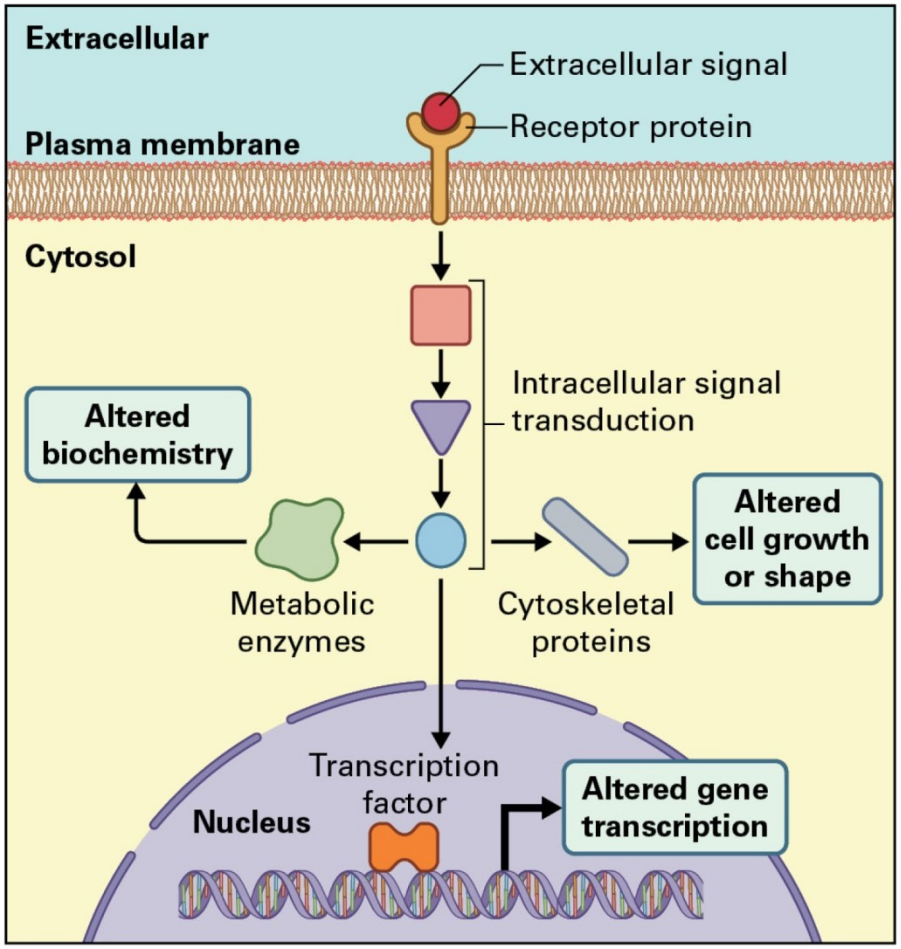
FACULTY
OF SCIENCE
Masaryk University

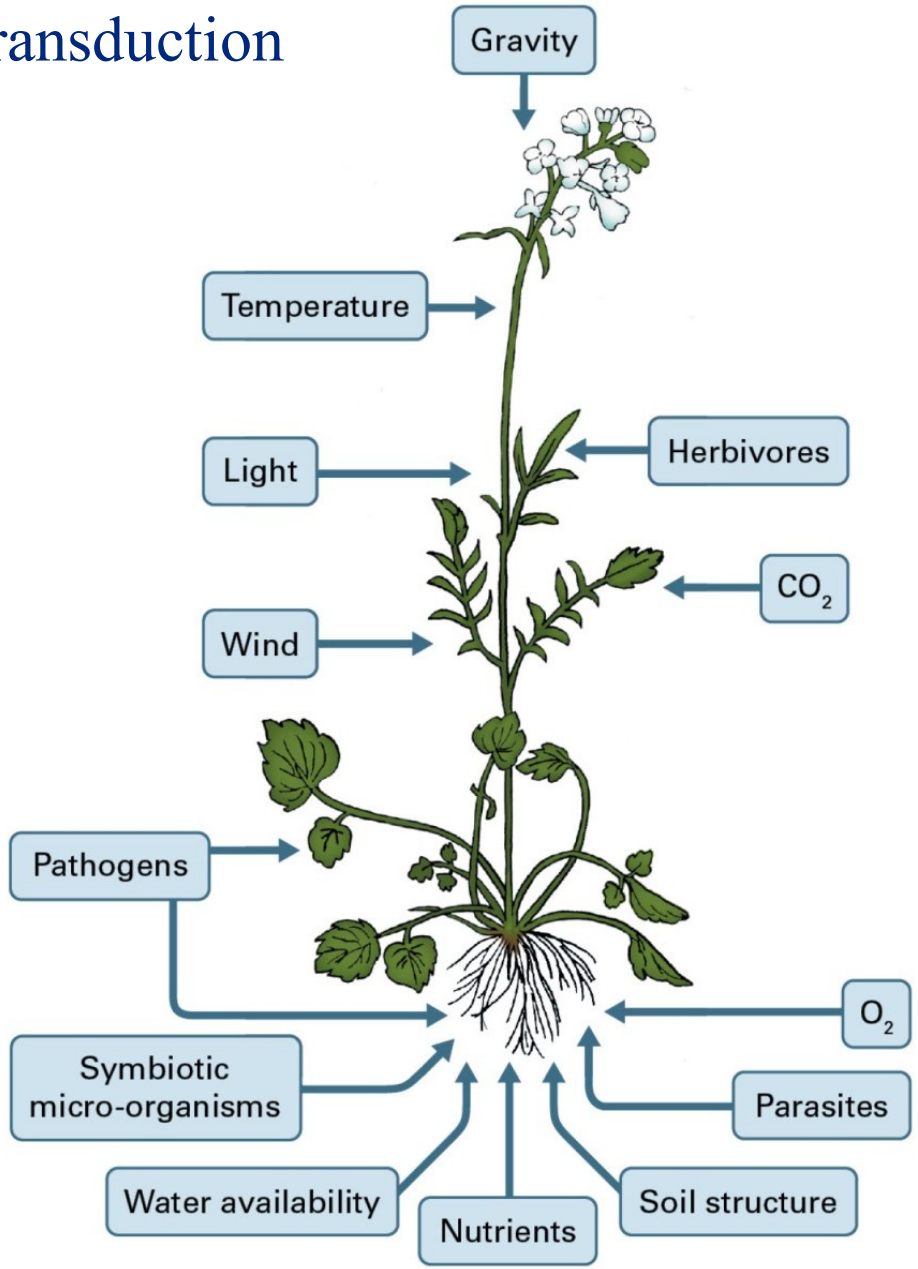
Hormones and Signal Transduction

