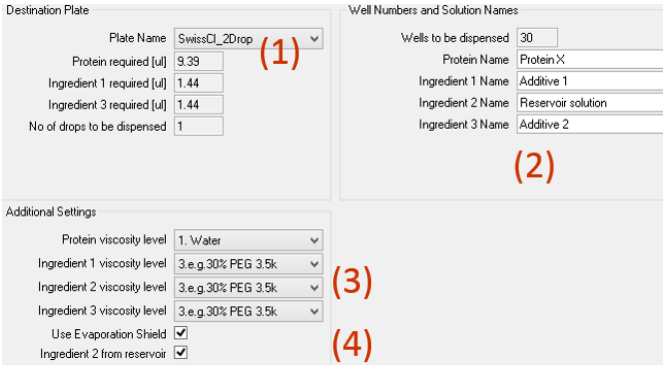
Simple 2D grid optimization in WaspRun

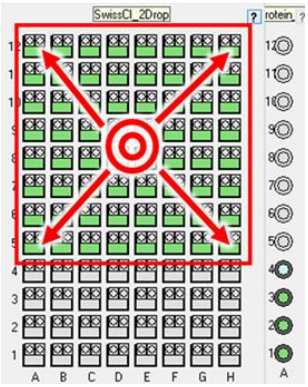
There are 3 experiment scripts in WaspRun for creating gradients:

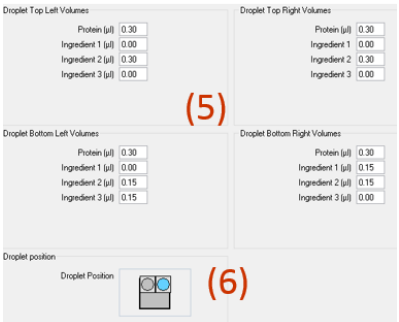
Experiment	Microtip required	Description	Dispense drops or reservoirs
4 Corner Optimization	4-bore	Create a 2D grid by specifying the corner conditions	Drops only
2D Grid, Precipitant vs Protein	3-bore	Create a 2D grid varying protein against precipitant concentration	Drops and reservoir using microtip only (limited volume range) recommend 15uL res volume low viscosity
2D Grid, pH Gradient	4-bore	Create a 2D grid varying pH against precipitant concentration.	Drops and reservoir using microtip only (limited volume range) recommend 15uL res volume low viscosity

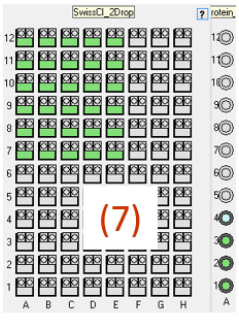
Step-by-Step Instructions:

4 Corner Optimization









1. Choose a Plate type.
2. Specify up to 4 ingredients.
3. Specify viscosities and use evaporation shield.
4. Specify "**Ingredient 2 from reservoir**." If selected ingredient 2 will be taken from each reservoir rather than a sample tube, e.g. for screening experiments.
5. Specify 4 corner conditions.
6. Select which drop to dispense to.
7. Select where to dispense to on **plateloader window.**

