

MDCK Permeability

Measuring epithelial transport and apparent membrane permeability in vitro



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.

MDCK apparent permeability asks how quickly a compound crosses a tightly connected layer of epithelial cells. The result helps researchers check whether a molecule can move through cellular barriers. Adequate permeability supports intestinal absorption or access to a target tissue. Excessive permeability is not always desirable, especially when exposure to the brain or another protected tissue must be limited.

The assay uses Madin-Darby canine kidney (MDCK) cells. Researchers grow the cells on a porous membrane until they form a confluent, polarized monolayer with distinct apical and basolateral sides. The test compound is added to one side. Samples are collected from the opposite side over a defined period, often at physiological temperature and near-neutral pH. Compound concentrations are usually measured by liquid chromatography with tandem mass spectrometry.

The **apparent permeability coefficient**, or **Papp**, is calculated from the rate at which compound appears in the receiver compartment, divided by the monolayer surface area and the initial donor concentration.

A high Papp indicates rapid passage under the tested conditions. This often supports absorption or tissue penetration, but it can also increase unwanted distribution. **A low Papp indicates slow passage and can limit exposure.** However, Papp is an assay-dependent measurement rather than pure passive membrane permeability. It also reflects ionization, aqueous boundary layers, paracellular transport, filter resistance, nonspecific binding, transporter activity, monolayer integrity, and compound recovery. MDCK cells are canine kidney cells and do not reproduce the complete human intestine or blood-brain barrier.

MDCK Papp must therefore be interpreted with aqueous solubility, lipophilicity, pKa, Caco-2 permeability, PAMPA permeability, transporter substrate data, efflux ratios, metabolic clearance, plasma protein binding, and tissue-distribution measurements.

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.

