**CPDM Dashboard**

The goal of this dashboard is to standardize the merging, cleaning, and analysis of datasets that are routinely used in the operations and workflows of the Center for Patient Derived Models (CPDM) at Dana-Farber Cancer Institute. Each RShiny module serves a different purpose and can be used either sequentially or independently, depending on the user's needs.

**Data Wrangling RShiny**

**Purpose:** The purpose of the Data Wrangling RShiny module is to import and prepare one or more file types and join them together into analysis-friendly datasets for downstream quality control and analysis.

Note: Not every file type is required to use the Data Wrangling module. Users may select one or more datasets for reshaping and can export them individually before joining them together.

**Preparing Different File Types for Import**

The following datasets can be imported, prepared, exported, and/or joined together in the Data Wrangling RShiny module:

* Labguru Plate Map – An Excel file (.xlsx) of a plate map designed in Labguru.
* Tecan Report – An Excel file (.xlsx) generated from the Tecan D300e Digital Dispenser software.
* Imaging File – A text file (.txt) exported from either an Incucyte or a Cytation imaging system.
* CTG File – An Excel file (.xlsx) from either a GloMax Explorer or a SpectraMax iD3 plate reader.

**Labguru Plate Map**

The Labguru plate map is an Excel file (.xlsx) exported from Labguru, an electronic laboratory notebook and inventory management software used at CPDM. There are two main components to preparing the Labguru plate map:

* Marking which wells of the plate have cells

Users should add their registered cell lines to the plate map to indicate which wells contain cells and which do not. When the Labguru plate map is joined with other datasets, such as a Tecan Report, wells that do not have a treatment captured by the Tecan Report but do have cells according to the Labguru plate map will automatically be marked as Media Controls in the joined dataset.

* Annotating conditions or treatments that are NOT captured by a Tecan Report

Users can take advantage of Labguru’s well annotation functionality to label conditions not recorded by the Tecan Report, such as varying media conditions, seeding densities, and other experimental variables. If treatments are dispensed manually or with a device other than the Tecan, users should annotate these treatments in the well annotation field. For treatments with multiple concentrations, users can specify the drug name and concentration in the format: Drug A - 0.05, using a hyphen to separate the name and concentration.

When joining the Labguru plate map with other datasets, an optional button will appear if any hyphens are detected in the well annotations in Joined Data tab. Clicking this button will automatically parse the annotation by the hyphen, placing the drug name into the treatment\_name column and the concentration into the concentration column of the resulting joined dataset.

Exporting: To export a plate map from Labguru, navigate to your designed plate in Labguru and click the **Export plate to XLSX** button as shown below. The name of the plate in the Labguru will become the name of the excel file exported (in this e.g. the file will be “Plate\_01\_CPDM\_2951\_CSM\_7549\_Patient\_Sample\_20230803.xlsx”)

A screenshot of a computer

AI-generated content may be incorrect.

**Tecan Report**

The Tecan Report is an Excel file (.xlsx) version of the output