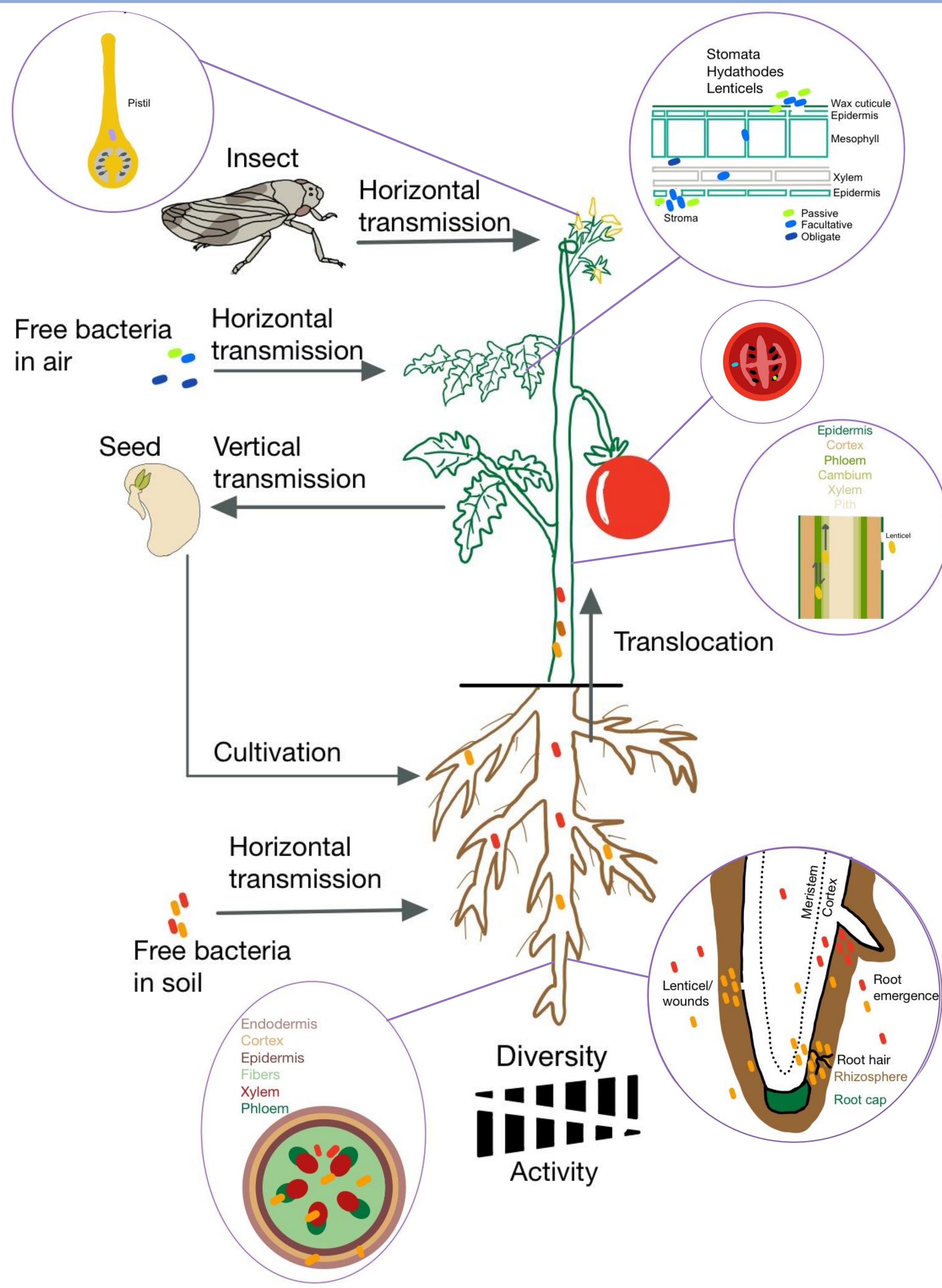


Roles of endophytic bacteria against plant stresses

Lengrand Salomé¹ & Pesenti Lena¹, Bragard Claude¹, Draye Xavier¹ and Legrève Anne¹