Katerina Dadakova, Department of Biochemistry

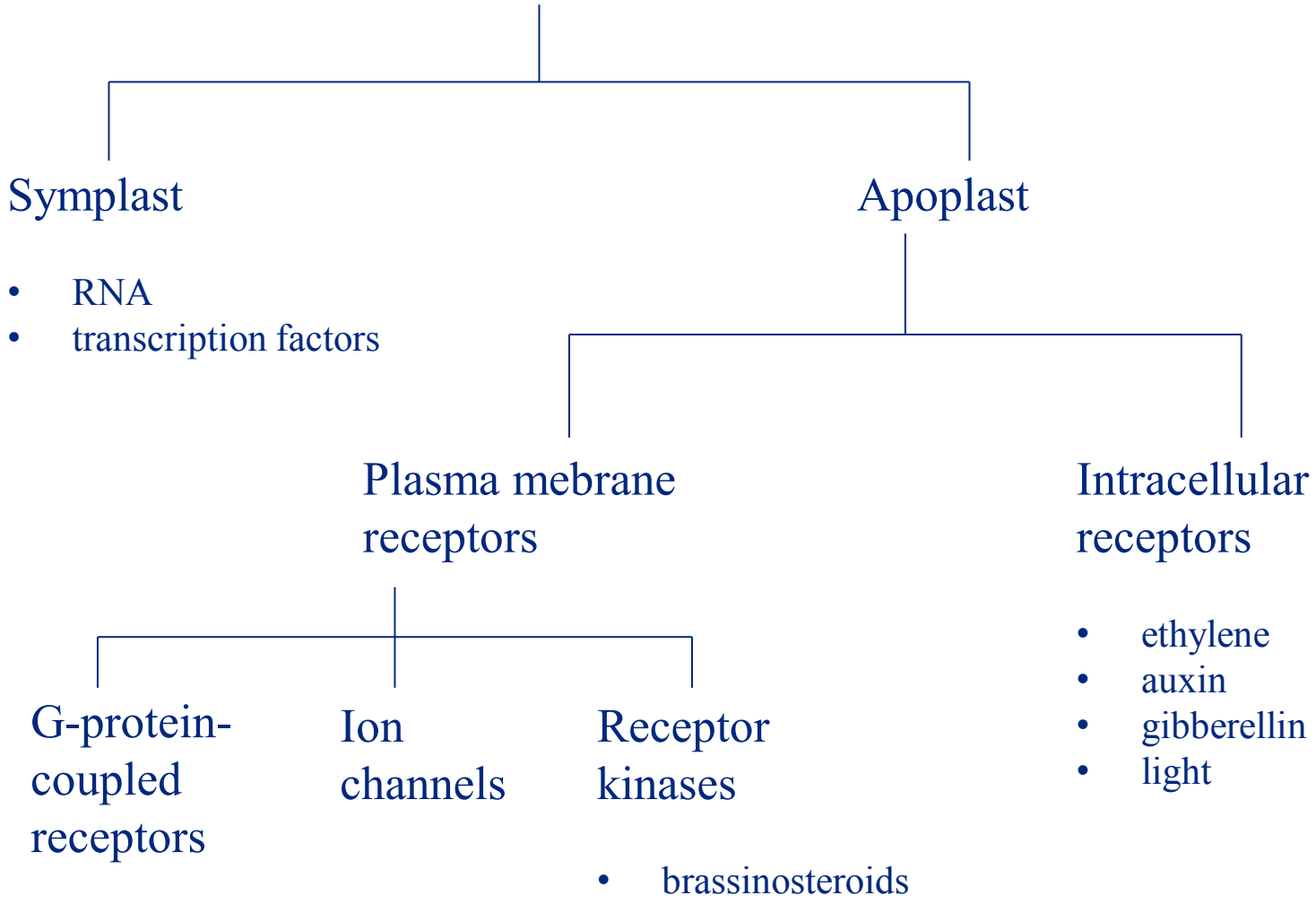
Figures adopted from Buchanan et al., Biochemistry & molecular biology of plants

