This Webinar was presented by Scott McDonald, Lhasa Limited, and Matt Segall on 18th June 2014.

It has been estimated that toxicity accounts for approximately 30% of expensive, late stage failures in development. Therefore, identifying and prioritising chemistries with a lower risk of toxicity, as early as possible in the drug discovery process, would help to address the high attrition rate in pharmaceutical R&D. We will describe how expert knowledge-based prediction of toxicity can alert chemists if their proposed compounds are likely to have an increased risk of causing toxicity, based on precedence for similar compounds where experimental data are available.

However, an alert for potential risk should be given appropriate weight in the selection of compounds. It is important to balance potential opportunities against the risk of late stage failures caused by toxicity; an alert may not be sufficient reason to 'kill' a compound or chemical series. If a series achieves good outcomes for other requirements, it may be appropriate to progress selected compounds and generate experimental data to confirm or refute a prediction of potential toxicity. We will discuss how multi-parameter optimisation approaches can be used to balance the potential for toxicity with other properties required in a high quality candidate drug, such as potency and appropriate absorption, distribution, metabolism and elimination (ADME).

Furthermore, it may be possible to modify a compound to reduce its likelihood of toxicity and we will describe how information on the region of a compound that triggers a toxicity alert can be interactively visualised to guide this redesign.

A copy of the slides can be downloaded here .

To hear the narration, please increase your speaker volume.