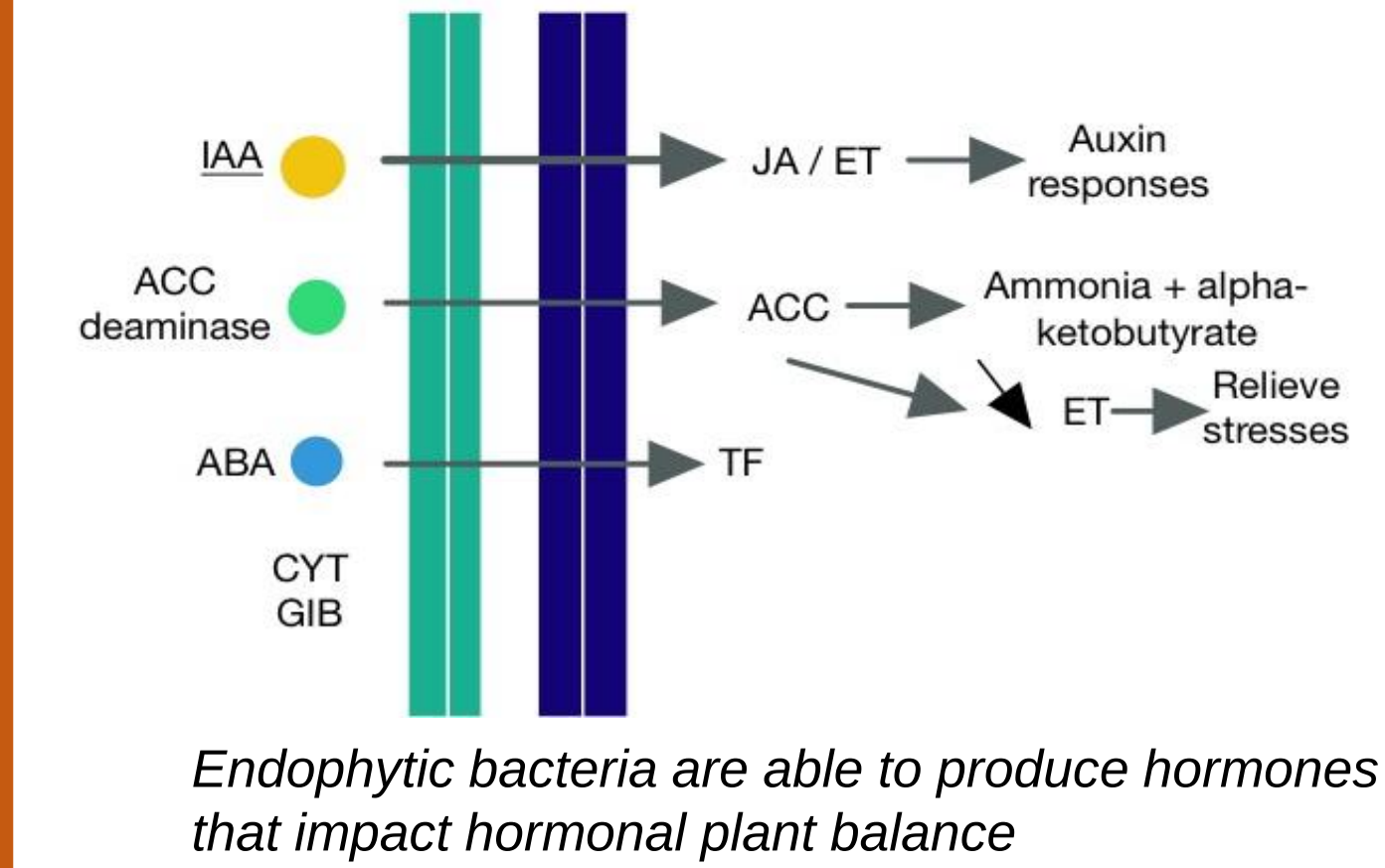
¹ : UCLouvain, Earth and Life Institute (ELI), Louvain-la-Neuve, Belgique