Signal transduction

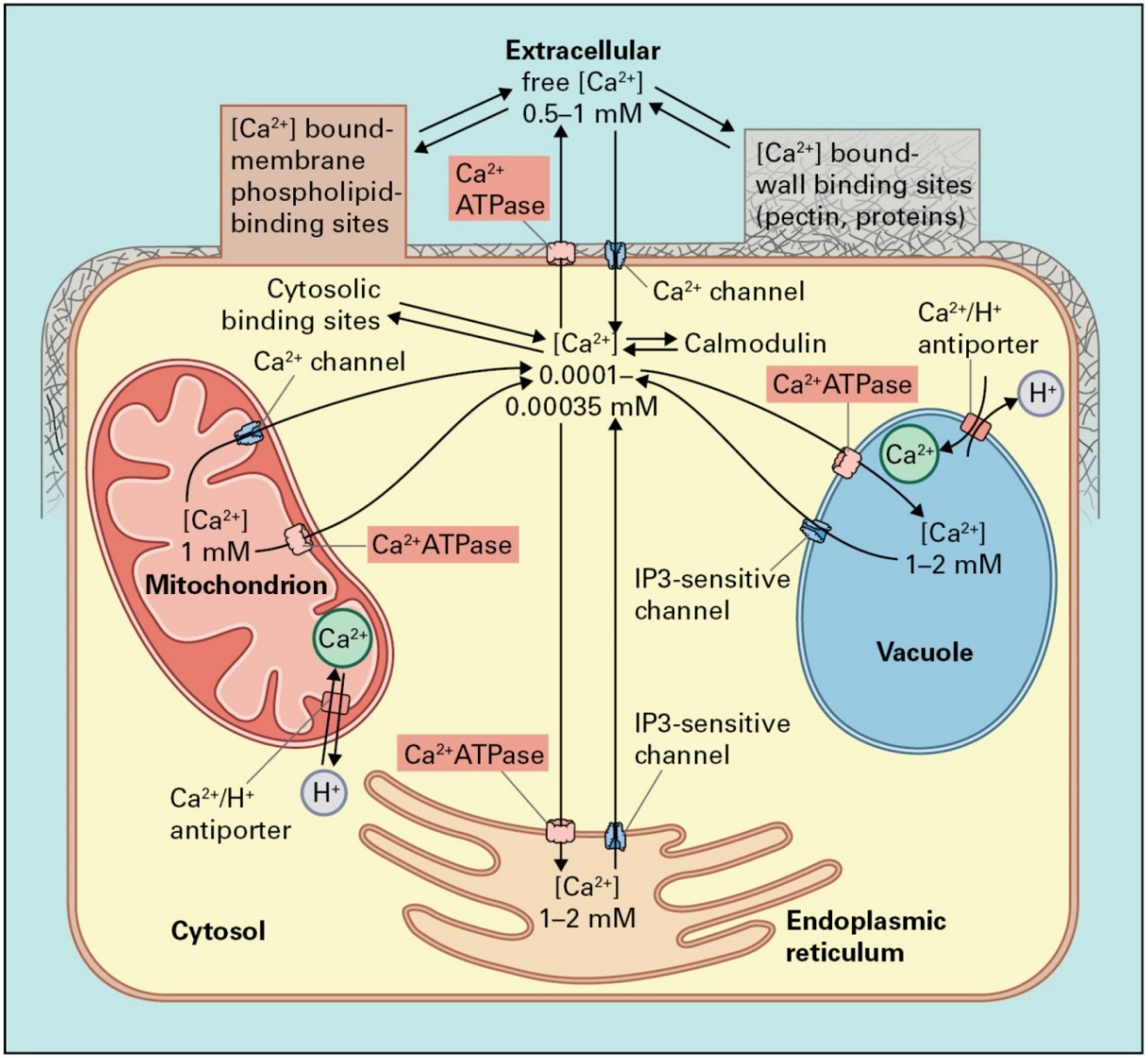




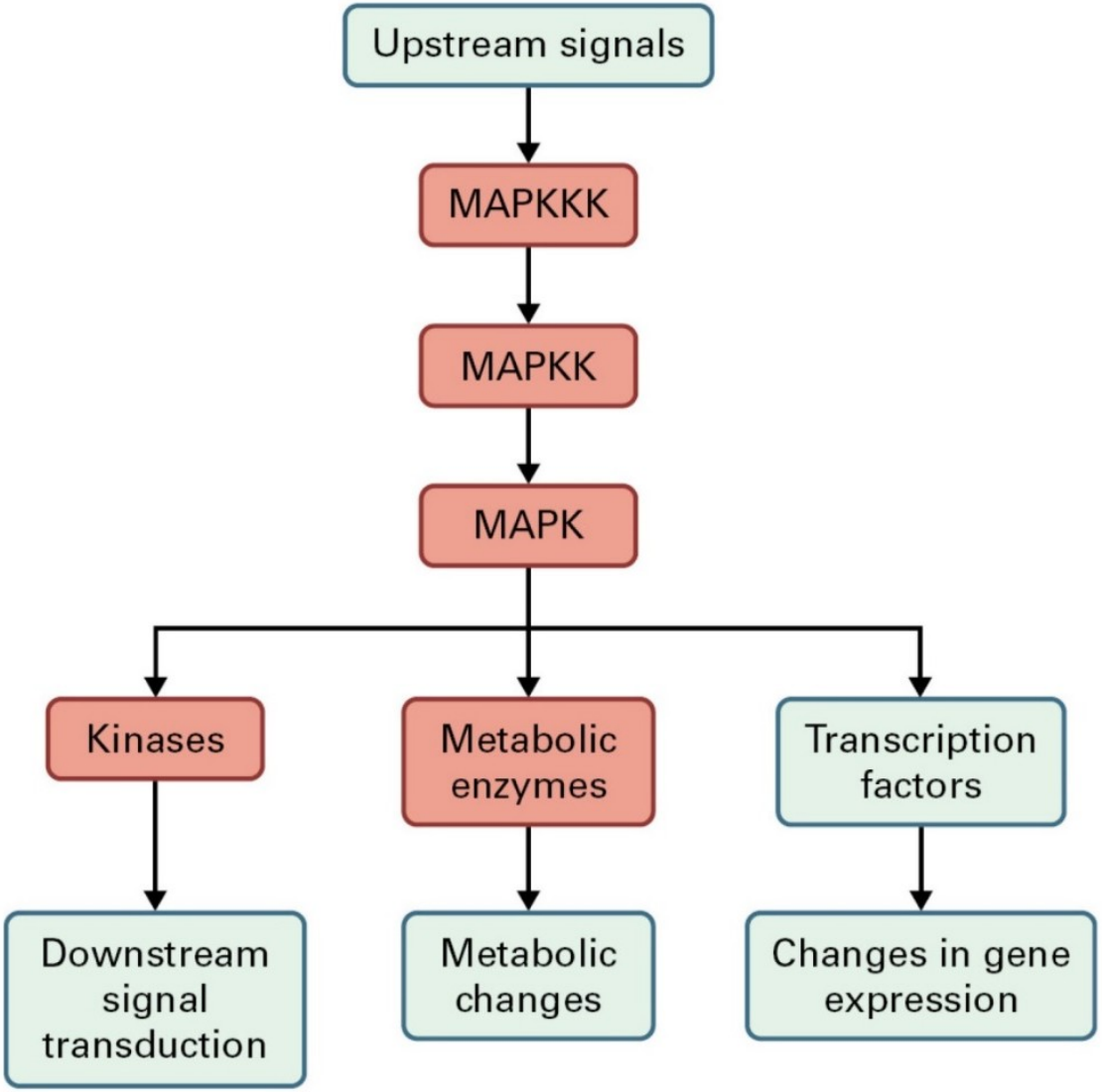
Signal perception

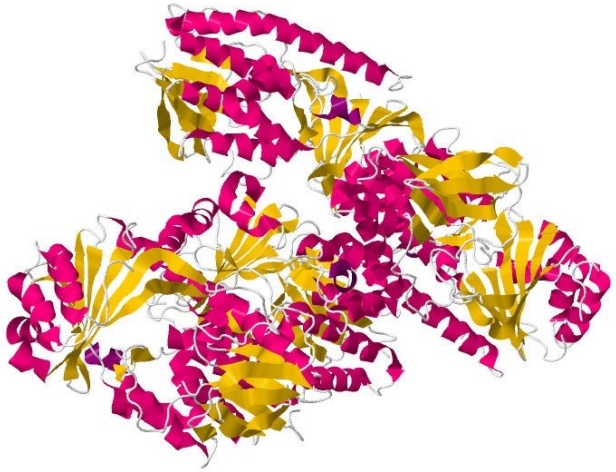


Second messengers



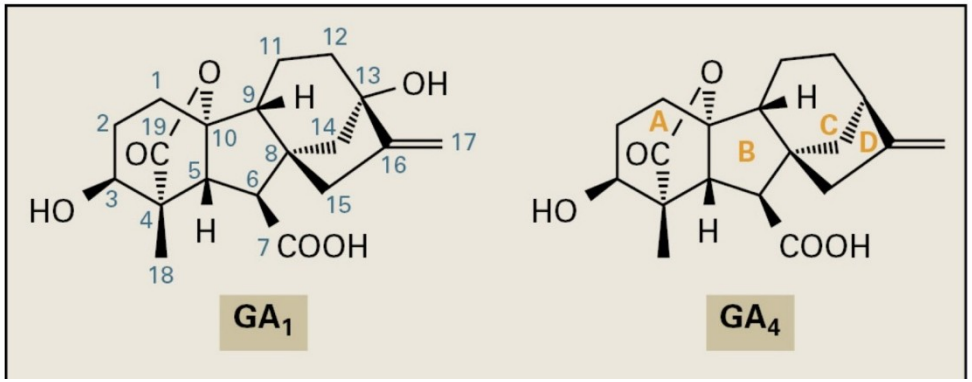
MAPK cascades and Phytohormones



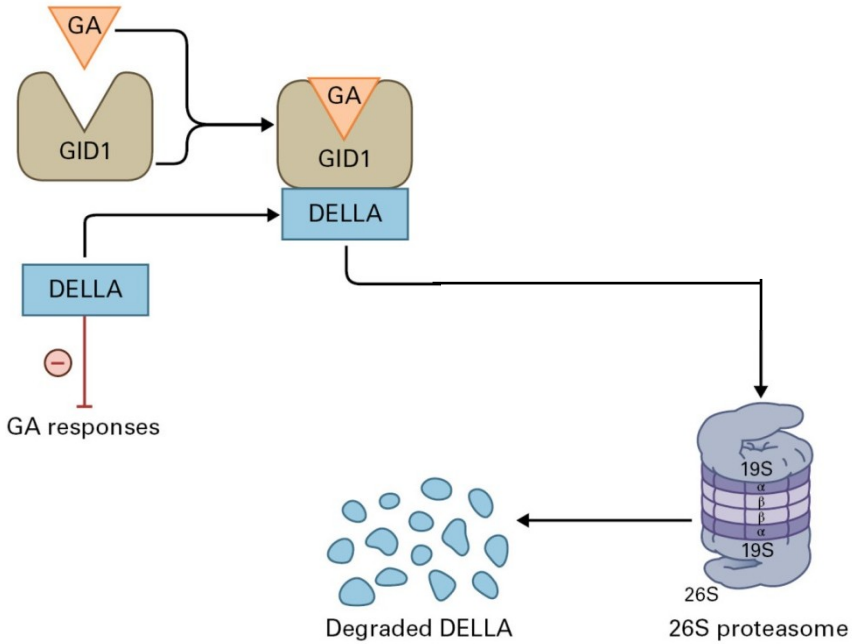


Monooxygenase
