

P-glycoprotein Transport

Substrate Recognition, Efflux, and Inhibition of P-gp/ABCB1



NEZU
Biotech GmbH





Dear Client,

first and foremost, thanks for downloading this free resource. All graphics in this report are predictions made by our AI systems. They show the profile of this ADMET endpoint for thousands of marketed drugs. We divided it by indication, and as you can see, it changes a lot from one category to another. Therefore, try to find the closest indication to the compounds you are currently developing.

P-glycoprotein substrate asks whether P-glycoprotein recognizes a compound and pumps it out of cells. **P-glycoprotein inhibition** asks whether the compound blocks this pump and affects the transport of other molecules. These are separate properties. A compound can be a substrate, an inhibitor, both, or neither.

P-glycoprotein, also called P-gp or ABCB1, is commonly studied in polarized cell monolayers. Researchers use Caco-2 cells or Madin-Darby canine kidney cells engineered to express human ABCB1. For substrate testing, the compound is added to either side of the monolayer. Its transport is measured in the both directions, usually by liquid chromatography-tandem mass spectrometry.

For inhibition testing, researchers measure the bidirectional transport of a known P-gp probe substrate, such as digoxin, across the same type of monolayer. The test compound is added at increasing concentrations. Reduced efflux indicates inhibition.

P-gp limits absorption from the intestine, restricts entry into the brain and placenta, and supports biliary and renal elimination. Strong substrate transport reduces intracellular exposure where P-gp is active. **This may be undesirable for oral or central nervous system drugs, but useful when limiting brain or fetal exposure is intended.** P-gp inhibition increases the exposure of co-administered substrates and creates drug-drug interaction risk when inhibitor concentrations at the relevant tissue are sufficient.

We generated these insights using advanced AI systems designed to analyze complex biotech data and highlight potential trends. While we strive for accuracy, AI models can occasionally make mistakes or miss context, so please treat these predictions as informative guidelines rather than absolute facts.

This report is provided for general informational and educational purposes only, not for medical diagnosis, treatment decisions, or financial advice. Because individual circumstances and data can vary, we cannot be held responsible for any decisions made or losses incurred based on these predictions.



Now that we got this out of the way, we genuinely hope these results are useful for your research.

Sincerely,

Your friends at Nezu Biotech GmbH.