Origins, modes of transmission and distribution of endophytic bacteria in plants

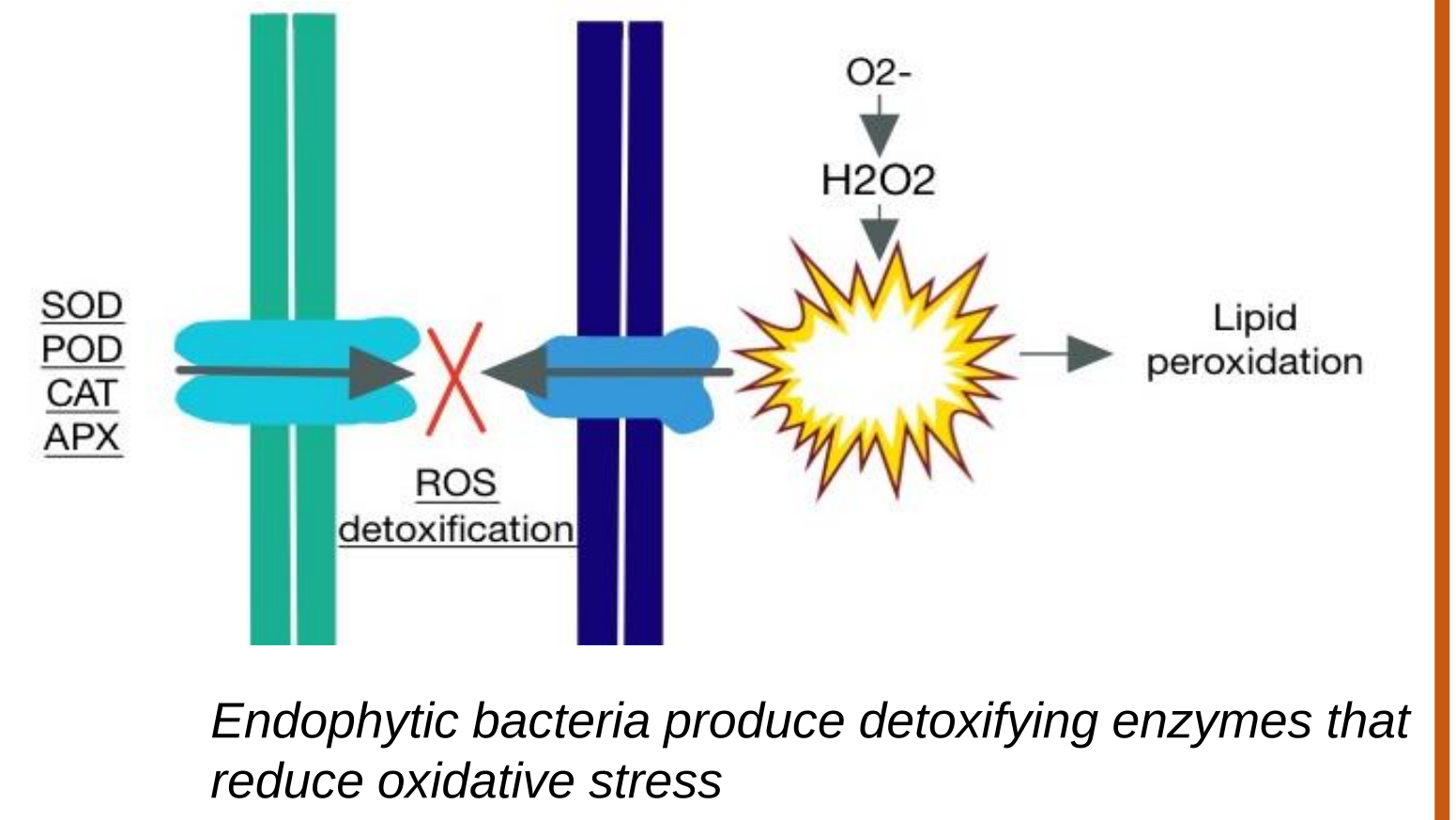


Modes of action of endophytic bacteria

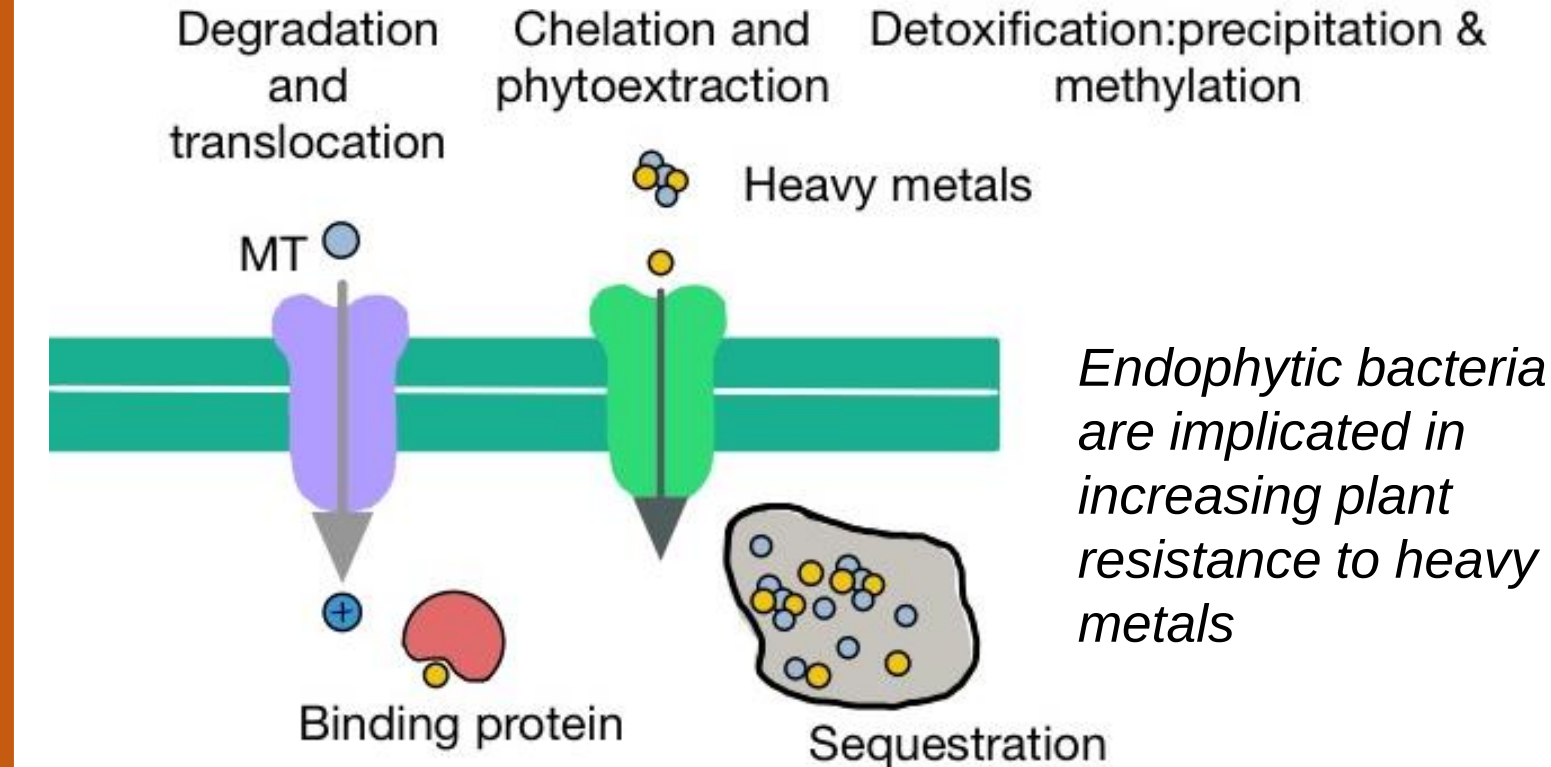
