

**Abstract - Presentation for the Workshop " Early Discovery of New Antibiotics"
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Name of speaker:	Nassos Typas
Name of presentation:	Drug combinations: from drug repurposing to design principles and mechanism



Abstract: Drug combinations and drug re-purposing can act as a first line of defense against the alarming rise of multi-drug resistant bacterial infections, yet their current use in clinics is limited. To better understand the potential of drug combinations, we are combining high-throughput screening, with pharmacokinetic/pharmacodynamic modelling and downstream mechanistic analysis in three clinically relevant pathogens: uropathogenic *Escherichia coli*, *Staphylococcus aureus*, and *Streptococcus pneumoniae*. Here I will present the general principles we derived from recently screening ~3,000 pairwise combinations of different antibiotics, selected human-targeted drugs and food additives in 3 prominent gram-negative pathogens, and the potential clinical utility of the discovered drug synergies.