**Description**

This package is meant to simulate piezo1 channel kinetics in a membrane in the presence of tension *in silico*. Based on various parameters, such as membrane tension, tension diffusion, channel P50, etc., this package will allow you to determine the delay in maximum elicited current post stimulus onset. Other readout from this package includes maximum current and percent occupancy of channels in each state.

**Examples:**

A red circle with a black background

Description automatically generated with low confidenceBackground pattern

Description automatically generatedChart

Description automatically generated Generate tension profiles based on rate of tension diffusion and tension-clamped stimuli size. Tension profiles will be calculated only for pixels where a channel is located to reduce computation time.

***Fig 1:*** *Left: tension profile for all pixels with a given tension-clamped stimuli and rate of diffusion. Middle: tension values after normalization through the center of the tension profile. Right: Tension profile when only the pixels where channels are located are calculated.*

Chart, line chart

Description automatically generatedChart

Description automatically generatedGenerate state occupancy plots to show the percentage of channels that are in either the closed, open, inactive, or slow inactive state.

***Fig 2:*** *Left: Percentage of channels in the open state upon a stimulus onset at time = 1000 \* 10^-5. Right: Percentage of channels occupying each state (blue = open, orange = closed, green = inactive, red = slow inactive)*

**Getting Started**

**Dependencies:**

**Installing:**

**Executing Program:**

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