Production of hormones



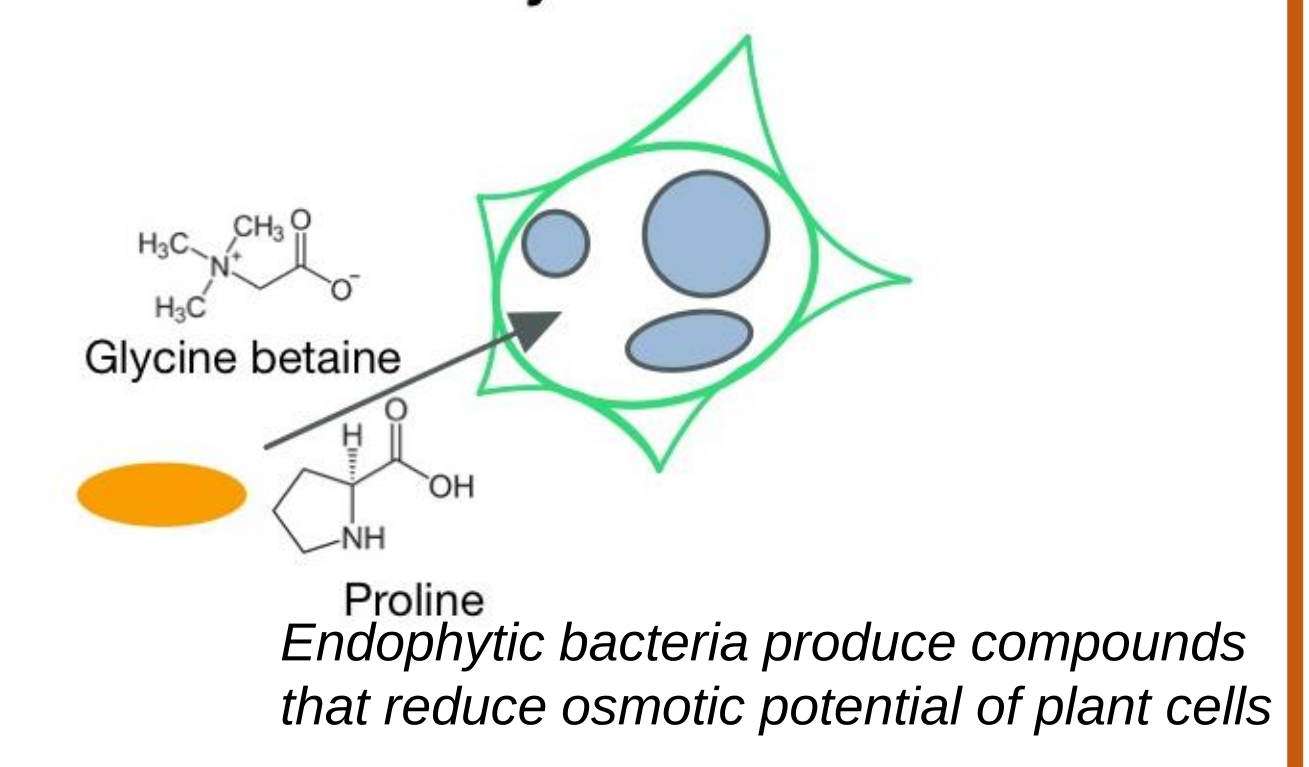
Detoxification of ROS



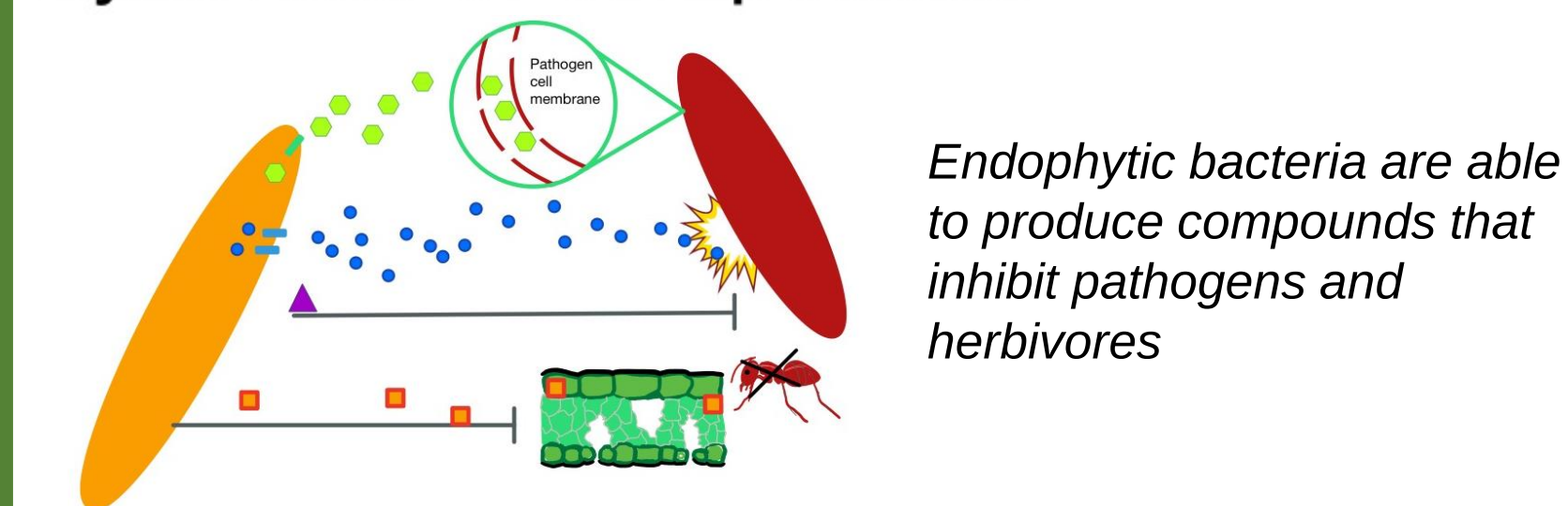
Phytoremediation



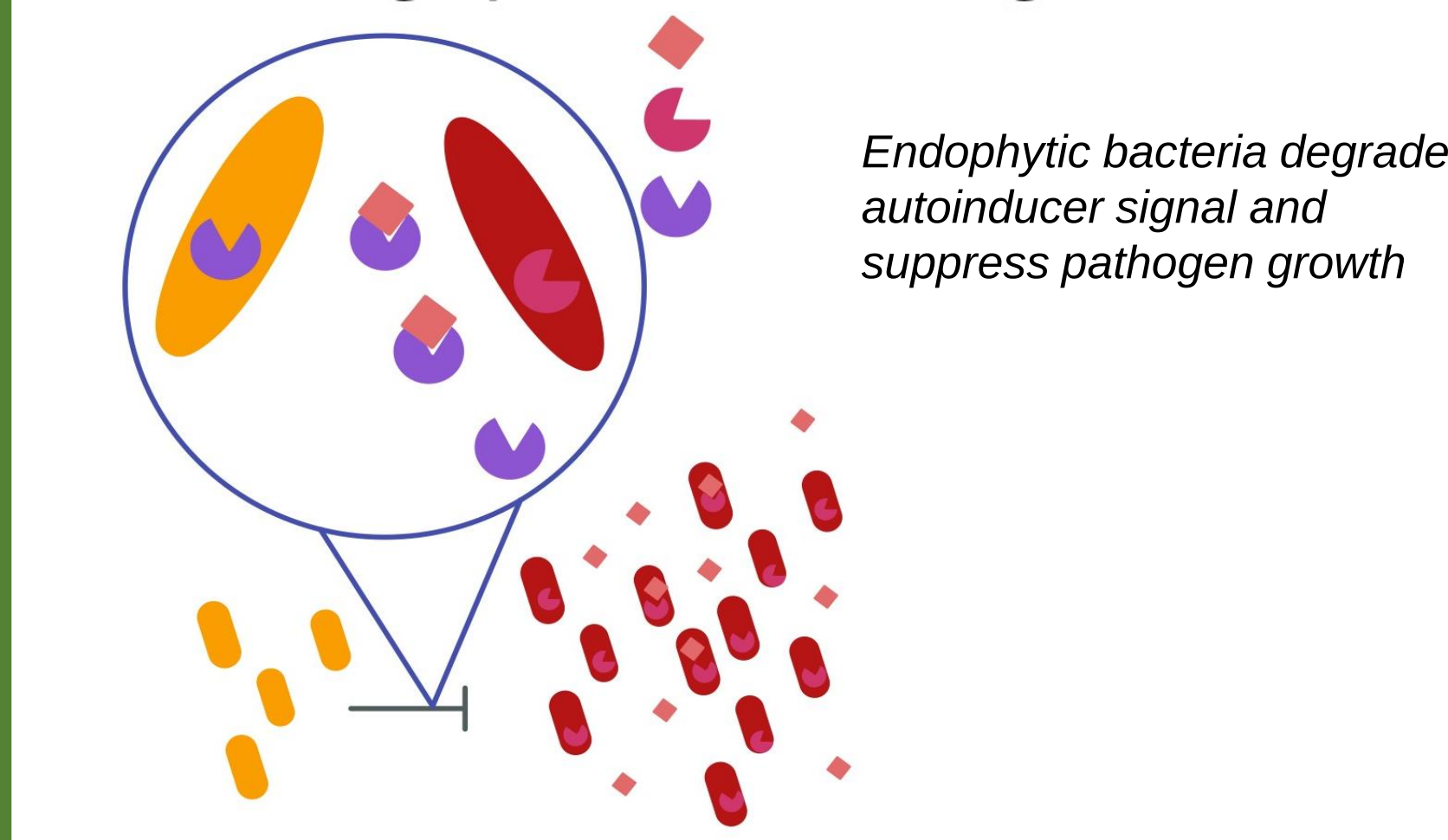
Osmotic adjustment