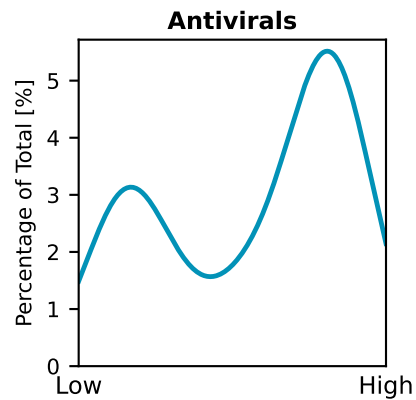
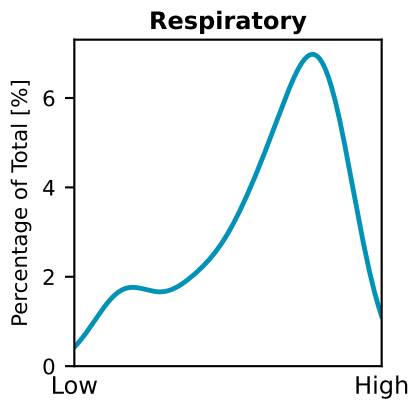
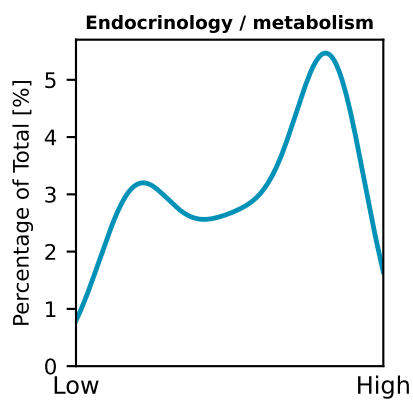
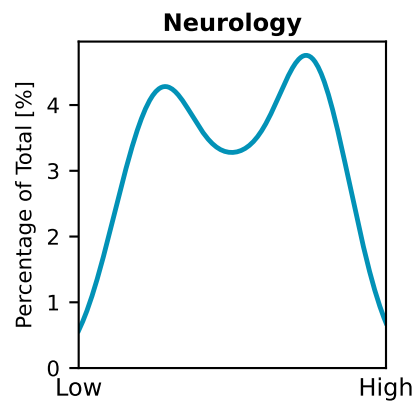
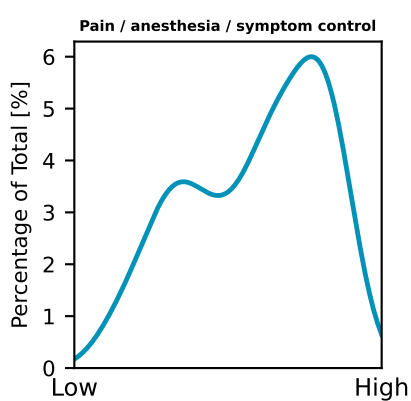
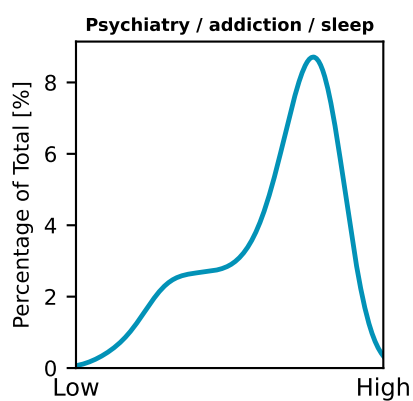
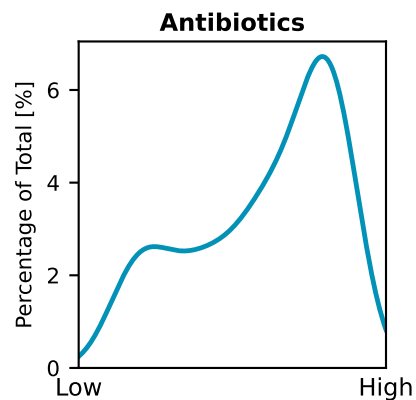
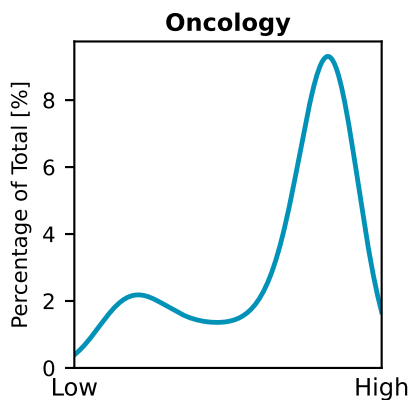
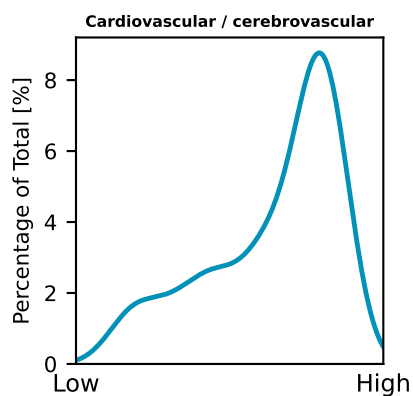
