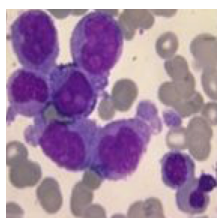# AZ challenge
Goal: predict drug synergy (drug combination)

Data overview

118 small molecules

85 cancer cell lines
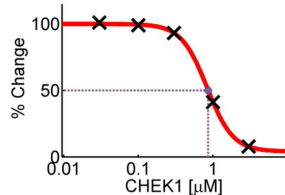
Drug chemistry
- Fingerprints
- Putative target
- Properties, e.g. lipophilicity
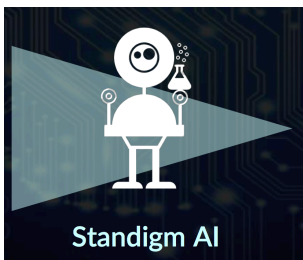
Molecular features
- Mutation
- CNV
- Methylation
- Gene exp.

Mono-therapy

~900 drug combinations
measured in a subset of cell lines
(total ~10,000 synergy score measured)
…
60% open (training data)
40% hidden (test data)

Standigm AI

Challenge result

Ranked 3rd among 71 teams

- Lung
- Breast
- Large intestine

Personalized medicine

Patient stratification

Anchored cell line

85 cell lines

743 combinations

Challenge 2:
- predict synergy
- predict non-synergy (e.g. antagonism or additivity)

~12% experimentally filled

Anchored drug combination

drugA
drugB → e.g. mutation Biomarker? e.g. wild type → synergistic

Standard therapy + another drug

anchored drug drugA ??? → drug partner drugH, drugC, drugR, drugK → rank by synergy

Patient cohort e.g. breast cancer EGFR mut.