

BIOE 498/598, Spring 2020

Homework 1

Due Wednesday, 2/19/2020 by 9:00am.
Upload a single PDF with your slides to Compass.

You received the following e-mail from a colleague at work:

Hey,

We just received the attached data from the screening team. They did a combination screen with three melanoma inhibitors (lapatinib, PLX4720, and PI103) in combination at six different concentrations (0, 0.1, 1, 10, 25, and 100 mM). They screened against two cell lines (PIG3V and SkMel) with three variants each (wild type, a BRAF V600E mutant, and a NRAS Q61K mutant). The output was cell viability measured by alamar blue and normalized to an untreated DMSO control.

The data are mostly complete, with about 5% of the samples not passing QC; these have been removed. The drug concentrations are reported on a log scale.

The team wants to know if any of the combinations are more effective than expected and if mutation status matters. Can you take a look?

Attached to the e-mail was the file `Melanoma_screen.csv`.