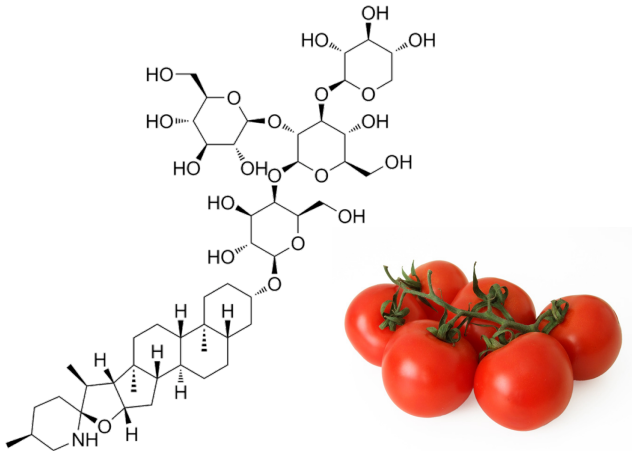
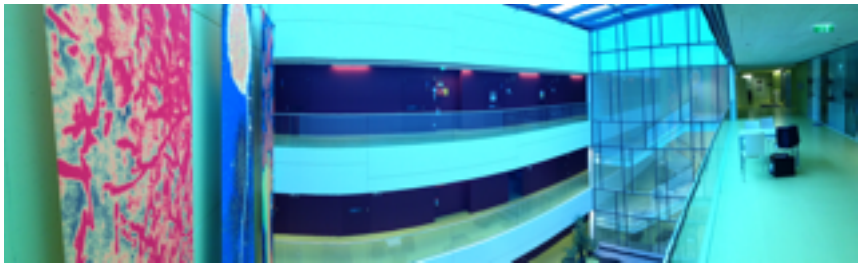
PHYTORAF

Kaskadische Nutzung von pflanzlichen Verarbeitungs- und Ernteabfällen





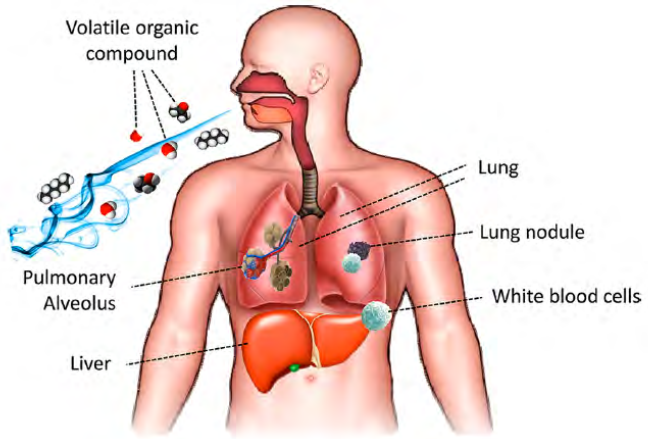
Ao. Univ. Prof. Mag. Dr. Florian Überall, PhD
Center for Chemistry and Biomedicine
Division of Medical Biochemistry, Nutritional Biochemistry & Nutrigenomics
Innsbruck Medical School,
Innrain 80-826020 Innsbruck, Austria
Mail**: florian.ueberall@i-med.ac.at**

