

**Modelling of PK-PD and drug-drug interaction (synergy /antagonism /additivity)
with examples of anti-cancer and anti-inflammatory drug combinations**

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Abstract-Different aspects of combination therapies will be discussed, among others the compartmental and physiologically based pharmacokinetics, pharmacodynamics, drug-drug interactions with the emphasis on drug synergy/antagonism and experimental design. The most popular mathematical approaches to drug synergy will be presented in more detail. Examples of their application in the anti-cancer and anti-inflammatory drug development will be given.