

Explanation of the data

This directory contains current-voltage data acquired from HEK-Nav1.5 cells using the Nanion Patchliner. The purpose of this study was to explore the effects of series resistance compensation on the interpretability of sodium voltage clamp data.

Below is an example that I used to explain how this folder is structured:

For the file: **`./220210_003_ch3_csv/NaIVCP20/step_10.csv`**

- **`./220210_003_ch3_csv`** – folder containing all info about a cell
 - **`./220210_003_ch3_csv/NaIVCP20`** – folder containing current-voltage traces at a specific compensation setting. The CP20 in this example indicates that the traces in this folder had 20% comp and 20% prediction compensation.
 - **`./220210_003_ch3_csv/NaIVCP20/step_10.csv`** – a file containing the current responses, which were sampled at 25 kHz. Each trace consists of a 10 ms holding step at -100 mV, followed by a 20 ms step to the specified voltage, and then a 10 ms step back to -100 mV.

For each cell, we acquired data at multiple compensation settings (e.g. NaIVCP10, NaIVCP20, etc). You may see three different constructions of these labels:

- **NaIVCPXX** – indicates that we compensated XX amount using both compensation and prediction (e.g. NaIVCP80 would be 80% comp + 80% pred)
- **NaIVCXX** – indicates that we compensated XX amount of *only* the compensation setting, while prediction was held at 0 (e.g. NaIVC80 would be 80% comp + 0% pred)
- **NaIVPXX** – indicates that we compensated XX amount of *only* the prediction setting, while compensation was held at 0 (e.g. NaIVP80 would be 0% comp + 80% pred)

We were not able to acquire data for all cells at every setting. The cells would often experience rundown after a few minutes (see 220210_003_ch3_csv comp+pred traces versus prediction only traces).