

Quantitative Systems Pharmacology (QSP) Atopic Dermatitis Model



Over 20 Phase 2 and Phase 3 clinical trials were used in training this model, spanning 5 distinct therapeutic agents, including IL-4 receptor inhibitor, IL-13 inhibitors, and JAK inhibitors.

Key Applications

- Natively support commonly used endpoints (BSA, EASI)
- Enable inclusion of endpoints with the addition of individual patient data involving IGA or SCORAD
- Predict physiological changes (e.g. redness, swelling) with additional provided data

Key Features

- Convenient, efficient, and thorough generation and calibration of virtual populations
- Includes both qualitative and quantitative data during model training
- Represents patients with distinct therapy backgrounds and 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



Base Model

is well-constrained and includes population mean data from a broad set of clinical trials



Generates

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



Includes

distinct cell types with multiple activation states, as well as cytokines that drive intercellular signaling and other proinflammatory small molecules to adequately represent the disease complexity



Data-driven

numerous qualitative checks enable sampling of realistic virtual patients



Disease pathophysiology

The model has a broad set of implemented therapies to constrain all aspects of known disease pathophysiology including both small molecules and biologics

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