FFG

Communication systems

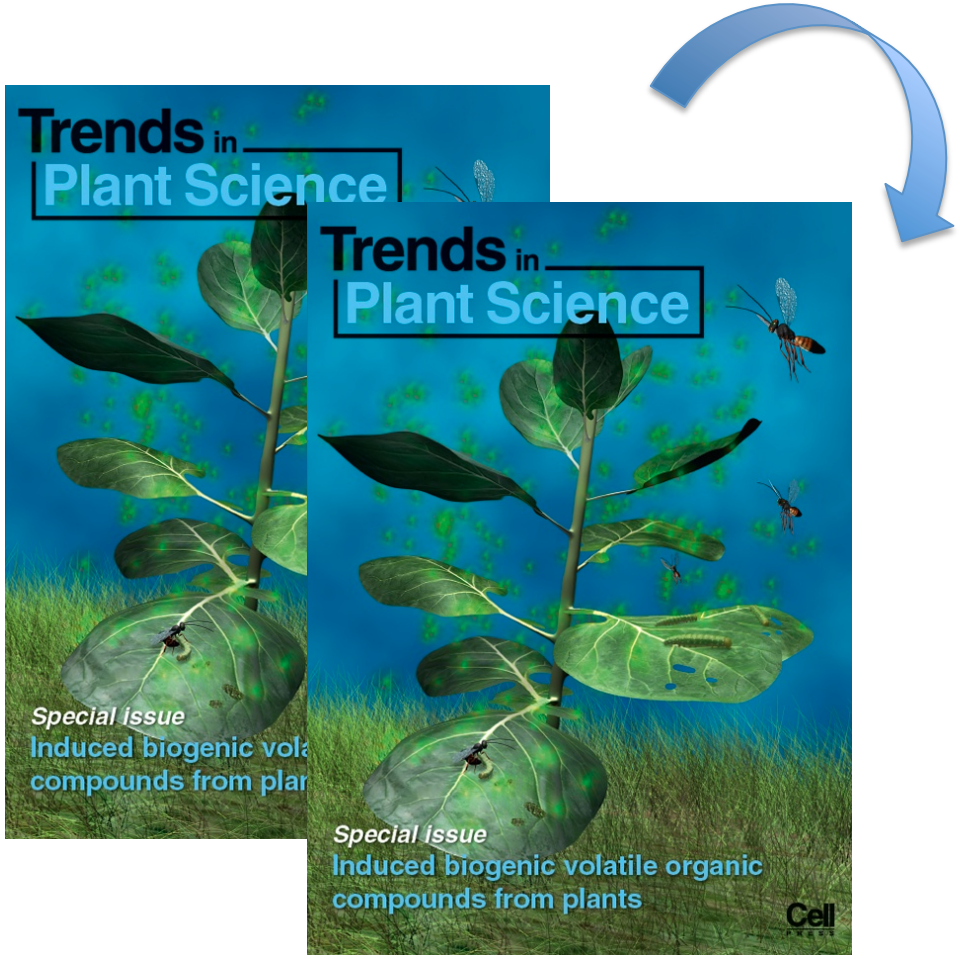
Verbal communication systems

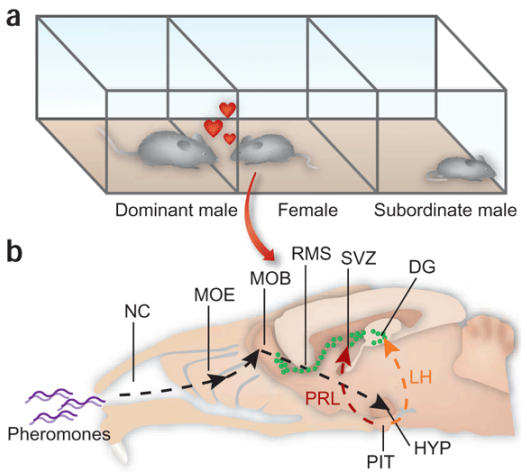
Non-verbal communication systems



Volatile organic compounds

Plant communication systems



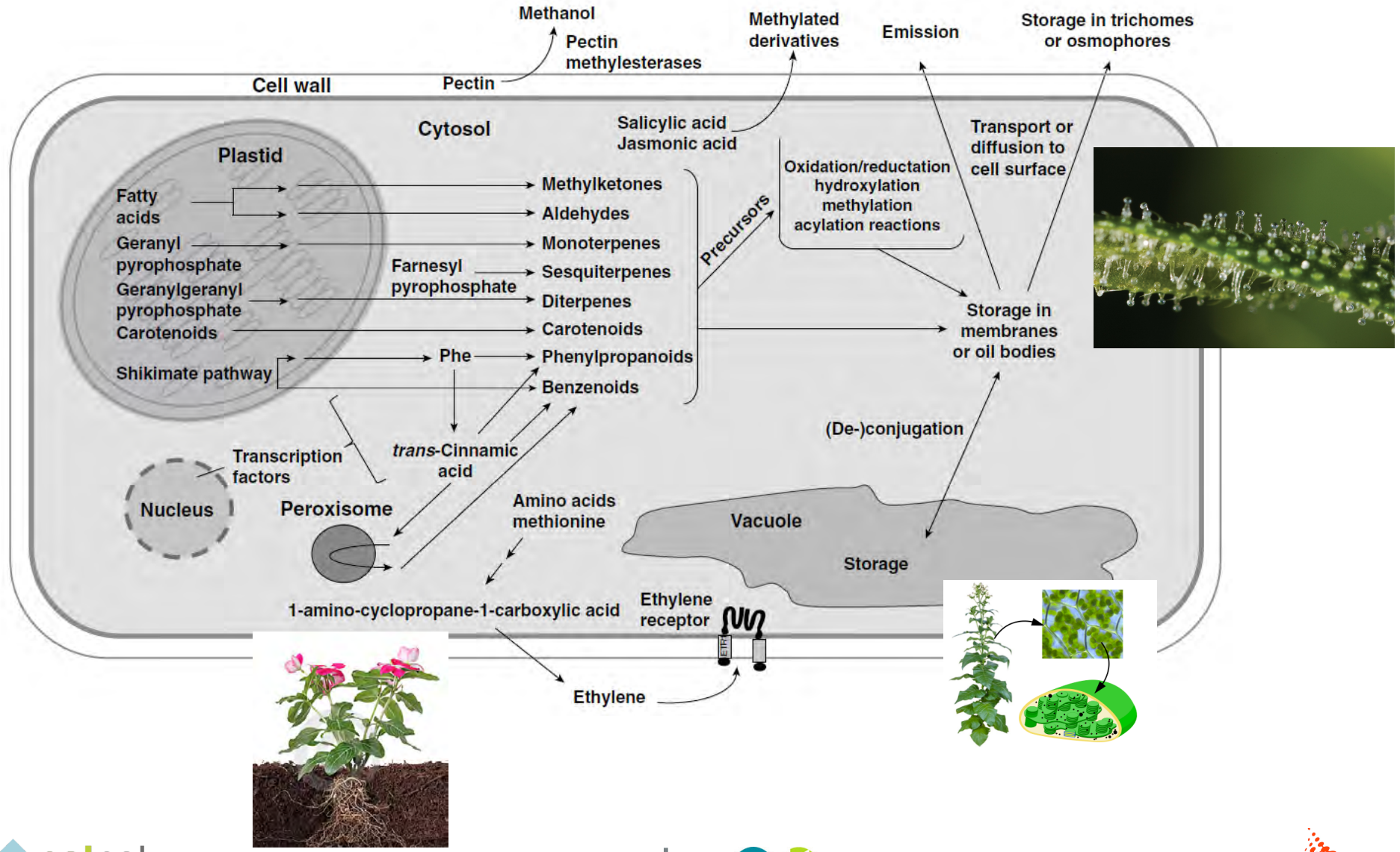


Allelopathy

Volatilome

Pheromones

Synthesis of volatile plant VOCs/Allelos



Scientific aims

SCIENTIFIC AIMS

(1) Optimisation of extraction methods for allelochemical containing herbs or crop (waste)

(2) Development of a bioprocessing procedure for the enrichment of selected alleochemicals in plant cell cultures

