**EXAMPE (One-compartment PBTK model)**

The example model is a classic one-compartment PBTK model. Through the simulation, we can verify the foundational principle that the simulated outputs accurately predict the same concentration-time profile observed in the clinical setting. Here, we focused on a tested range of parameters of interest, ensuring the model's reliability.

### Model construction

- **Model equations**: The model is based on the classical PBTK approach, which incorporates linear pharmacokinetic equations.
- **Model outputs**: The outputs of interest include concentration-time profiles.

### PK modeling & uncertainty analysis

- **Parameter estimation**: Utilizing the `pksensi` package, we estimated the parameters of the model.
- **Uncertainty quantification**: We assessed the uncertainty in model outputs using sensitivity analysis.

### Property matrix generation

- **Matrix format**: The matrix is organized to describe the relationship between parameters and outputs.

### heatmap visualization

- **Heatmap representation**: The heatmap provides an effective plotting method to overview the parameter sensitivity and interaction.

### Time-dependent sensitivity and convergence indices

- **Sensitivity indices**: These indices help us understand the influence of parameters over time.
- **Convergence analysis**: Ensuring the model's robustness and validity.

### Decision making

- **Decision support**: We can use this information to make informed decisions regarding model adjustments or parameter values.

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**ACKNOWLEDGEMENTS**

- **SOURCE CODE & LINK**

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**REFERENCES**


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**FUTURE DIRECTIONS**

1. This package is still experimental and maturing, we are continuously improving its function and collecting user feedback. Your comments are very valuable!
2. In addition to the eFAST method, we will add the Sobol method variance-based sensitivity analysis in this package and compare the usability with eFAST.
3. Also, we’ll integrate pksensi to other R packages to make it more practical for R users.