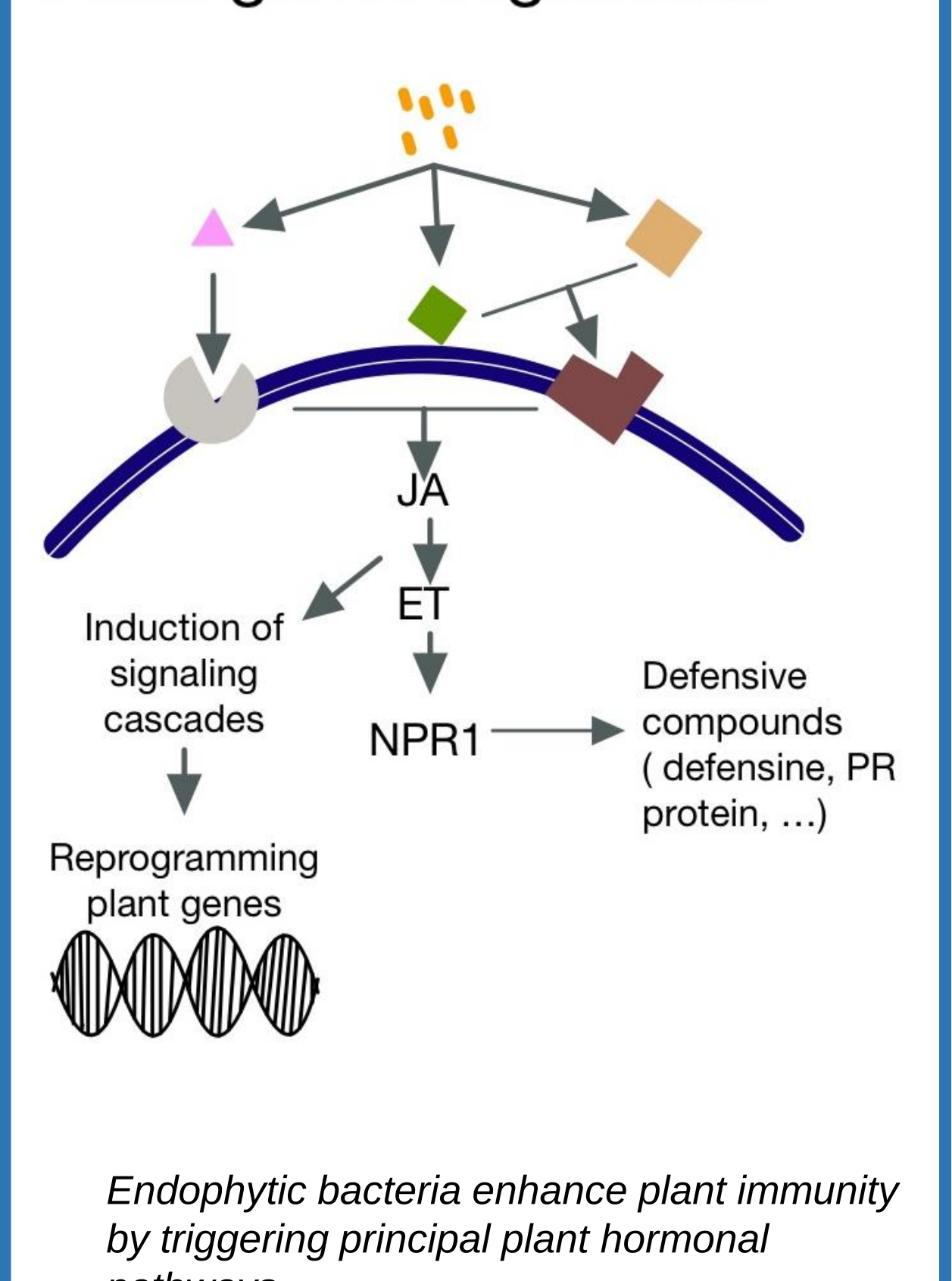
Synthesis of compounds



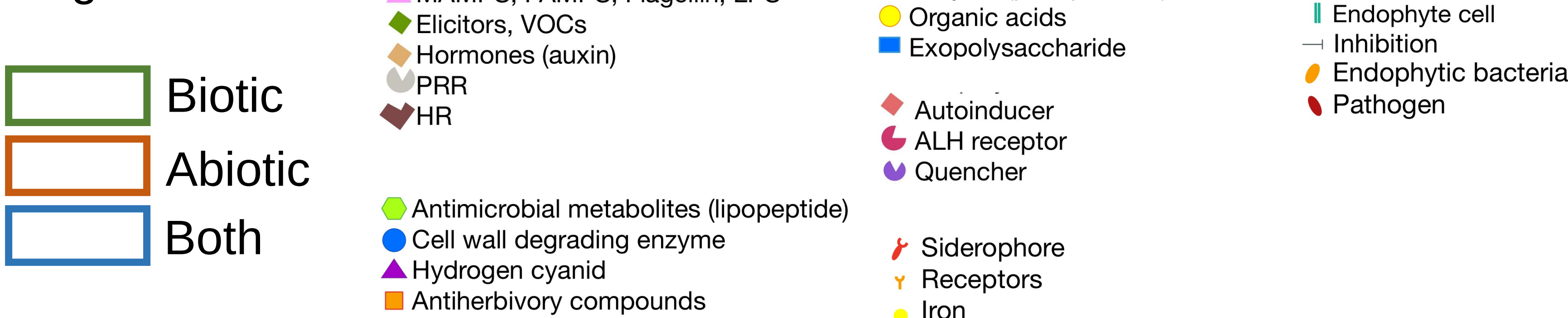
Quenching quorum sensing



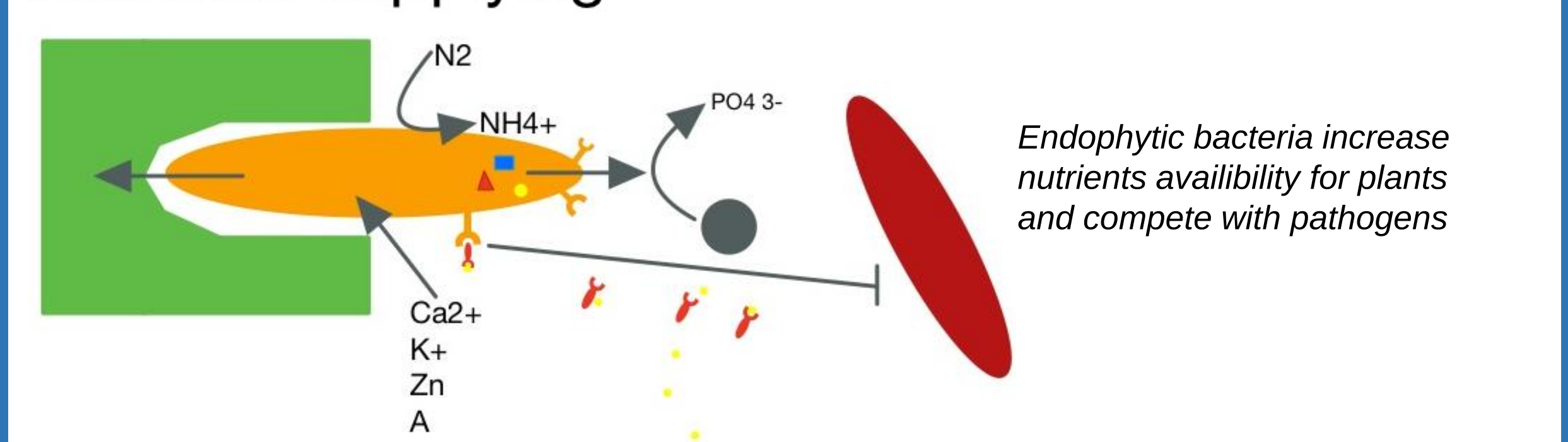
Plant genes regulation