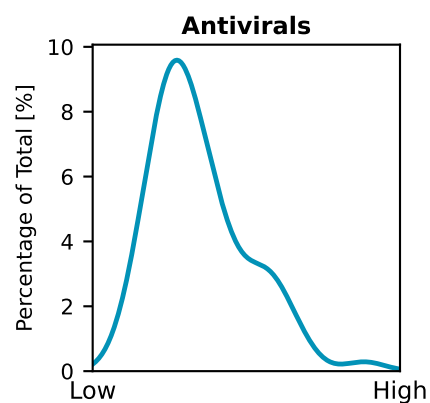
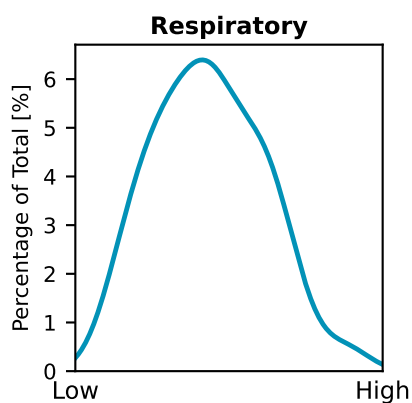
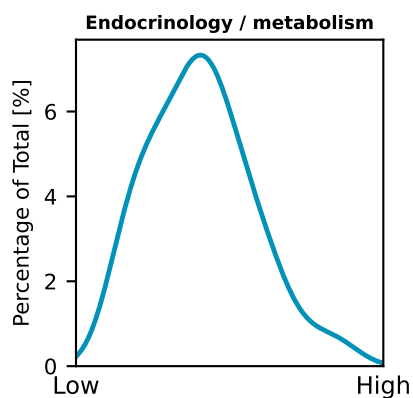
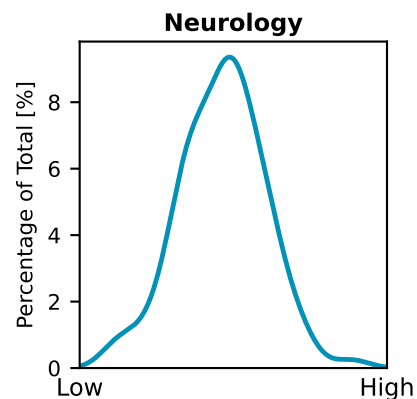
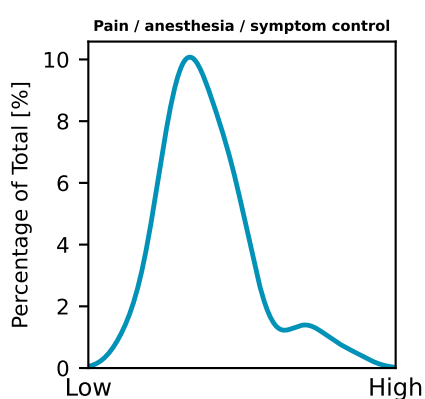
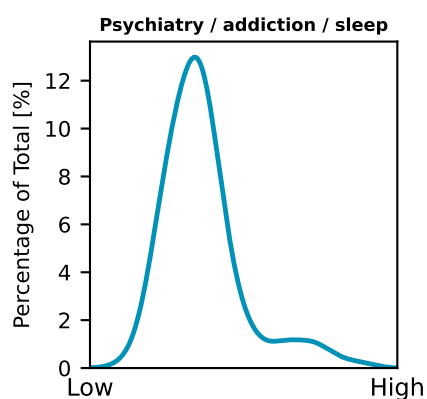
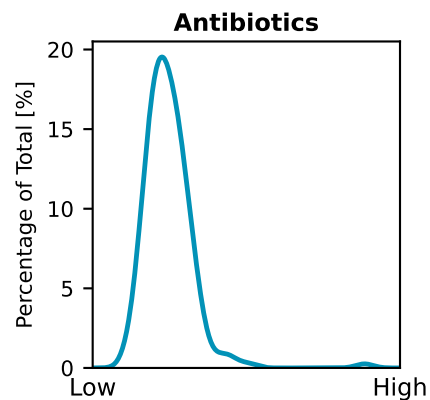
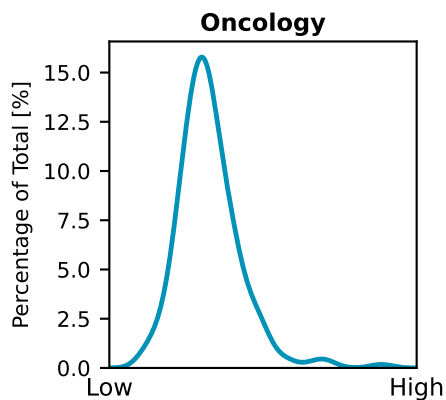
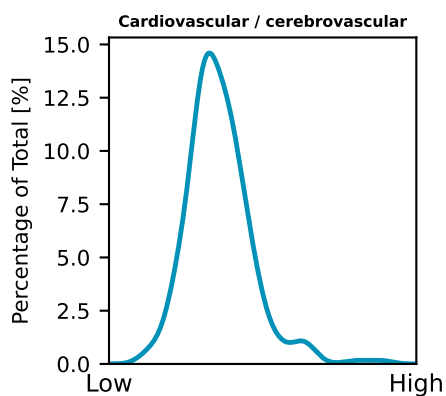
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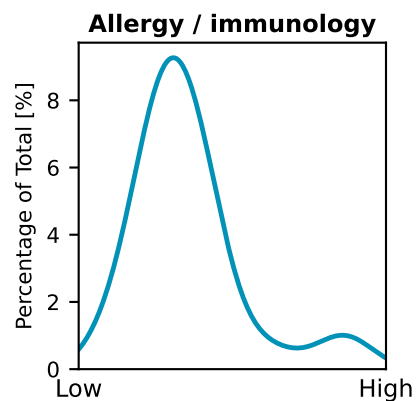
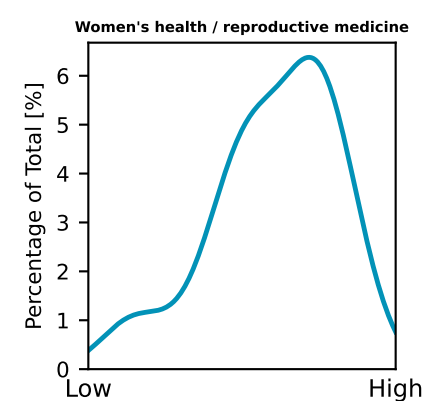
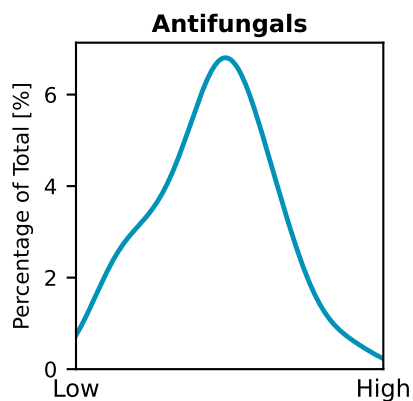
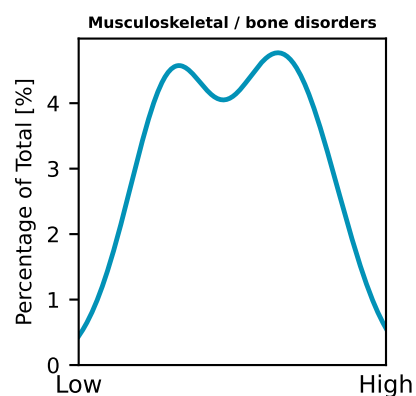
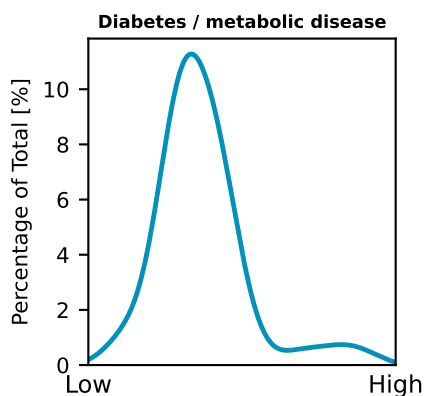
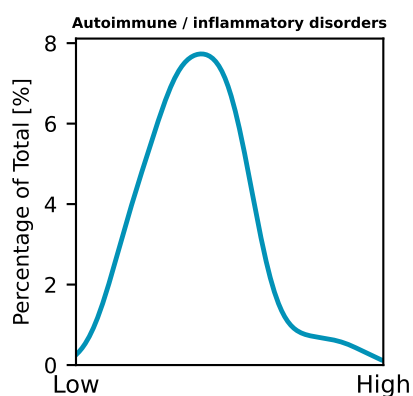
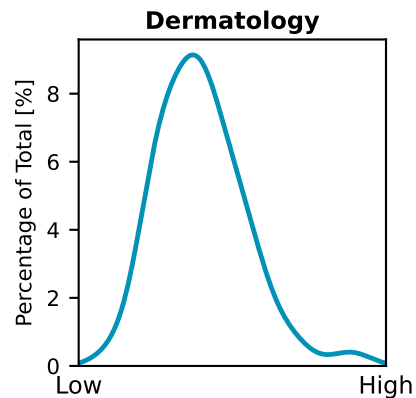
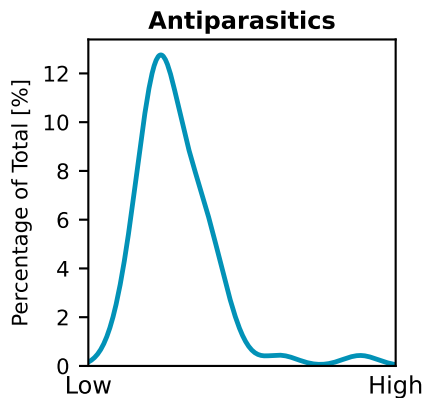
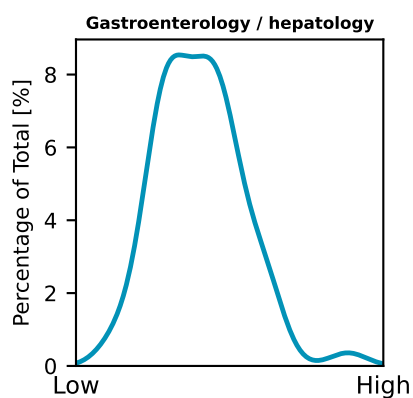
MDCK Apparent Permeability



