The preliminaries of patch clamping with PC12 Cells

Aneela Pasha, Trevor Boudreau, Iain Forbes & Sandra Harb
Honours Biology & Pharmacology Programme, McMaster University, Hamilton

1. Optimal conditions for whole-cell patch clamp recording from rat PC12 cells were investigated.
2. Inconsistent pipette pulling was identified as the main problem encountered and this was due to the fragile platinum filament, fire-polishing techniques and the need to adjust heat and velocity to obtain tips with greater than 3 M Ohm resistance.
3. pH of extracellular solution at 7.4 and intracellular solution at 7.2 was found to be critical for obtaining a Giga Ohm seal.
4. High chloride concentration is detrimental for the formation of a Giga Ohm seal.
5. Solutions may be stored at low temperatures but must be warmed to room temperature before use so as to prevent temperature shocking the cells.
6. Even the slightest bit of contamination can prevent seal formation. Electrophysiology techniques demand extreme cleanliness.