Legend



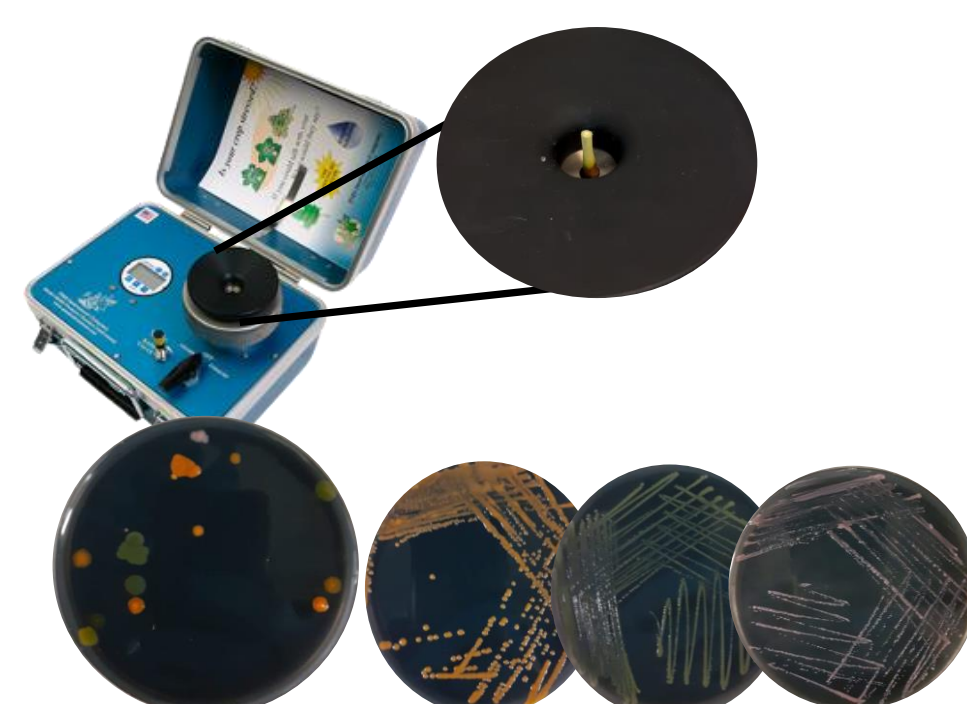
Nutrients supplying



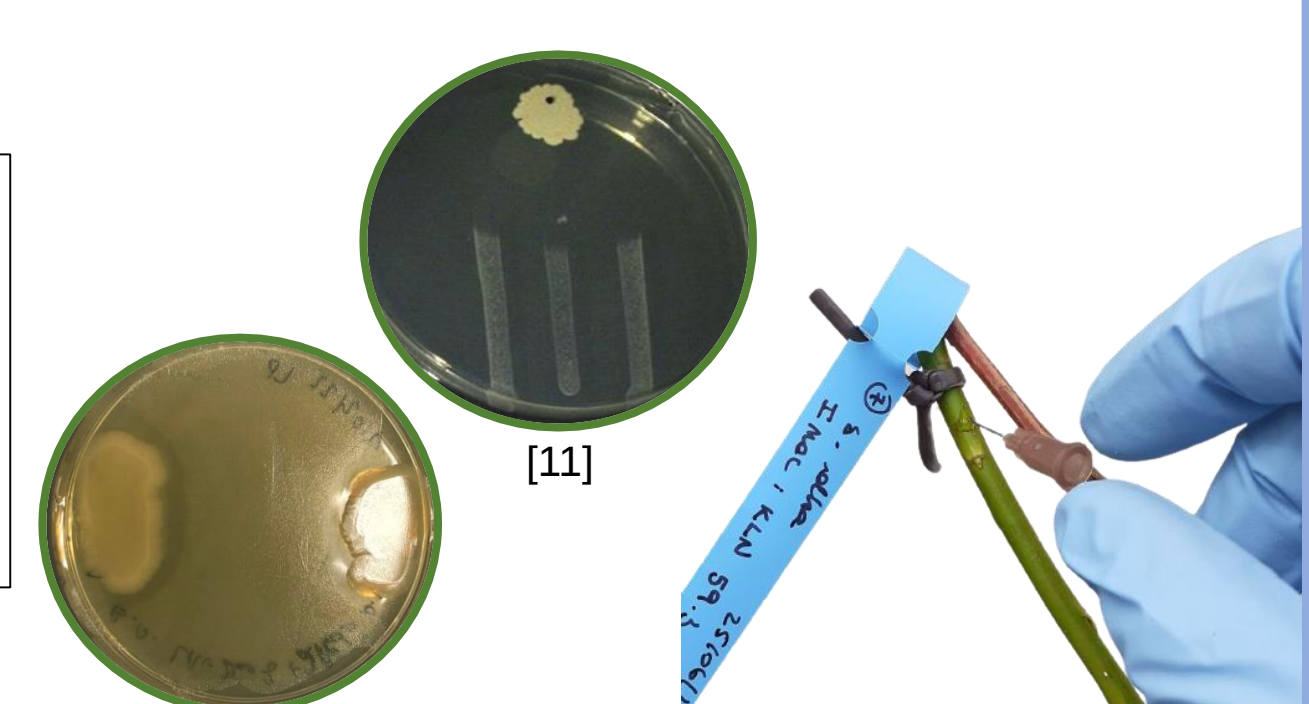
Research projects in plant health laboratory

Improving plant resistance to **biotic** stress : interactions between endophytic and phytopathogenic bacteria

Objective 1 : Identifying the xylem endophyte populations of *Salix* and *Populus* genera through isolation and/or metagenomic process



