Supplement Figures

Sodium Action Potentials in Placozoa: Insights into Behavioral Integration and Evolution of Nerveless Animals

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Two supplementary figures:

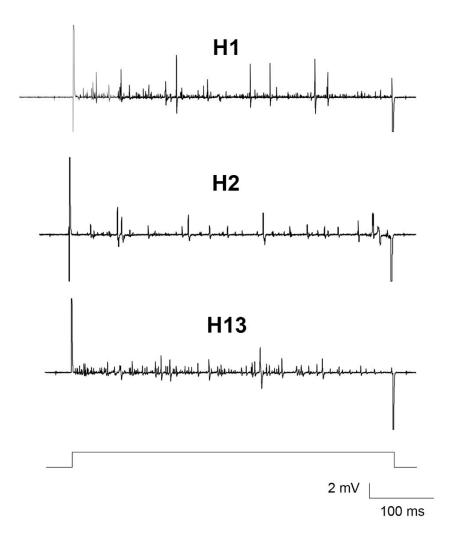


Figure 1S. Electrical activity (extracellular recording) in three different placozoan species: *Trichoplax adhaerens*, H1 haplotype; *Trichoplax* sp.; H2 haplotype; *Hoilungia hongkongensis*, H13 haplotype. Currents: H1 – 60 nA, H2 – 50 nA, H13 – 20 nA.



Figure S2. The diversity and evolutionary relationships of voltage-gated sodium and calcium channels in Metazoa and two species of choanoflagellates (*Monosiga* and *Salpingoeca*). 207 protein sequences were aligned with Mafft[41]. The phylogenetic tree was reconstructed using Iqtree[42]. The evolutionary model VT+G4 was chosen automatically. Abbreviations: Na_v–voltage-gated sodium channels, Ca_v-voltage-gated calcium channels, NALCN–sodium leak channels. Clade labeled "Putative ion channels" correspond to the group of sequences with no experimentally studied homologs. Placozoan species are denoted by mitochondrial haplotypes: H1 –*T. adhaerens*, H2–*Trichoplax* sp., H13–*H. hongkongensis*, H4–*Hoilungia* sp. The references for each particular species, gene and/or their sequences with relevant GeneBank accession numbers are summarized in the supplementary excel Table S2