By Jmol Development Team/Briana Miller - Jmol, GPL, https://commons.wikimedia.org/w/index.php?curid=15026248

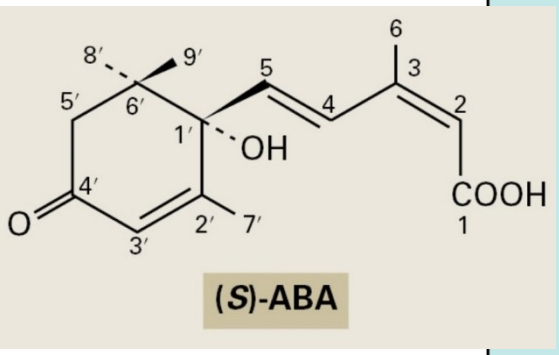
Gibberellins

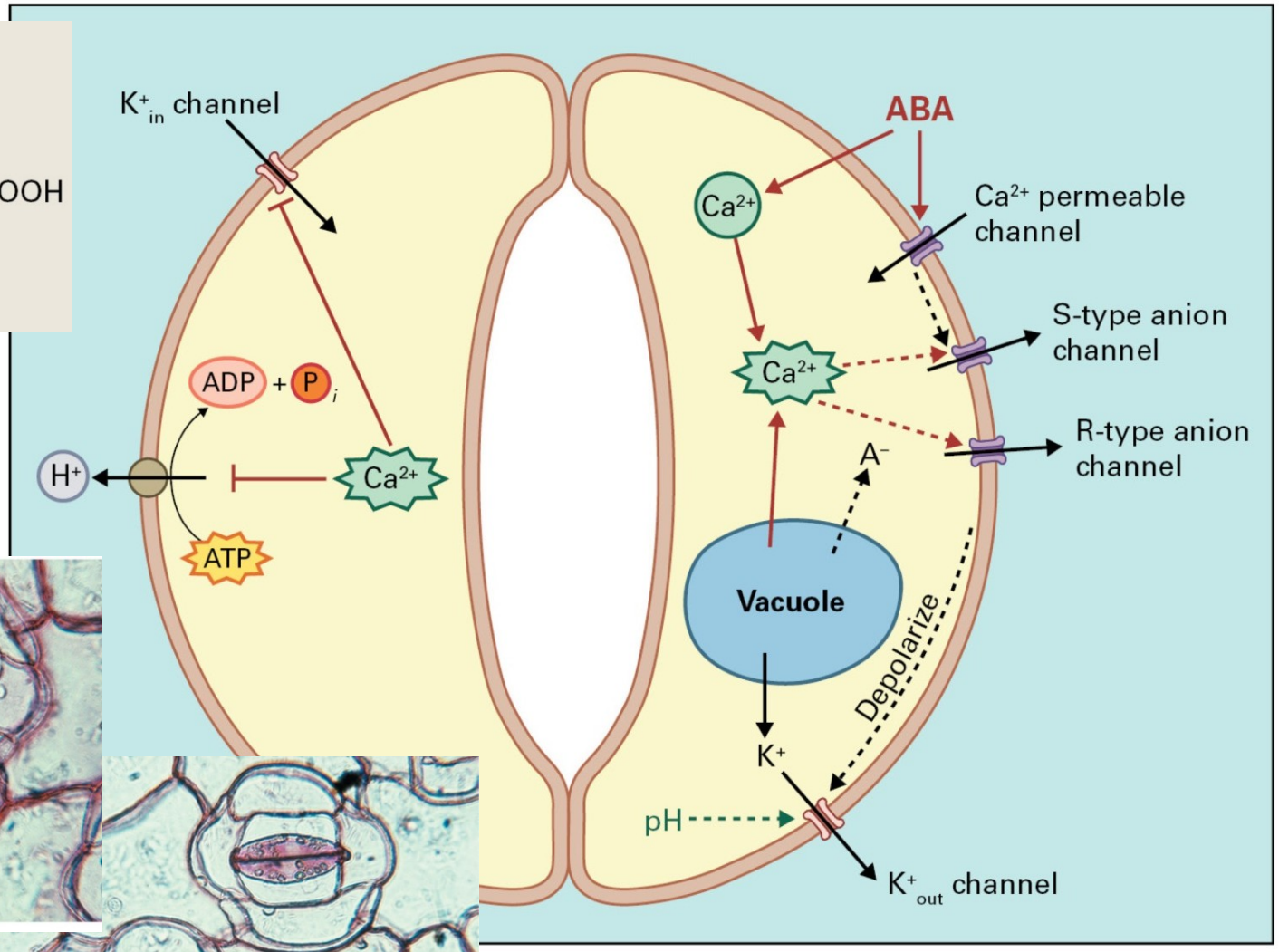


Effect of GA_3 on stem elongation.
left: control plant
right: plant 7 days after treatment with GA_3



