## Station A: MagMAX Viral/Pathogen Nucleic Acid Isolation

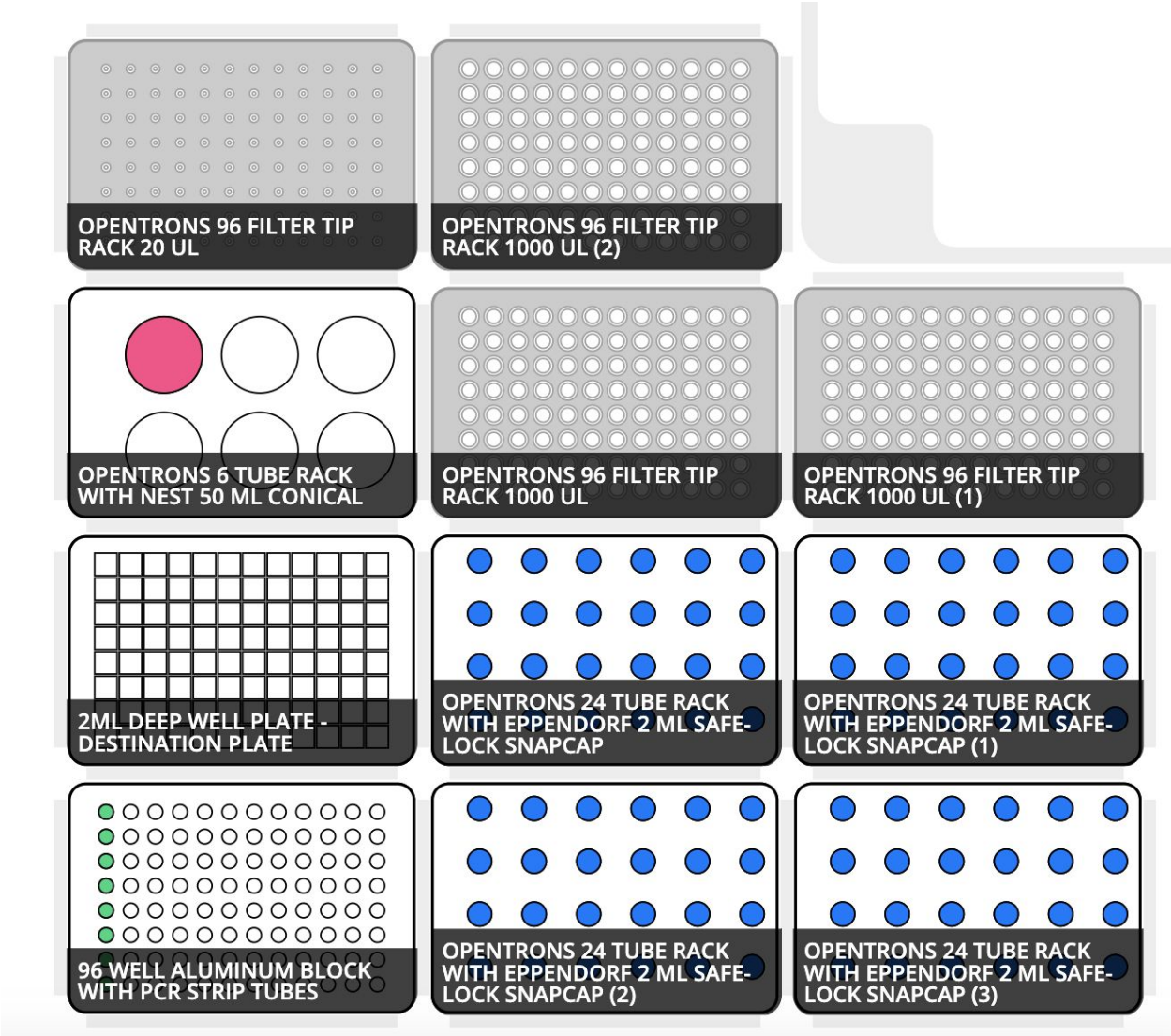
**Code parameters:**

- Change the sample number on line 14 (default is 8, max is 96)
- Change the sample volume (µl) on line 15 (default is 200)
- Tip rack tracking can be changed from False to True on line 16 (default is False)

**Pipettes:**

- P1000 single channel on the right mount
- P20 multi channel on the left mount

**Deck Layout:**




**Labware and module requirements:**

- ≤ 96 x 1.5 - 2mL tubes **[input - samples]**
- 4 x 24 Tube rack **[holds 1.5 - 2mL tubes with samples]**

- 3 x 1000µl filter tip racks
- 1 x 6 Tube rack **[holds 1 50mL tube with Binding Bead Mix in A1]**
- 1 x 50mL tube **[Binding Bead Mix]**
- 1 x 2mL deep well plate **[output - destination plate]**
- 1 x 20µl filter tip racks
- 1 x 1.5-2mL tube **[for creating the internal control & proteinase k mix]**
- 1 x 96 well aluminum block **[holds 1 PCR strip tube in column 1]**
- 1 x 200µl PCR strip tubes **[holds internal control & Proteinase K mix]**

**Volume requirements:**
***Note****: the below volumes account for a dead volume - the dead volume can be adjusted depending on the calibration of the pipette to the labware, but it's best to have a dead volume of at least 10%*

