**Lab Book Layout**

A close-up of a notebook

AI-generated content may be incorrect.

**“Cell Health” Table**

Rt: resistance of the recording pipette in the bath (generally ranges from 4.0-6.0 MΩ)

speed: of forming seal when positive pressure is release but before the cell is broken into

Ra: access to the cell, generally ranges from 1.0-2.0 MΩ

Vm: resting membrane potential (mV)

hold: current (pA) needed to hold the cell at -70 mV

coordinates: (x, y) from the top of the third ventricle (µm)

**Recording Parameters**

Cm: capacitance (pF) tells us about size

Rm: membrane resistance (MΩ or GΩ) tells us about

Ra: access to the cell, generally ranges from 1.0-2.0 MΩ

Tau: membrane time constant (µs)

Hold: holding current (pA)

**Orientation of Slice in Bath**

X

**Getting Electrodes In**

Find the ventricle under 5x

Find potential DMH cell under 40x (**no** **more** moving the stage when this is done)

Put in the stimulating (left) electrode, find under the 40x by moving the electrode, focus the tip by moving the electrode

Move stimulating electrode and objective down to the slice

Positive pressure when recording (right) electrode goes in bath, offset the pipette

Find recording electrode under 5x

Find recording electrode under 40x

Move recording electrode and objective down to the slice

**Getting a Cell**

Positive pressure when recording electrode is in bath

Membrane test set to bath mode at #Hz

-looks like: square waveform

Dimple in membrane

Release positive pressure

-should flatten out and reach giga Ω seal

Switch to cell mode

Lip suck to break into cell

-looks like: #

**When You Have a Cell**

Current clamp mode

Note resting Vm (mV)

Gap free recording

Hold at -70 mV, note what current (pA) is needed

Current clamp steps recording

Stop holding in current clamp

Switch to voltage clamp

Hold at -70 mV

CA1: looking for currents

5-minute intervals: membrane test at 10 Hz, switch back to recording (C3) at 1 kHz

Do you stop holding at -70 before going back to current clamp mode to retest at the end?

Repeat the current clamp gap free and current clamp step recordings