High-Throughput Experimental Applications in Pharmaceutical Development

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ABSTRACT

High-throughput experimental techniques were adapted to drug research over 10 years ago, and are now a standard part of pharmaceutical research. These new methodologies have led to an explosion of promising drug candidates. However, because the complexity and hydrophobicity of these new molecules is increasing, pharmaceutical firms are faced with the challenge of managing a larger number of candidates that are also more difficult to formulate by traditional means. Standard approaches to improving the bioavailability or poorly soluble drugs is to reduce particle size by a number of standard methods (such as milling or spray drying), or change the thermodynamics of dissolution by using the drug in a non-crystalline form.

TransForm Pharmaceuticals has adapted the methodologies of high throughput experimentation to downstream pharmaceutical development; specifically, combinatorial exploration of crystalline diversity and formulation development. The talk will introduce the challenges associated with drug bioavailability, some general engineering methods to improve bioavailability, and the benefits of high throughput experimentation in crystal form and formulation development.