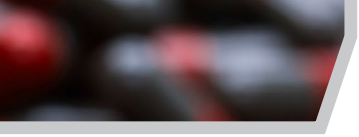
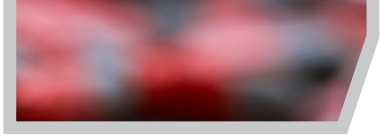


ThermoFisher SCIENTIFIC


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Vi

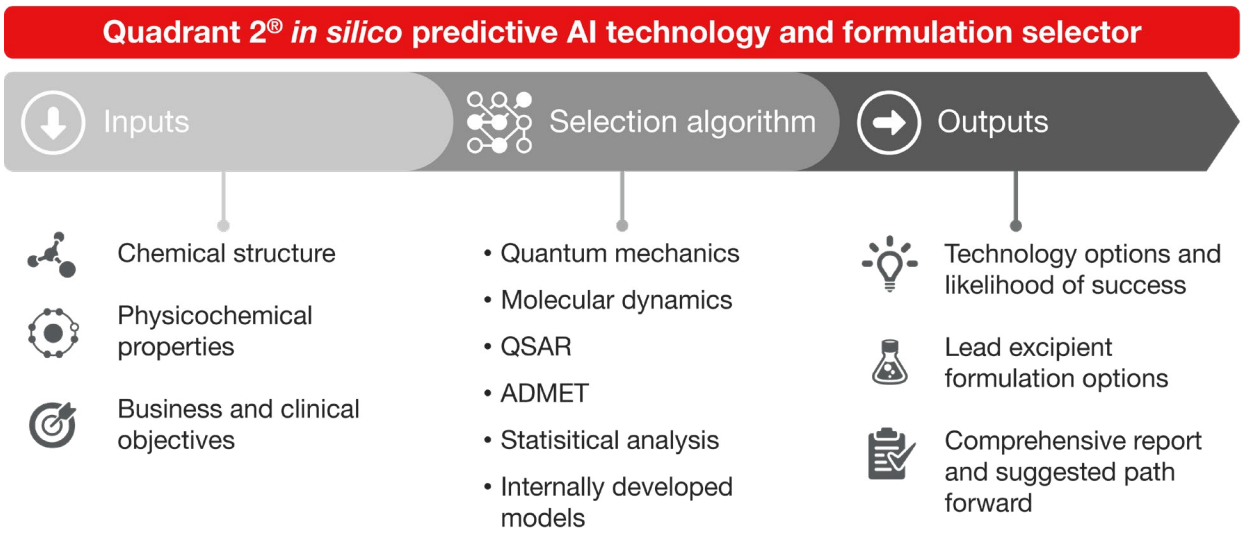
Vision

Bioavailability enhancement technologies for poorly soluble molecules

Vision is the missing element in solving solubility challenges

Solubility of small molecules presents an increasing threat to molecule advancement through the drug development pipeline, as a growing majority of pipeline candidates are poorly soluble. If a drug cannot be dissolved and enter the bloodstream through the gastrointestinal tract, it will not reach systemic circulation and be available to provide it's intended therapeutic effect. Thus, to solve bioavailability challenges, solubility must first be addressed. There are many solubility enhancement technologies and formulation options available to developers, and the choices can be overwhelming.

Predictive computational modeling using Patheon's Quadrant 2® platform can help you avoid months and even years of formulation setbacks. You provide your API's chemical structure, any known physiochemical properties, and business and clinical objectives, and the Quadrant 2 platform will predict your molecule's Developability Classification System (DCS) quadrant, and choose the solubility enhancement technology and excipient combinations that are most likely to succeed. This critical foresight can help provide vision into future challenges so you can understand your molecules potential solubility challenges and take action early.



Quadrant 2® leverages AI/ML tools to identify solubility enhancement technologies for your molecule

Using your molecule's unique structure and physiochemical properties along with your business and clinical objectives, Quadrant 2 will categorize multiple solubility enhancement technologies by likelihood of success.

Click on the solubility enhancement technology boxes to learn more about how they help improve solubility.

Spray drying	Hot melt extrusion (HME)	Lipid formulations	Solid-state chemistry*

Click on the grey solubility enhancement technology boxes above to learn more about how they help improve solubility.

*While solid-state chemistry does help enhance solubility, it is not a technology identified by Quadrant 2.

Computational modeling backed by expertise can solve your molecule's solubility challenges

Small molecule solubility presents an increasing threat to molecule advancement through the drug development pipeline, as a growing majority of pipeline candidates are poorly soluble. There are many solubility enhancement technologies and formulation options available to developers, and the choices can be overwhelming. Working with a CDMO that can help provide vision and foresight into future challenges so you can take action now could be the critical missing element in your molecule's success on the path to market.

Thermo Fisher Scientific's proprietary AI/ML Quadrant 2 computational modeling platform partnered with extensive experience and deep expertise in drug development and commercial manufacturing on a global scale ensure your molecule will successfully progress to the next milestone, whether clinical or commercial.

Development services

Depth and breadth of expertise for OSD development and scale up

350+
years

of project management experience to navigate your product lifecycle challenges

Manufacturing services

Zero defects mindset delivers successful OSD manufacturing and support

300+
projects

moved successfully to the next development stage during the last 5 years

255+
tech transfers

for products moving from late phase to commercial EVERY YEAR

The power of a global network

Global network of experts available throughout your molecule's entire lifecycle

128
NDAs since 2011

Leading the industry in number of FDA approvals

Find the missing element to resolving your molecule's solubility challenges with Quadrant 2 computational modeling and innovative technologies.

References:

1. Mendonsa, N. et al. (2020). Manufacturing strategies to develop amorphous solid dispersions: An overview. Journal of Drug Delivery Science and Technology. 55:101459. https://doi.org/10.1016/j.jddst.2019.101459
2. Porter. C. et al. (2007). Lipids and lipid-based formulations: optimizing the oral delivery of lipophilic drugs. Nature Reviews Drug Discovery. 6:231-248. https://doi.org/10.1038/nrd2197

+1 919 226 3200 ● thermofisher.com/patheon ● pharmaservices@thermofisher.com

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