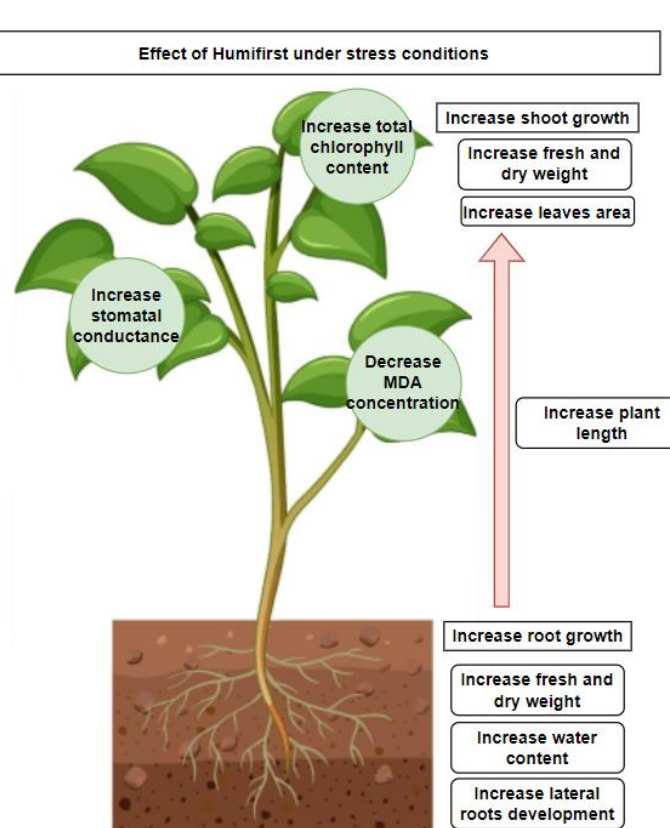
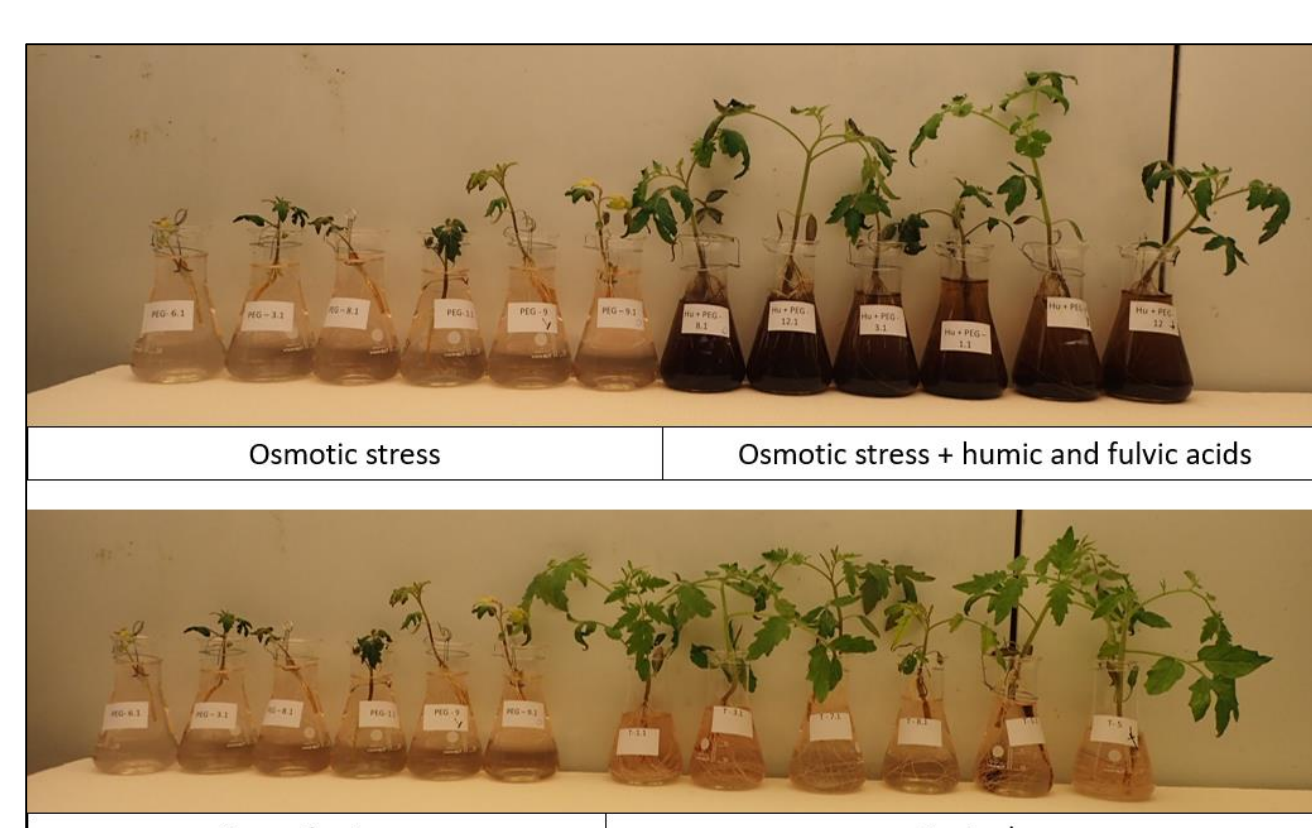
Objective 2 : Identifying endophytic communities interactions with *Brenneria salicis* and *Xylella fastidiosa* through *in vitro* and *in vivo* confrontation



Lena Pesenti with Pr. Claude Bragard

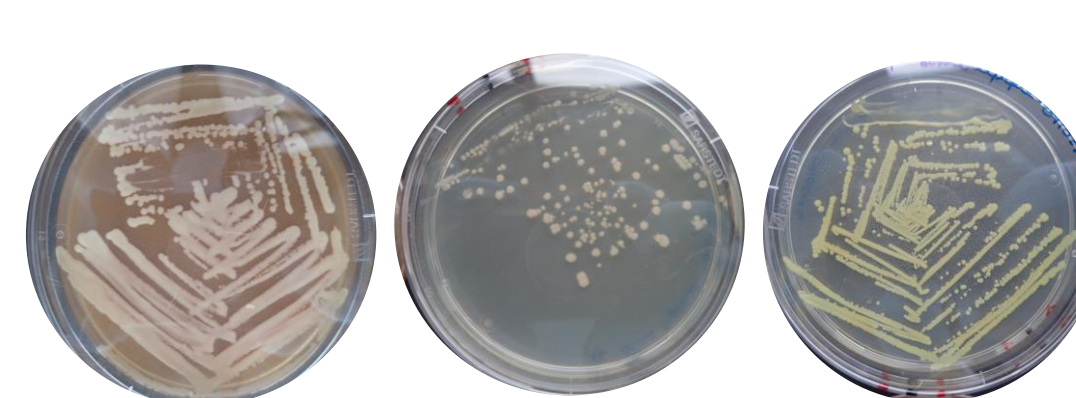
Improving **abiotic** stress resistance : the role of endophytic bacterial community in the mechanism of action of humic and fulvic acids based biostimulant

Objective 1 : Studying the effects of humic and fulvic acids on tomatoes under osmotic stress



Objective 2 : Comparing endophytic bacterial communities of plants treated or not with the biostimulant

Isolation on media



Metagenomic analysis



Salomé Lengrand with Pr. Anne Legrève and Pr. Xavier Draye

[1] Khare et al., 2018, doi: 10.3389/fmicb.2018.02732
[2] Oukola et al., 2021, <https://doi.org/10.3390/plants10051012>
[3] Papik et al., 2020, <https://doi.org/10.1016/j.biotechadv.2020.107614>
[4] Reinhold-Hurek & Hurek, 2011, doi: 10.1016/j.pbi.2011.04.004
[5] Sanchez-Caniarez et al., 2017, <http://dx.doi.org/10.1016/j.mib.2017.07.001>

[6] Hardoim et al., 2008, doi:10.1016/j.tim.2008.07.008
[7] Liu et al., 2017, doi: 10.3389/fmicb.2017.02552
[8] Brader et al., 2017, doi: 10.1146/annurev-phyto-080516-035641
[9] Pandey et al., 2019, <https://doi.org/10.1007/s00203-019-01642-y>
[10] Bacon et al., 2016, DOI 10.1007/s13199-015-0350-2
[11] Zicca et al., 2020, <https://doi.org/10.1016/j.micres.2020.126467>