May 17th, 11:20 AM - 11:40 AM

PK/PD modeling coupled with a phenotype-structured population model for reducing drug resistance

Lifeng Han
lifeng.han@asu.edu

PK/PD modeling coupled with a phenotype-structured population model for reducing drug resistance

Drug resistance makes effective treatment of cancer and other diseases difficult. Pharmacokinetic/pharmacodynamic (PK/PD) modeling is useful in dose selection and drug regime design. It is desirable to include drug resistance mechanisms in PK/PD modeling to inform the development of drug regimens to avoid or minimize drug resistance. In this talk, I will show how a phenotype-structured population model can be parameterized with in vitro data on olaparib, an anti-cancer drug. Together with the published PK information of olaparib, an optimal dosing regimen is devised to achieve the least possible drug resistance within the constraints of maximum exposure.