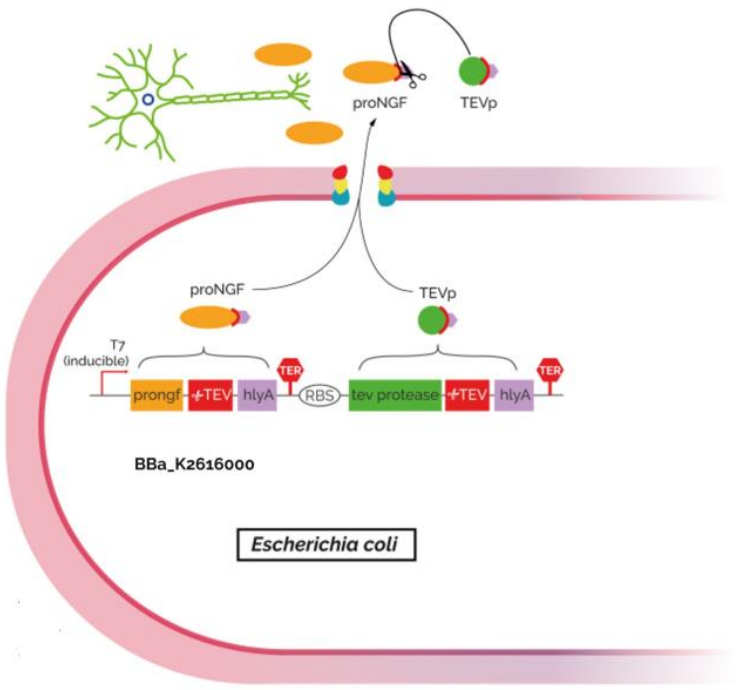
A



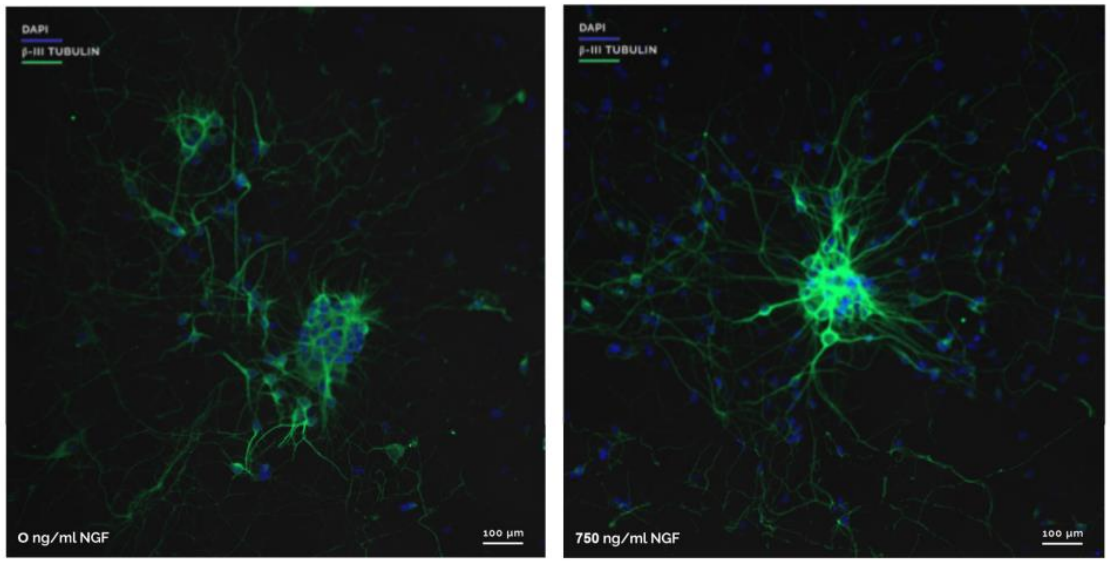

# RECONNECT NERVES

## Neuron Growth Stimulation

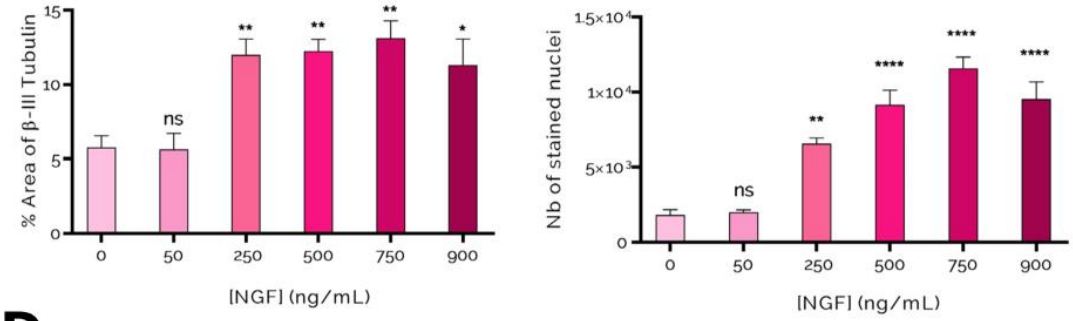
*The central idea of our project is to find a way to help the motor nerves of amputees grow back and connect to our interface. Literature studies led us to think of nerve growth factors (NGF) as the perfect molecules to start our research on. We focused on the production of pro-NGF by genetically modified E. col, and compared its action to commercial NGF (cNGF).*

**A : Designed pro-NGF secretion pathway.** HlyA export signal on pro-NGF is cleaved off by TEV protease.
**B : Fluorescence microscopy of neuronal cells grown without and with cNGF.** β-III tubulin is used to stain the neuron's membrane. An increase in fluorescence, and therefore growth, is seen with NGF.
**C : Quantifications of confocal images for different cNGF concentrations.** % area measures neuronal differentiation and number of stained nuclei measures cell survival.
**D : Comparison of the effect of cNGF and our pro-NGF (contained in bacterial lysate).** Bacterial lysate exhibits similar effects as cNGF for concentrations over 900 ng/ml.

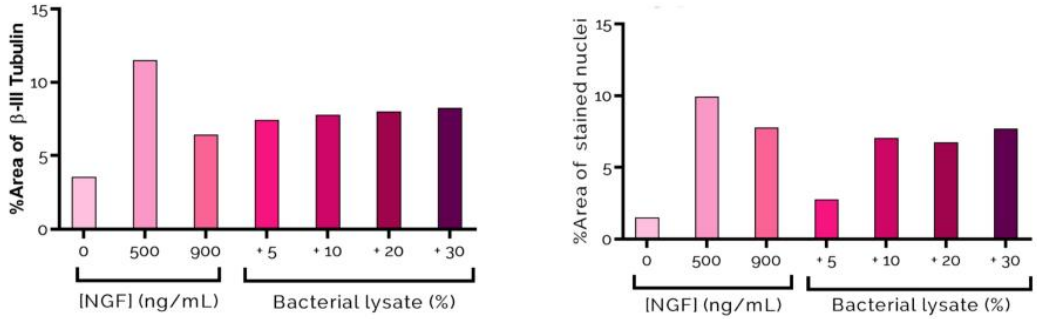
B




C




D




*Data are presented as MEAN ± SEM. Significance between 2 different groups was determined using an Ordinary one-way ANOVA test on the software Prism6 (GraphPad). (ns: non-significant, *: p<0.05, **: p<0.01, ***: p<0.001, ****: p<0.0001)*