Report 19 May

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| Title | Experiment A1 |
| Aim |  |
| Setup | Change z and x in comp 2  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Compartment settings:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Empty DataFrame  Columns: []  Index: []  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Extracellular anion concentrations:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Na: 145.0 mM  K: 3.5 mM  Cl: 119.0 mM  X: 29.5 mM  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Simulation settings:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Total time (mins): 10.0  Timestep (ms): 0.001  ATPase Model type: J\_ATP = p \* (Na\_in/Na\_out)^3  Pump rate: 0.1  Area scale type: Am = Surface Area / volume  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Impermeant anion changes:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Comp2 : increase intracellular impermeant anion concentration - 2.0 mM, valence: -1.0, between: 120.0s and 300.0s  No change of intracellular impermeant anion charge mid simulation  No change of extracellular impermeant anion concentration mid simulation |
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| Title | Experiment A2 |
| Aim | Same experiment as above, just increased the flux rate from 0.2mM/min to 0.5mM/min to see if I could exaggerate the effect |
|  | \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Compartment settings:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Empty DataFrame  Columns: []  Index: []  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Extracellular anion concentrations:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Na: 145.0 mM  K: 3.5 mM  Cl: 119.0 mM  X: 29.5 mM  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Simulation settings:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Total time (mins): 10.0  Timestep (ms): 0.001  ATPase Model type: J\_ATP = p \* (Na\_in/Na\_out)^3  Pump rate: 0.1  Area scale type: Am = Surface Area / volume  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Impermeant anion changes:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Comp2 : increase intracellular impermeant anion concentration - 2.0 mM, valence: -1.0, between: 120.0s and 300.0s  No change of intracellular impermeant anion charge mid simulation  No change of extracellular impermeant anion concentration mid simulation |
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| Conclusion | Successful experiment. Changing the flux rate did amplify the phenomenon. Next step is to increase the flux rate further |

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| Title | Experiment A3 |
| Aim | Same as above, just increasing the flux rate from 0.5 mM/min to 4mM/min |
|  | \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Compartment settings:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Empty DataFrame  Columns: []  Index: []  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Extracellular anion concentrations:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Na: 145.0 mM  K: 3.5 mM  Cl: 119.0 mM  X: 29.5 mM  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Simulation settings:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Total time (mins): 10.0  Timestep (ms): 0.001  ATPase Model type: J\_ATP = p \* (Na\_in/Na\_out)^3  Pump rate: 0.1  Area scale type: Am = Surface Area / volume  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Impermeant anion changes:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Comp2 : increase intracellular impermeant anion concentration - 2.0 mM, valence: -1.0, between: 120.0s and 400.0s  No change of intracellular impermeant anion charge mid simulation  No change of extracellular impermeant anion concentration mid simulation |
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|  | Successful experiment. Changing the flux rate did amplify the phenomenon. Next step is to increase the flux rate further.  The final valence is -0.865. In Kira’s her final valence wass -0.93 so th next step is to increase the rate and decrease the z of the incoming impermeants. |

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| Title | Experiment-A4 |
| Aim | Same experiment as above but trying to amplify the phenomenon even further by changing the flux rate from 4mM/min to 20mM/min. And from z=-1 to z=-2  …. 10 mM/min does sound biologically implausible, but this high rate will hopefully allow me to run shorter simulations and get the same response.  In Kira’s last multicompartment figure she had a final average charge of -0.93mv. |
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