SynergyFinder Plus: For Better Explanation and Annotation of Drug Combination Screening Datasets

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ABSTRACT

To improve the efficacy of anticancer treatment Combinatorial therapies have been proposed recently. To analyze pre-clinical drug combination datasets, the SynergyFinder R package is a software which can be used. Here, the reports are present on major updates to the SynergyFinder R package for improved interpretation and annotation of drug combination screening results.

Five main innovations are exisisted in the updated SynergyFinder R package. 1) Extended mathematical models to higher-order drug combination data analysis and implementation of dimension reduction techniques for visualizing the synergy landscape. 2) Synergy and sensitivity of drug combination with confidence intervals and P values analysed statistically.3) Incorporation of synergy barometer to harmonize multiple synergy scoring methods and to provide a consensus metric for synergy. 4) To provide an unbiased interpretation of the clinical potential author evaluate drug combination synergy and sensitivity. 5) Enabling of fast annotation of drugs and cell lines which includes chemical and target information.

All these different annotations will definitely enhance the explanation of the mechanisms of action of drug combinations. To ease the use of the R package within the drug discovery community a web server at www.synergyfinderplus.org provides a user-friendly interface.