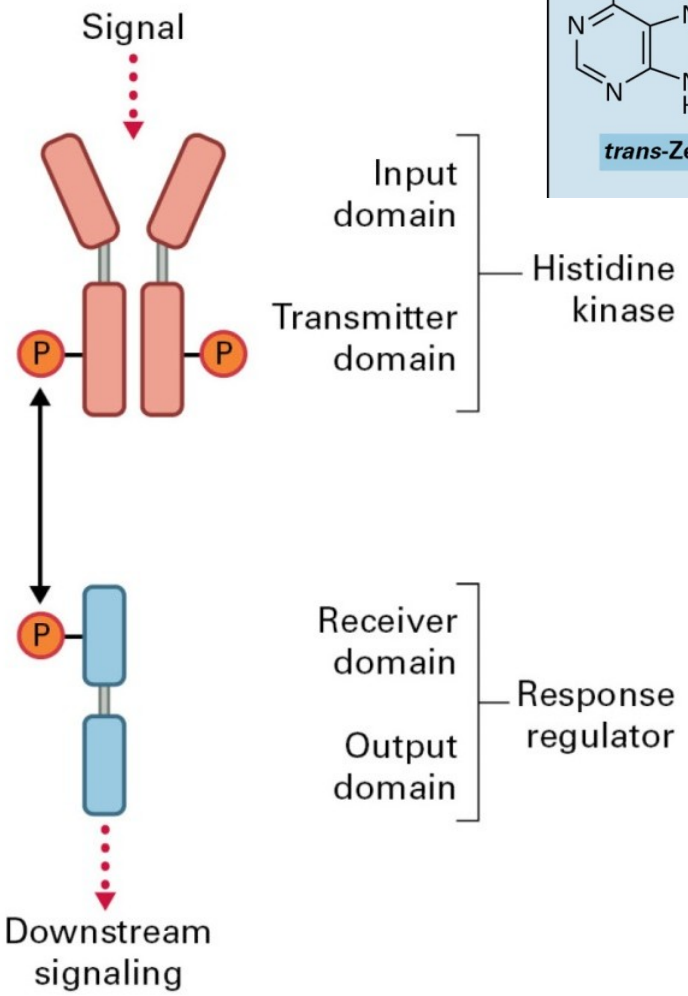
Abscisic acid

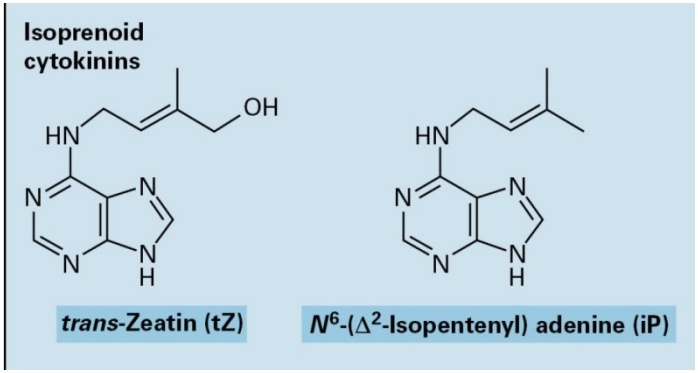


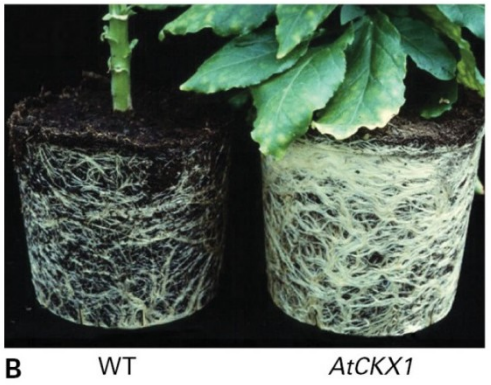


Cytokinins

The two-component system

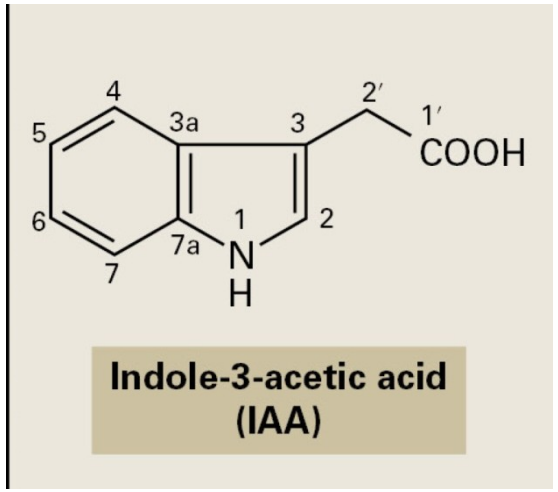


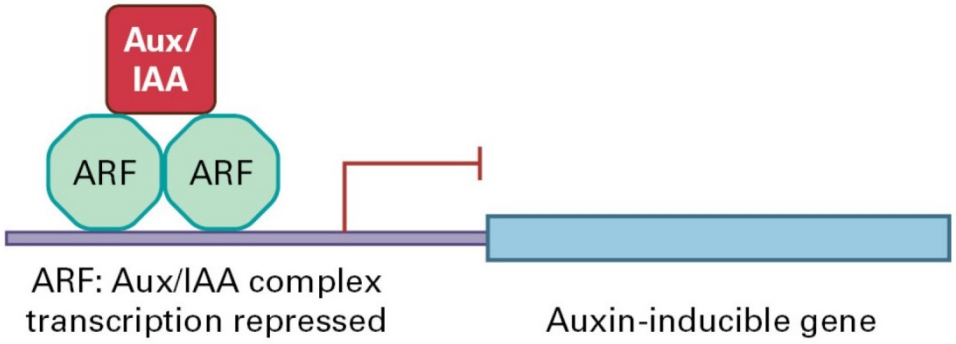




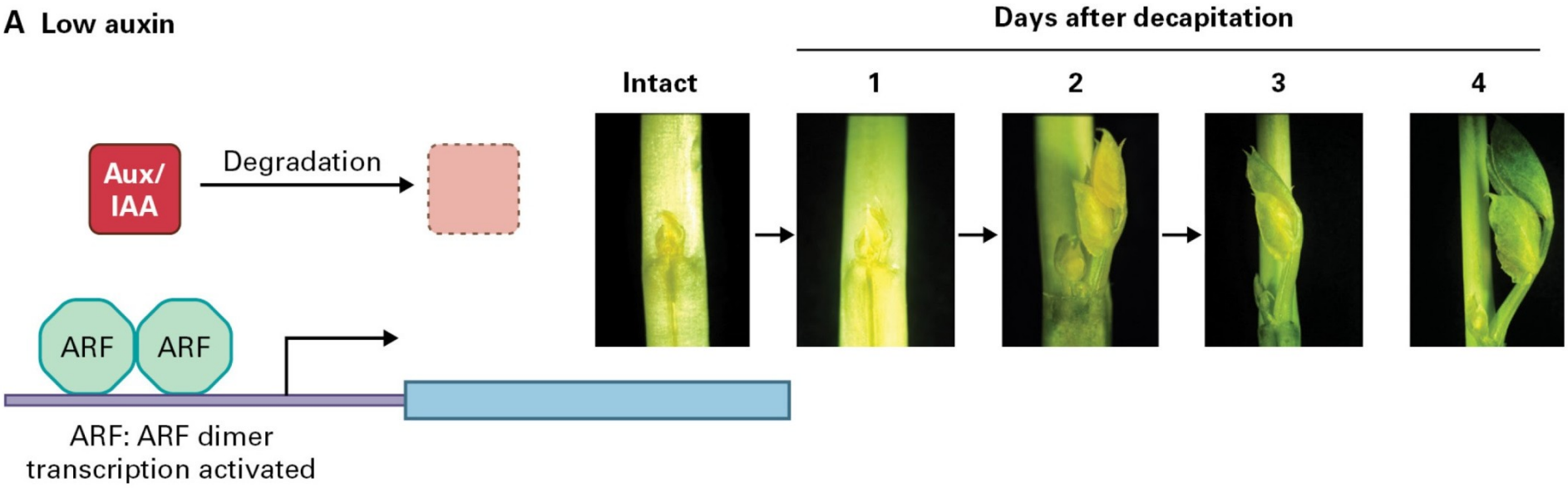
