

“Fast Fun Excipient Selection with Formulating For Efficacy Software”

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Abstract: Fast, come on. Fun, really? Proper excipient selection can be as important as API development and is often a painstaking exercise. If a drug active is not fully dissolved, that which is undissolved cannot diffuse (solids diffuse 10,000 times more slowly than liquids.) Once dissolved, a driving force should be applied by bringing the API to the edge of solubility. Minding the gap between active, excipient, and the *stratum corneum* (SC) barrier can aid in delivery as well. Checking one’s work prior to going ‘live’ via Franz diffusion cell studies takes whatever **fast** and **fun** might have been available from the exercise with the associated concerns about substrate variability, quantitative analytical method development and analysis, and...one 24-hour diffusion study can eat up a few days.

The Formulating for Efficacy® Software quickly assesses the physical/chemical properties of an API with only a linear expression of the chemical structure (SMILES) input. Equally fast and fun is to see the predicted solubility of the API in a full range of excipients. Move swiftly on to building an excipient system that will bridge the gap between API and SC while inducing a driving force for the API to transition from formulation to the skin. Top off the fun with performing a simulated 24-hour Franz cell study in 24 seconds, with the bonus of being able to look at time slices in hour or even minute intervals. Fast fun excipient selection with Formulating for Efficacy® Software.