Title: A data-driven model of the hippocampus using the HBP Brain Simulation Platform

Authors:
Romani A[1], Antille N[1], Atenekeng G[1], Courcol JD[1], Devresse A[1], Dynes JA[1], Falck J[2], Gevaert M[1], Gonzalo JK[1], Gulyas A[3], Kali S[3], Kanari L[1], Lange S[2], Mercer A[2], Migliore M[4], Muller EB[1], Palacios JP[1], Ramaswamy S[1], Reimann M[1], Riquelme RL[1], Rössert CA[1], Ying S[1], Shillcock J[1], Telefont M[1], Van Geit WAH[1], Vanherpe L[1], Markram H[1], Thomson A[2]

[1]Blue Brain Project, Brain Mind Institute, EPFL, Switzerland; [2]University College London, United Kingdom; [3]Institute of Experimental Medicine, Hungarian Academy of Sciences, Hungary [4]Institute of Biophysics, National Research Council, Italy.

Abstract (250 words):
The hippocampus is one of four brain regions being modeled in the ramp-up phase of the Human Brain Project (HBP), testing and guiding the development of the HBP Brain Simulation Platform (BSP) to be released in March 2016. Using preliminary versions of BSP applications developed at the Blue Brain Project, a first draft data-driven model of hippocampus was assembled, integrating data available from HBP and community sources. In brief, the building process started by populating the hippocampal volume, defined by the Allen Brain Atlas, with a series of reconstructions of well-characterized cell types according to experimentally observed densities and proportions. A connectome was generated as previously described [1], constrained by biological values for bouton density and synapses per connection. Single cell electrical models and synapse physiology were constrained by electrophysiological recordings and publicly available data. Further datasets not used as input during model building were used to validate the model. This first draft of the circuit model and the pipeline to build it are to be released with the HBP-BSP in March 2016, and they will be periodically updated. The model represents a resource for the community to integrate data, perform *in silico* experiments, and test hypotheses. Establishing a community process for the continued refinement of the model is planned for the next phase of the HBP.

[1] Reimann, M. et al. An algorithm to predict the connectome of neural microcircuits. *Front. Comput. Neurosci.* (2015). http://dx.doi.org/10.3389/fncom.2015.00120

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