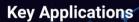# Quantitative Systems Pharmacology (QSP)
Crohn's Disease Model

Multiple Phase 2 and Phase 3 clinical trials were used in training this model, spanning 6 distinct therapeutic agents, including inhibitors for TNF alpha, cell trafficking, JAK-STAT, IL12/23, IL-17, and T cells.

Key Applications

- Incorporate client-specific individual patient data to predict CDAI and derived clinical endpoints
- Analyze and interpret efficacy predictions in terms of the underlying physiological processes
- Determine how inadequate responders to therapy fare with alternative drugs
- Predict per-patient responder status from baseline patient features

Key Features

- Convenient, efficient, and thorough generation and calibration of virtual populations
- Includes both qualitative and quantitative data during model training
- Represents clinical trials with specific entrance criteria
- Plot and analyze simulation results in the same platform
- Automatically visualize connections between model components
- Export data to other programs for ad hoc analyses

Validated virtual population with new biological and pharmacological components can include novel compound predictions while recapitulating and validating against existing clinical trial data.

Sound Science

Generates
virtual populations that include inter-patient variability in pathophysiology as well as clinical endpoints

Biological Data
Commonly used biomarkers, such as CRP and FCP, are directly informed by biological data

Includes
local tissue, innate immunity and adaptive immunity, and their interactions. Its processes and features that differentiate it from other gastric inflammatory diseases

Virtual
populations consistent with clinical trials of interest are generated with qualitative and quantitative data

Cytokines
drive inflammatory feedback loops and other complex processes

Integrates
modulation of disease pathophysiology via therapeutic agents

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📞 +1-984-444-8305