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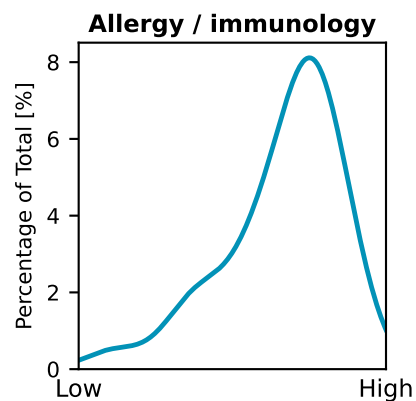
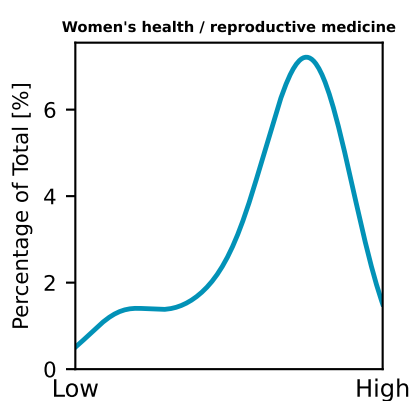
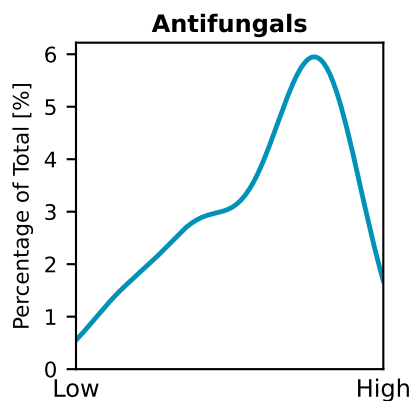
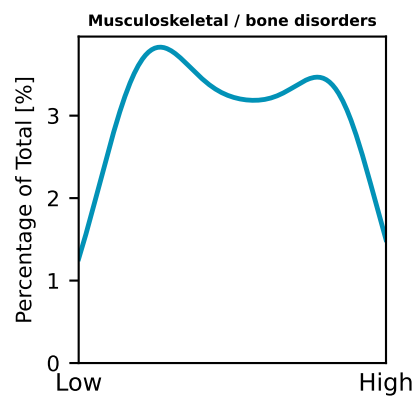
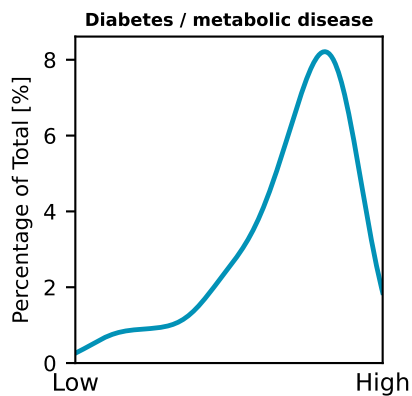
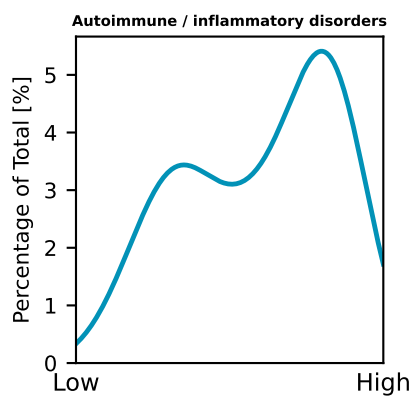
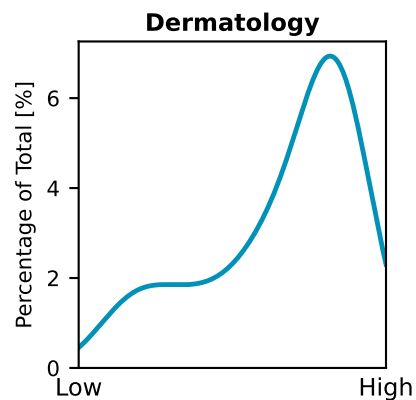
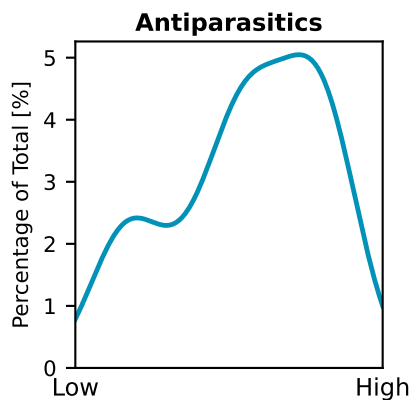
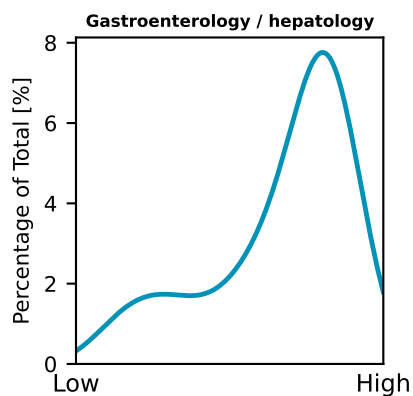
PgP Substrate