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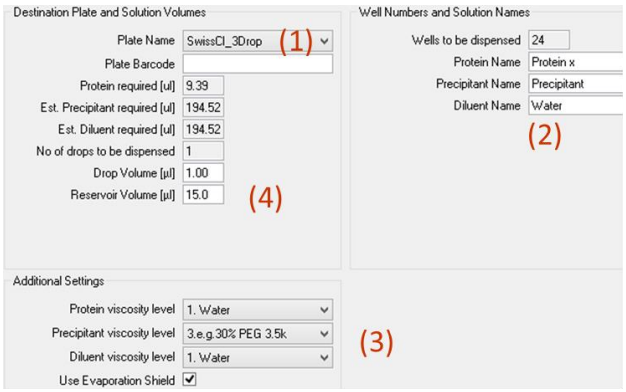
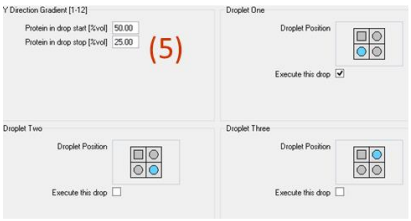
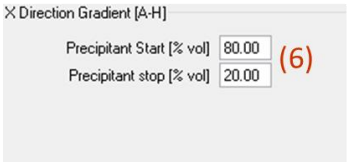
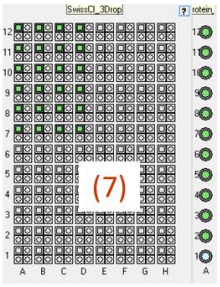
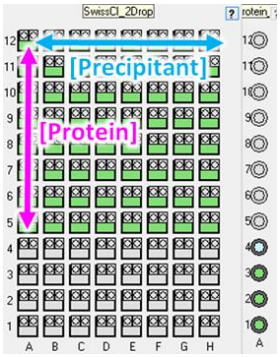
2D Grid, Precipitant vs Protein





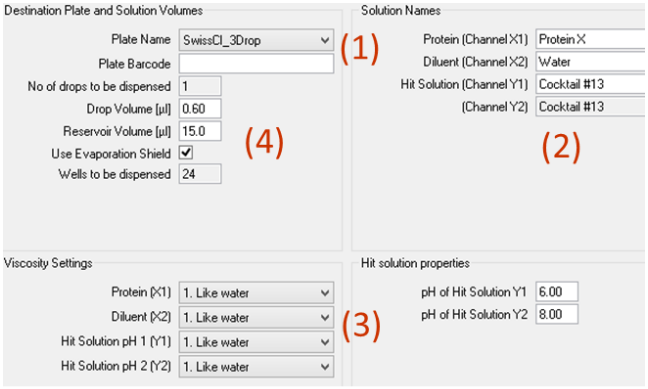


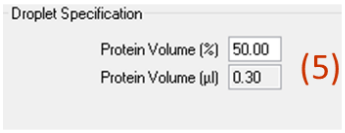


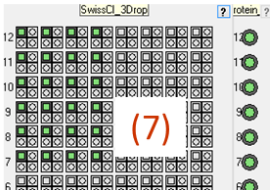


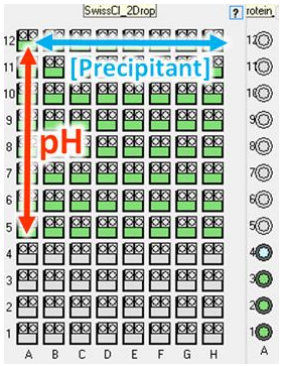
1. Choose a Plate type. SwissCI_3 drop plate recommended
2. Specify protein, precipitant and diluent.
3. Specify viscosities and use evaporation shield.
4. Specify reservoir volume to dispense 15 uL recommended for SwissCI_3 drop.
5. Specify protein. [Protein] varies in the Y axis (1-12 on plate)
6. Specify precipitant gradient. [Precipitant] varies in the X axis (A-H on plate)
7. Select where to dispense to on **plateloader window.**

2D Grid, pH vs Precipitant









1. Choose a Plate type. SwissCI_3 drop plate recommended
2. Specify protein diluent and a high and low pH cocktail of the precipitant.
3. Specify viscosities and use evaporation shield.
4. Specify reservoir volume to dispense 15 uL recommended for SwissCI_3 drop.
5. Specify protein volume. Constant across plate.
6. Specify precipitant gradient. [Precipitant] varies in the X axis (A-H on plate). Specify pH gradient. pH varies un the Y axis (1-12 on plate)
7. Select where to dispense to on **plateloader window.**

Note pH gradient is linear and unlike XStep, WaspRun does not calculate the final pH using pKas.