Transgenic plants *AtCKX* have lower CK content compared to wild-type.

Auxin



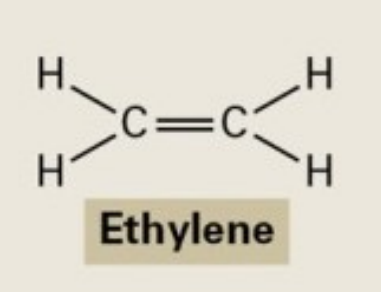


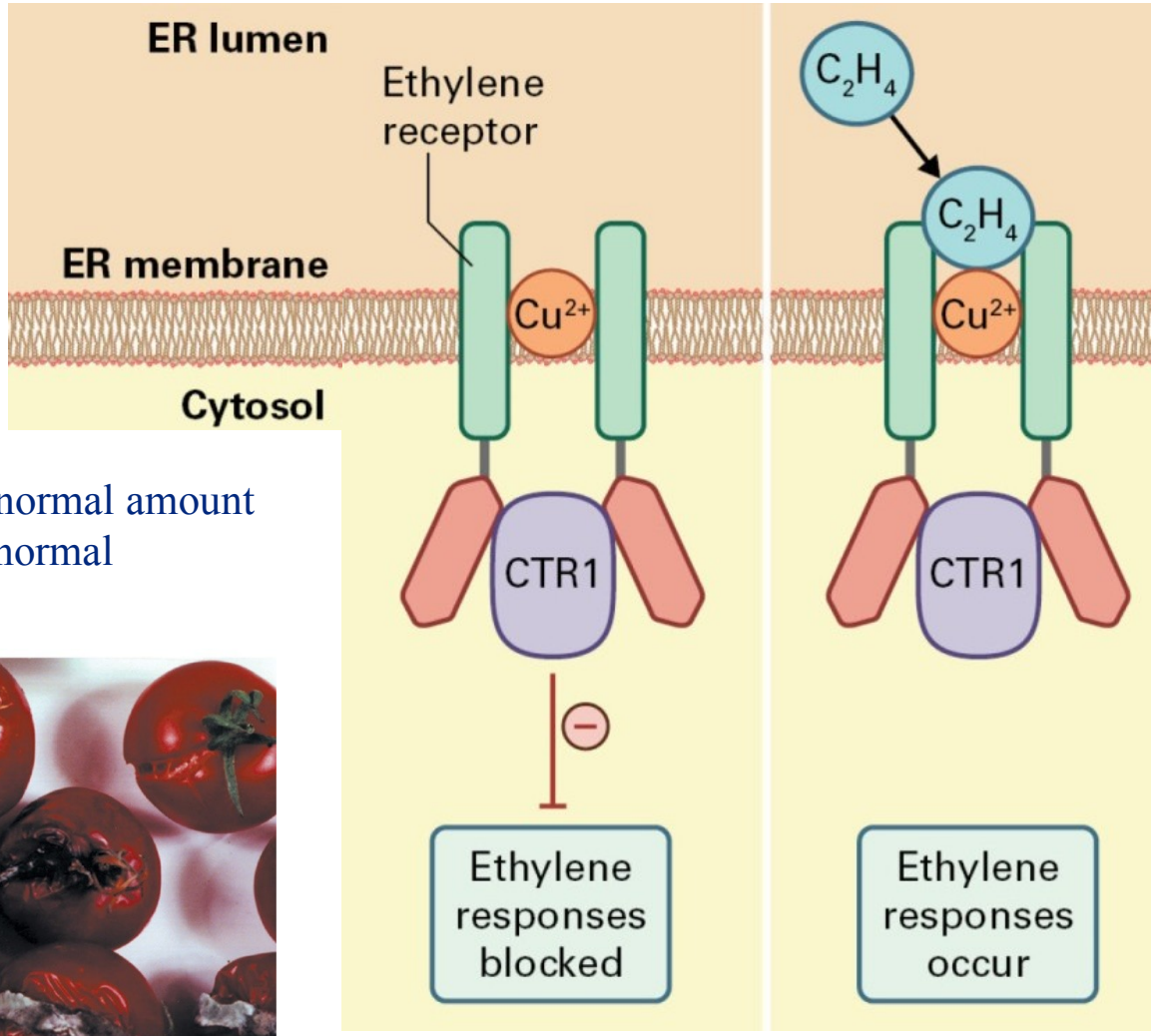
A Low auxin



B High auxin

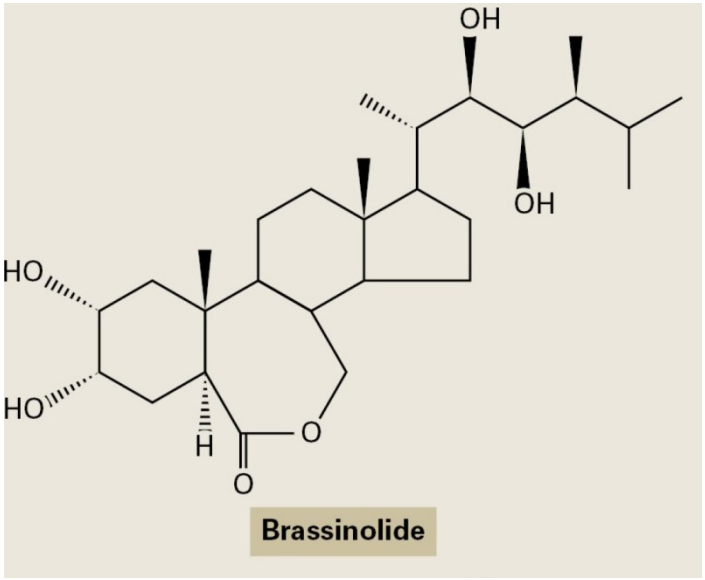
Ethylene





Left: Fruits, which generate about 5 % of normal amount of ethylene. Right: Fruits, which produce normal amounts of ethylene.