— Derived from thousands of marketed drugs



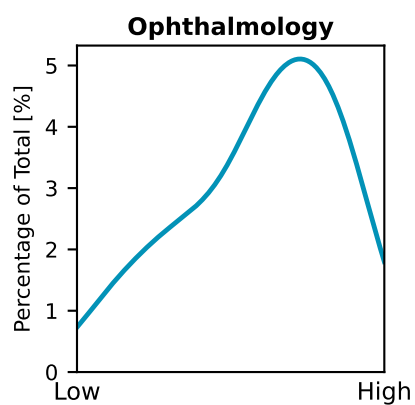
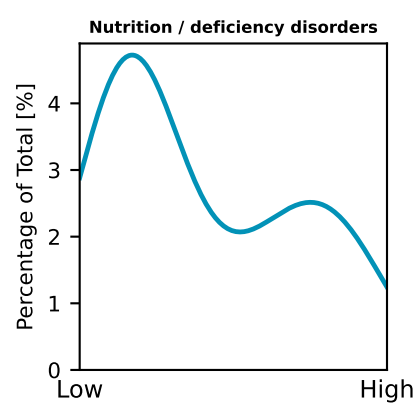
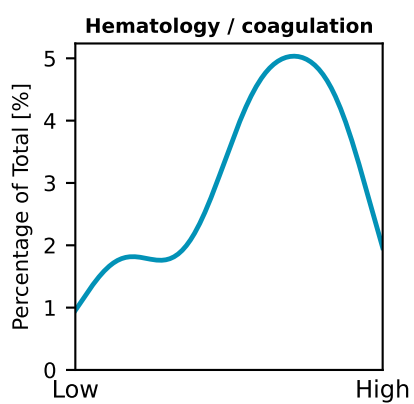
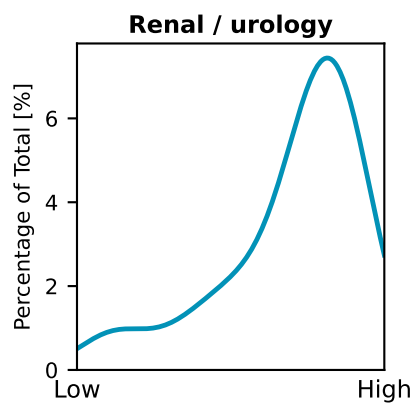
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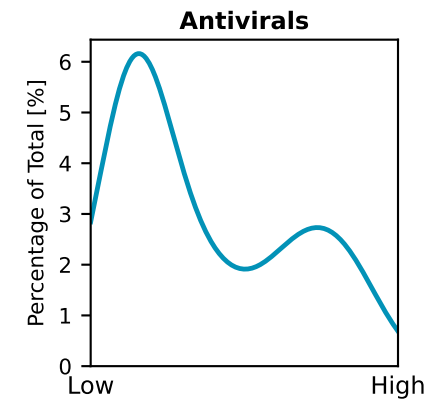
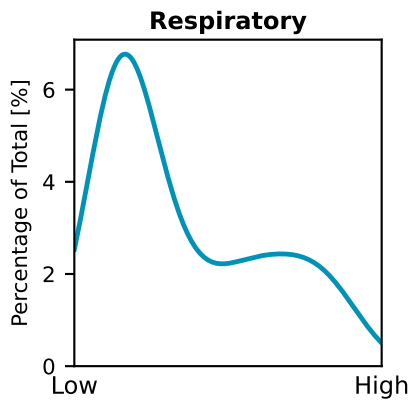
