PROJECT RESUME

Neural tube formation in vertebrates has been long accepted to follow the “activation-transformation” model in which all neurons by default have an anterior identity that is later in development transformed by caudalising signals. Now this model has been challenged by the recent discovery of cells with mixed neuronal and mesodermal identity in the neural tube. A nascent view proposes a modular development of the neural tube, in which different anatomical parts are laid down prior neuronal identity is acquired. We have recently observed this could be the case in amphioxus, an invertebrate chordate often used as a proxy to the ancestral condition. The neural tube of amphioxus appears to be divided in different developmental modules that respond differently to signalling cues. We aim to investigate if these modules are coincident with points of neural tube closure by analysing the cell types within and their development under normal and perturbed conditions.

*File: USVRS Project Resume 201819 BENITO-GUTIERREZ*