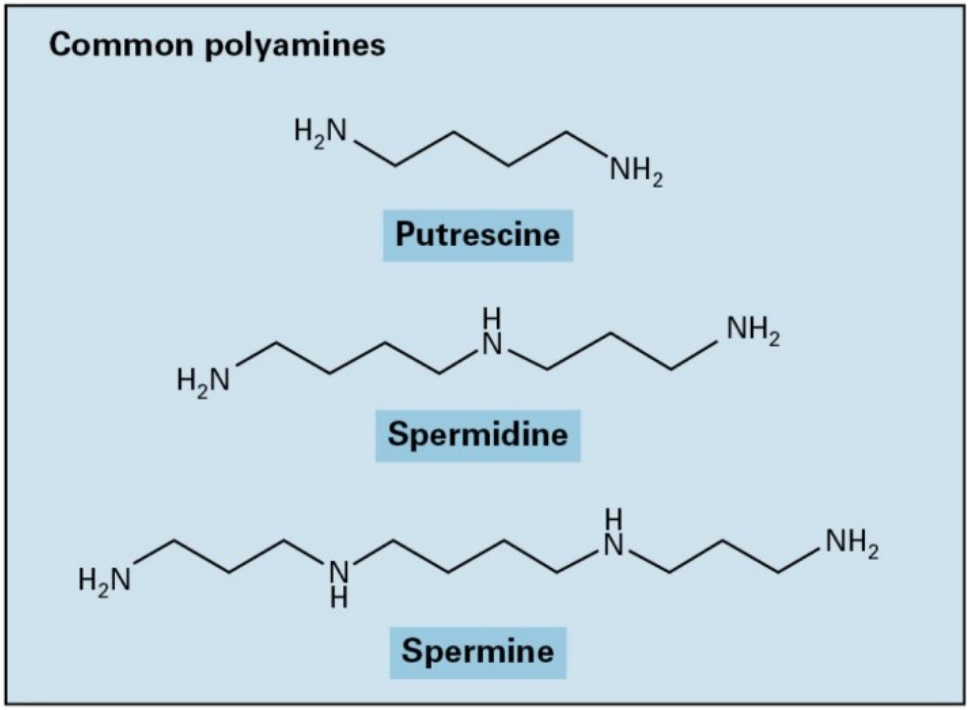
Brassinosteroids

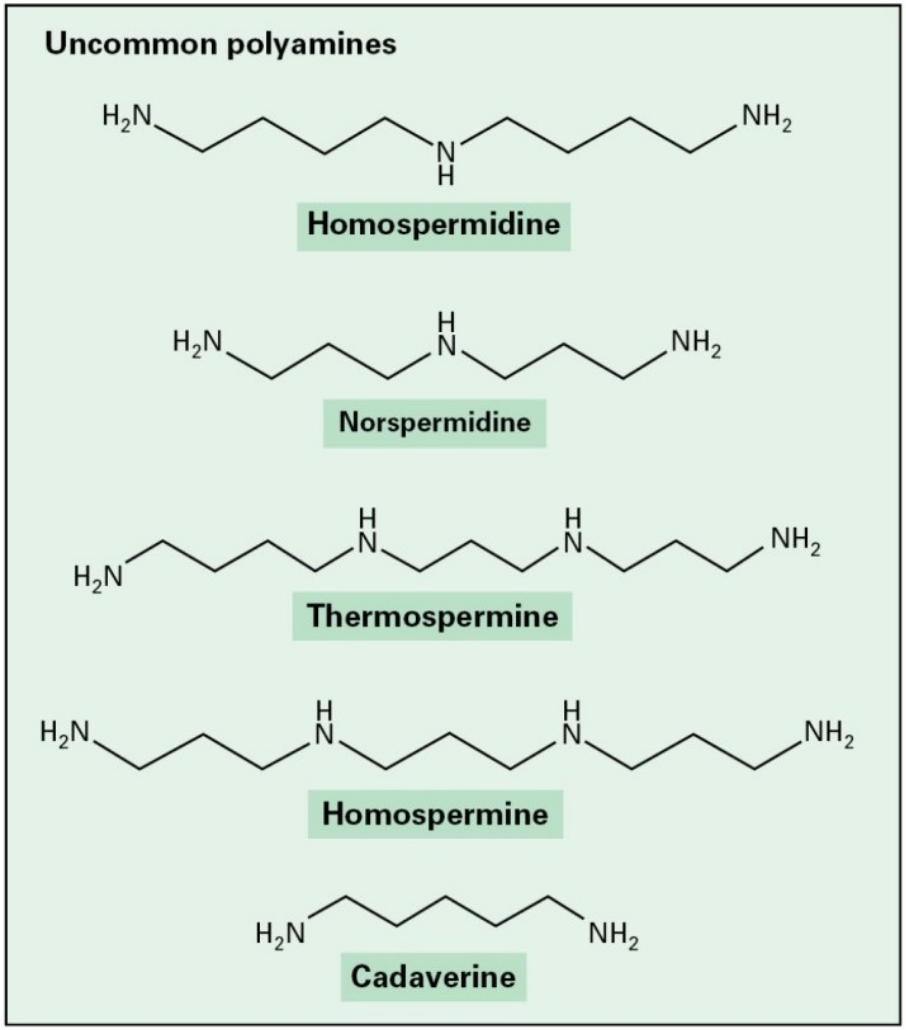


Brassinolide

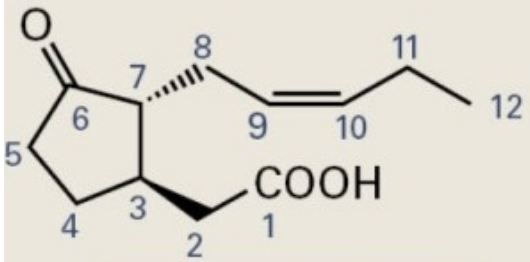
Wild-type and BL-defficient Arabidopsis plant