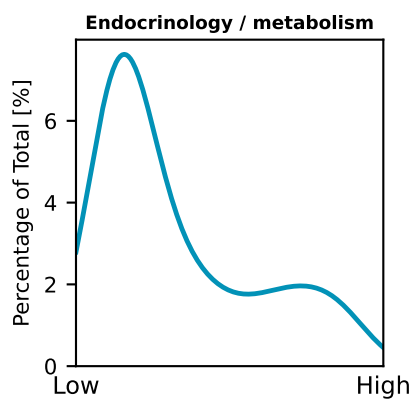
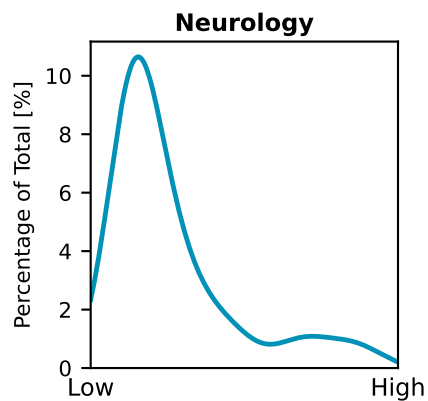
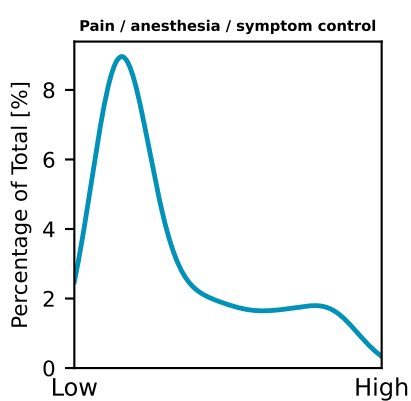
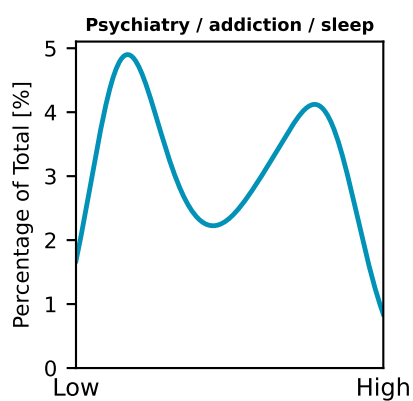
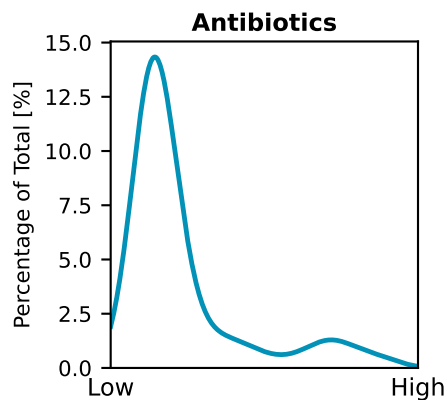
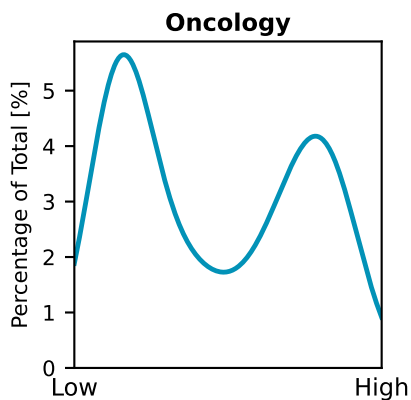
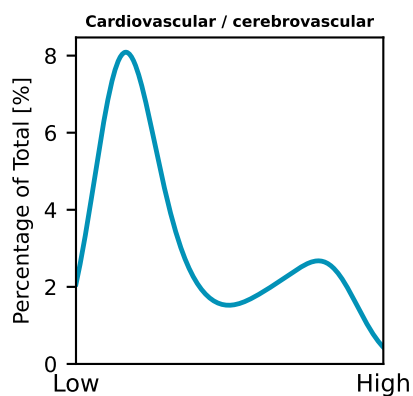
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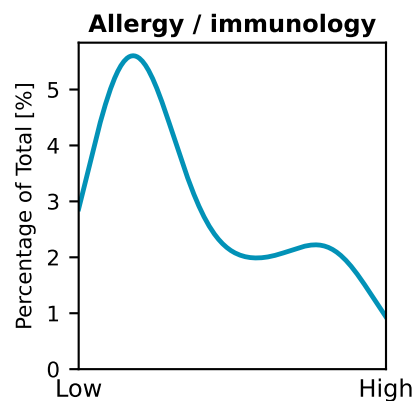
