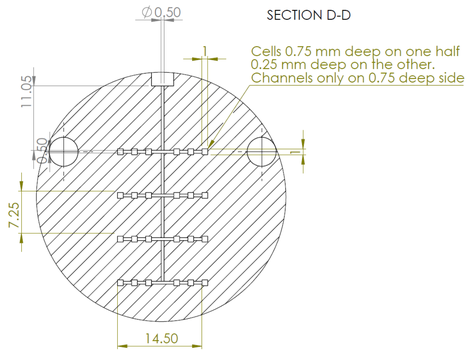
	API (%)	Disintegrant (%)	Polymer (%)
F1	1	0	99
F2	20	0	80
F3	1	10	89
F4	20	10	70
F5	10.5	5	84.5

Polymers slowly erode, hindering drug release.

Don’t disintegrate like traditional disintegrating tablets

Using BCS Class II drugs excipients tested have only slightly improved drug release at low concentrations only

The solution:



Create 1mm³ ‘lego bricks’ of desired formulation using specially designed mould

Bind together to create dosage form

Binder dissolves in dissolution medium freeing the cubes i.e. disintegration, increasing surface area and overall dissolution rate

Specific drug release profiles can be achieved by mix and matching cubes of different formulations in the dosage form