Did you know that **plants have an immune system**, with which they protect and defend themselves against pests? The still world of leaves, stems and roots **hides many layers of dramatic defence**, starting with the superficial cell wall fortifications, plasma membranes receptor repertoires, production of various intracellular and extracellular metabolites, which do harm to intruders, and/or effectively spread the combat alert... If you would like to know more, join us in a tour through the genetic and protein armament of a model plant **Arabidopsis thaliana**, to learn about defence mechanisms thanks to which our planet keeps staying green.