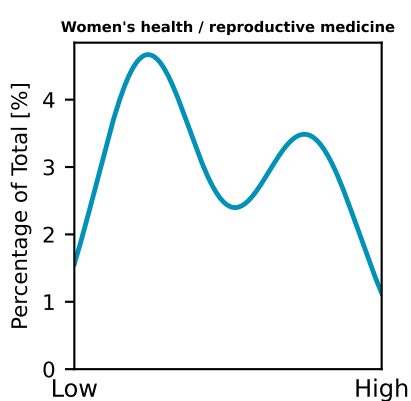
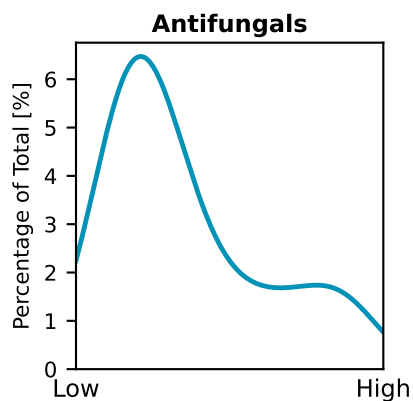
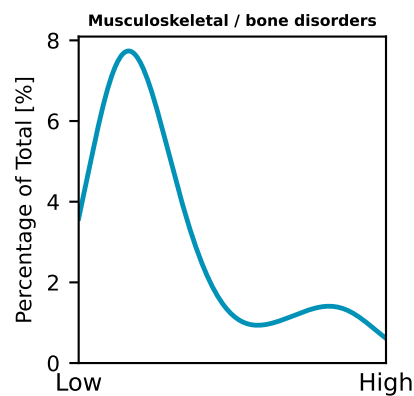
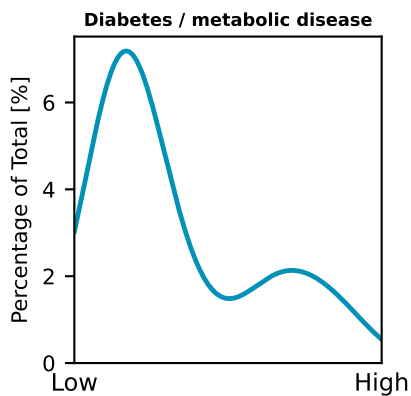
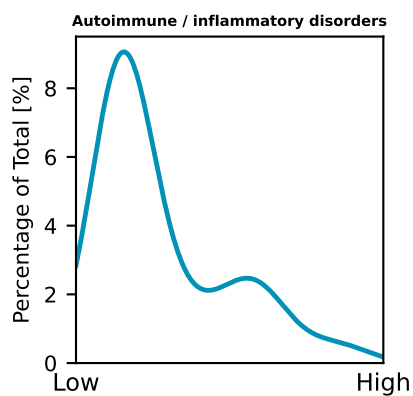
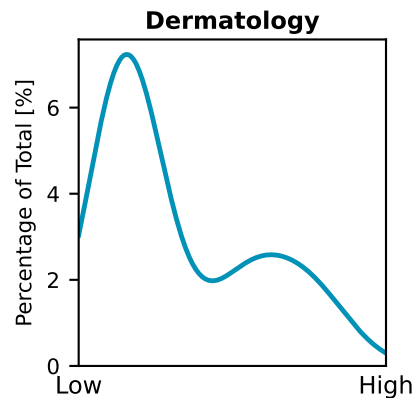
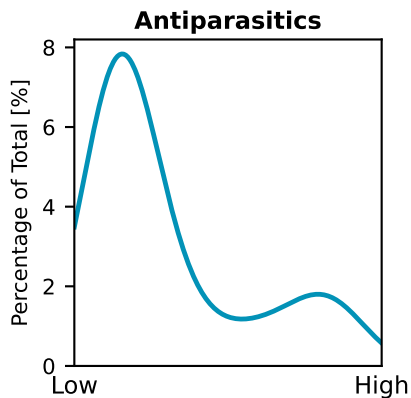
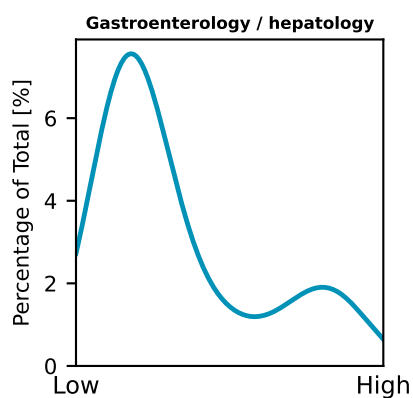
PgP Inhibitor