— Derived from thousands of marketed drugs



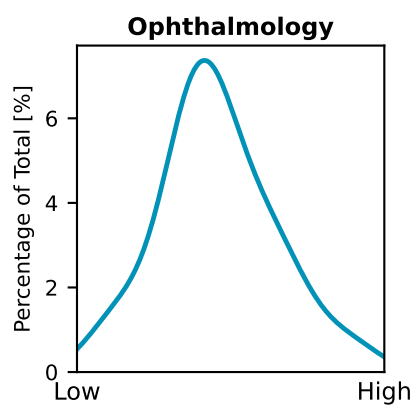
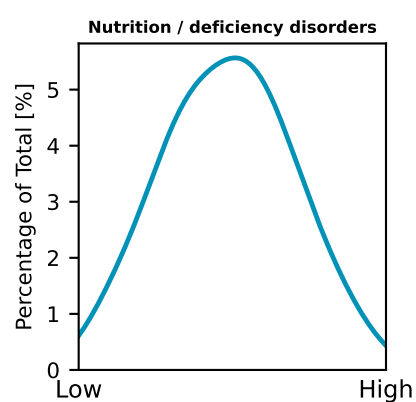
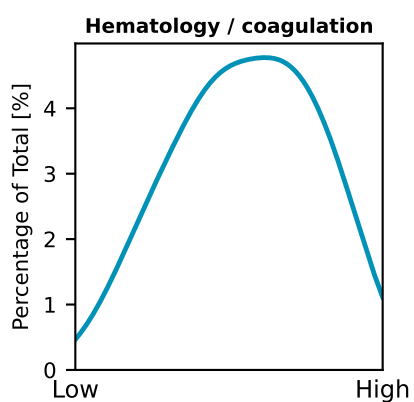
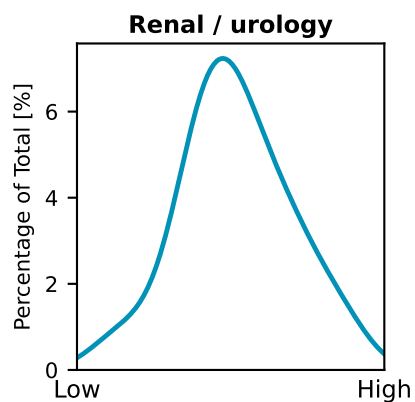
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