Polyamines

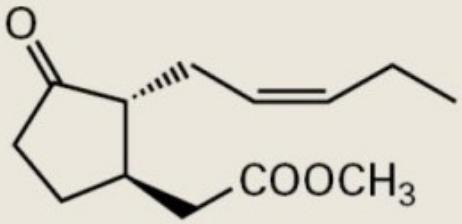

Common polyamines
Putrescine
Spermidine
Spermine


Uncommon polyamines
Homospermidine
Norspermidine
Thermospermine
Homospermine
Cadaverine

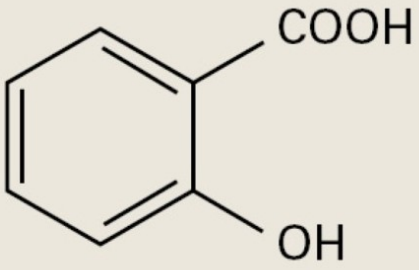
Jasmonic acid and Salicylic acid



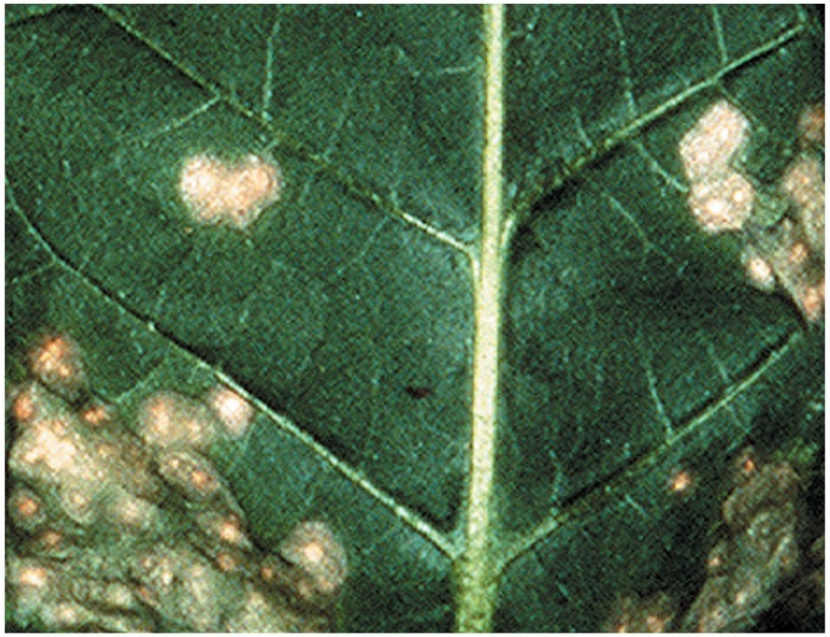
(–)-Jasmonic acid



Methyl (–)-jasmonate

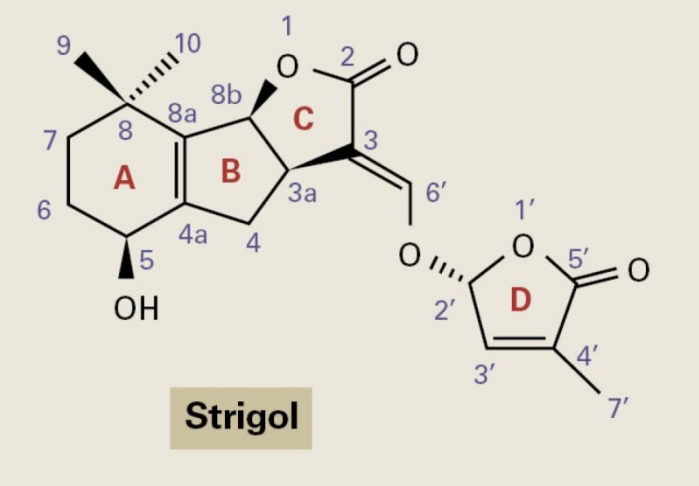


Salicylic acid

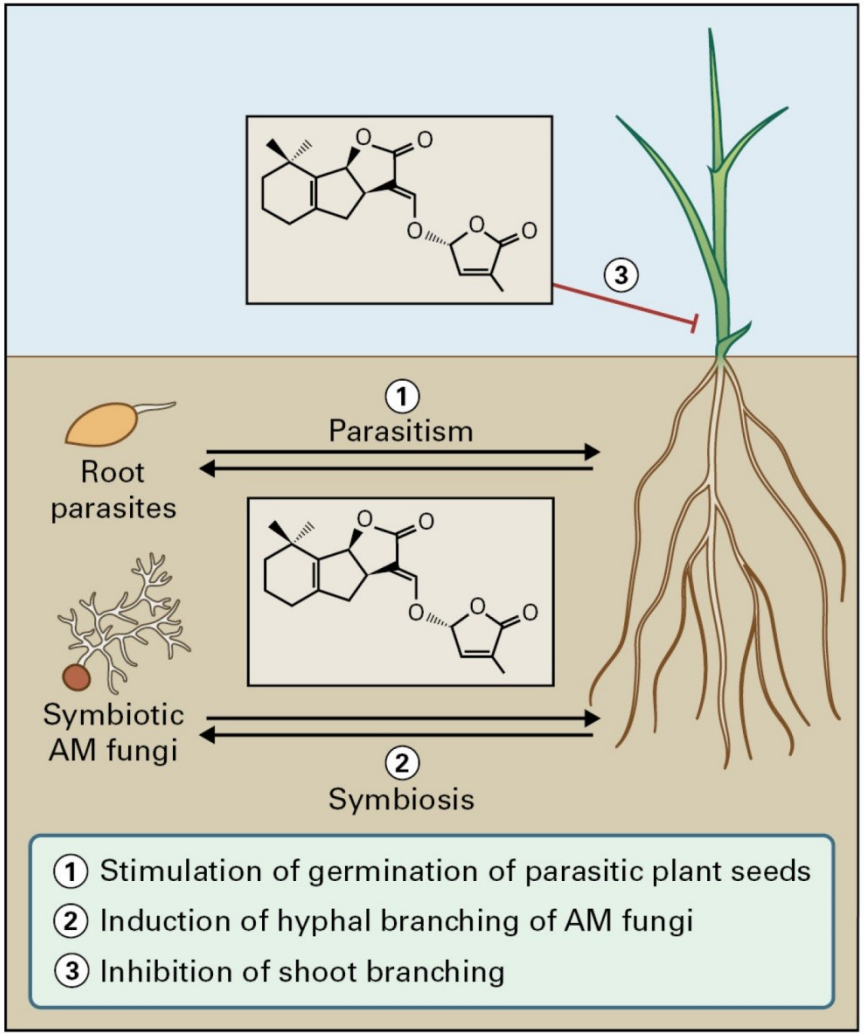


Necrotic lesions on the leaf of tobacco

Strigolactones



– +GR24



Plant photoreceptors

Phytochromes