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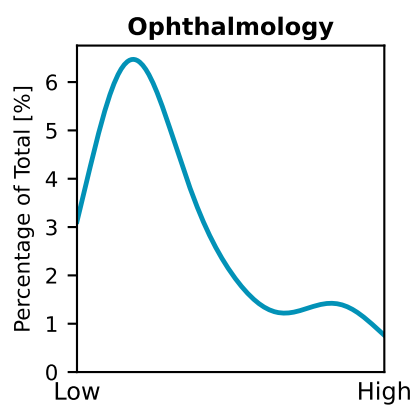
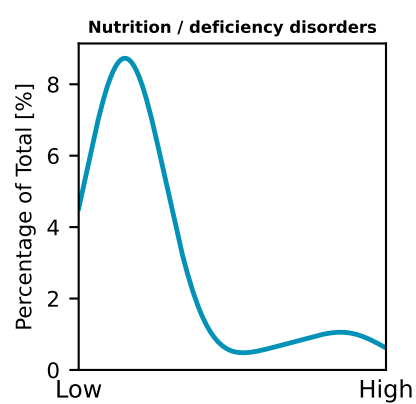
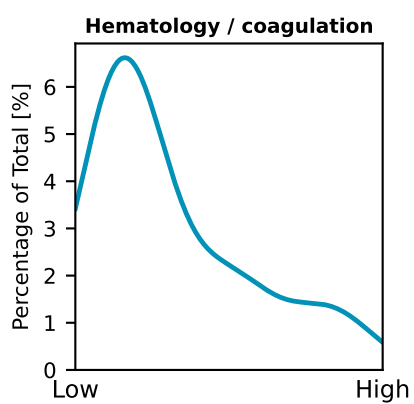
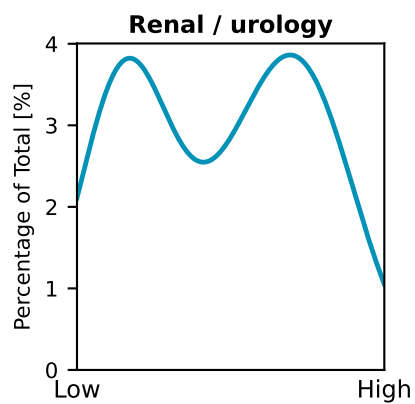
PgP Inhibitor



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PgP Inhibitor



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