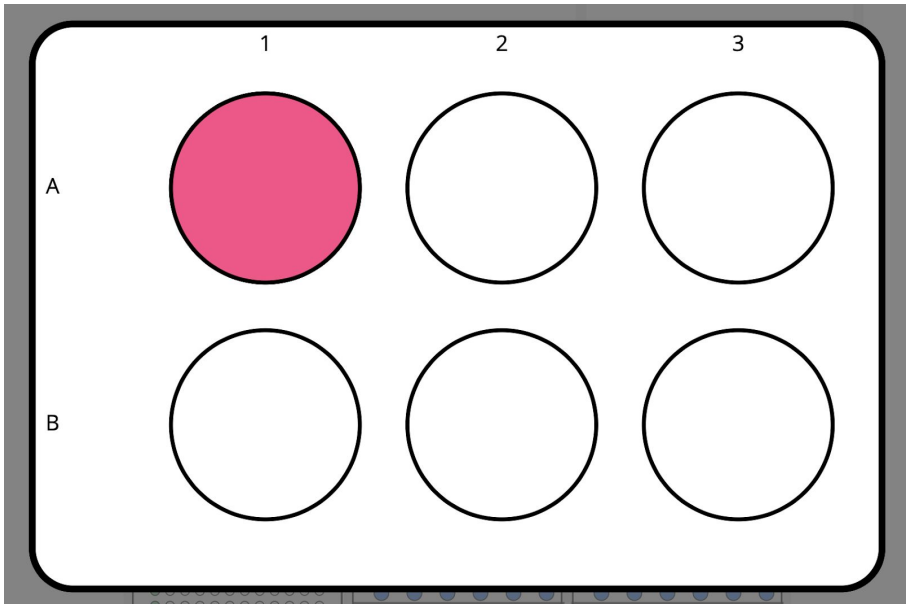
| **Reagent** | **Volume per sample** | **Volume for 8 samples** | **Volume for 48 samples** | **Volume for 96 samples** |
|---|---|---|---|---|
| **Binding Bead Mix** | 275µl | 3,300µl | 14.3mL | 27.5mL |
| **Proteinase K & Internal Control mix** | 10µl | 120µl | 520µl | 1000µl |

**Before you begin:**

1. Pre-cool the Temperature Module in the Opentrons App to 4°C
2. Load the samples onto the tube racks starting with filling up slot 2, slot 3, slot 5, slot 6.
3. Create the **Binding Bead Mix for slot 7**

| **Reagent** | **Volume per sample** | **Volume for 8 samples** | **Volume for 48 samples** | **Volume for 96 samples** |
|---|---|---|---|---|
| **Binding Solution** | 265µl | 3,180µl | 13.7mL | 26.5mL |
| **Total Nucleic Acid Magnetic Beads** | 10µl | 120µl | 520µl | 1mL |

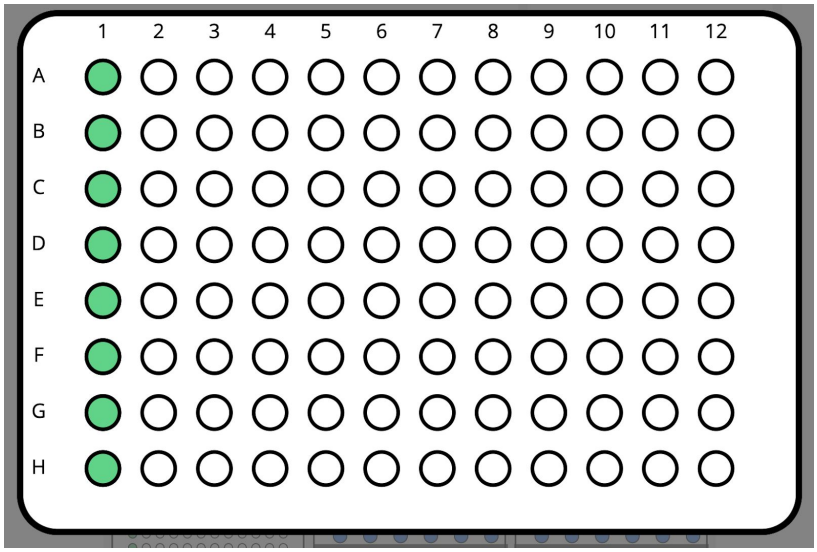
4. Add the binding bead mix in the 50mL tube to the rack in **Slot 7**




5. Create the **Proteinase K and Internal Control mix** in a 1.5-2ml tube:

| **Reagent** | **Volume per sample** | **Volume for 8 samples** | **Volume for 48 samples** | **Volume for 96 samples** |
|---|---|---|---|---|
| **Proteinase K** | 5µl | 60µl | 260µl | 500µl |
| **Internal Control** | 5µl | 60µl | 260µl | 500µl |

6. Divide the total volume of the Proteinase K and Internal Control mix by 8 (example: 96 samples would have 125µl in each PCR tube) and add it to a 200µl PCR strip tube to be placed in **Slot 1** on top of a 96 well aluminum block in column 1



The final destination plate of lysates will be in slot 4 in the deep well plate. Once the run is finished, move the deep well plate to Station B to complete the remainder of the extraction protocol.