EXPERIMENTAL DESIGN

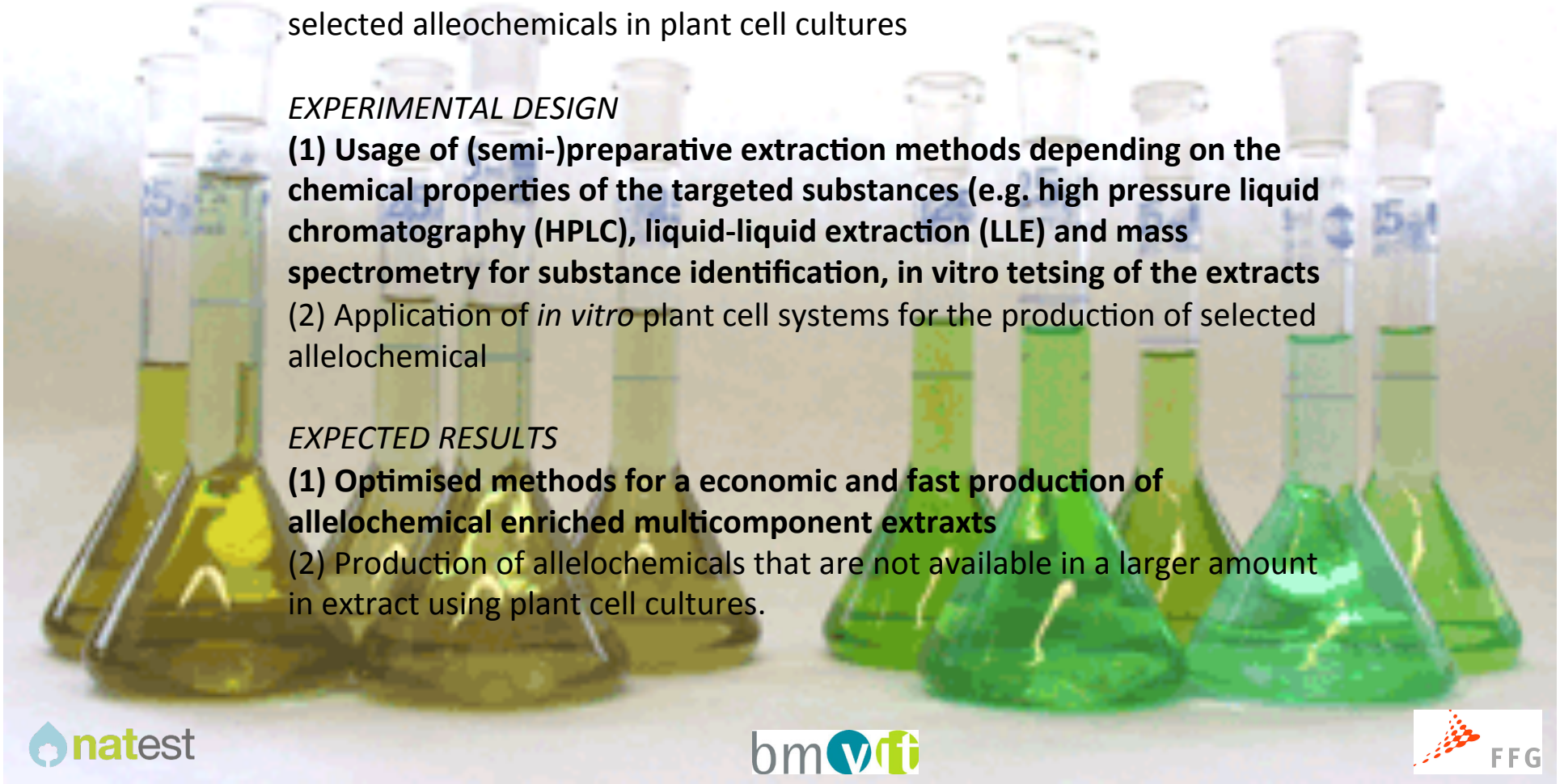
(1) Usage of (semi-)preparative extraction methods depending on the chemical properties of the targeted substances (e.g. high pressure liquid chromatography (HPLC), liquid-liquid extraction (LLE) and mass spectrometry for substance identification, in vitro tetsing of the extracts

(2) Application of *in vitro* plant cell systems for the production of selected allelochemical

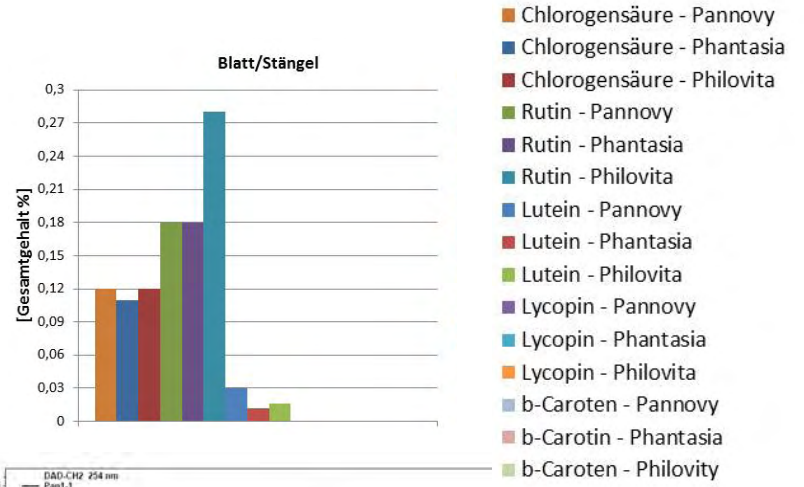
EXPECTED RESULTS

(1) Optimised methods for a economic and fast production of allelochemical enriched multicomponent extraxts

(2) Production of allelochemicals that are not available in a larger amount in extract using plant cell cultures.




Trends in
Plant Science
Special issue
Induced biogenic volatile organic compounds from plants
Cell
PRESS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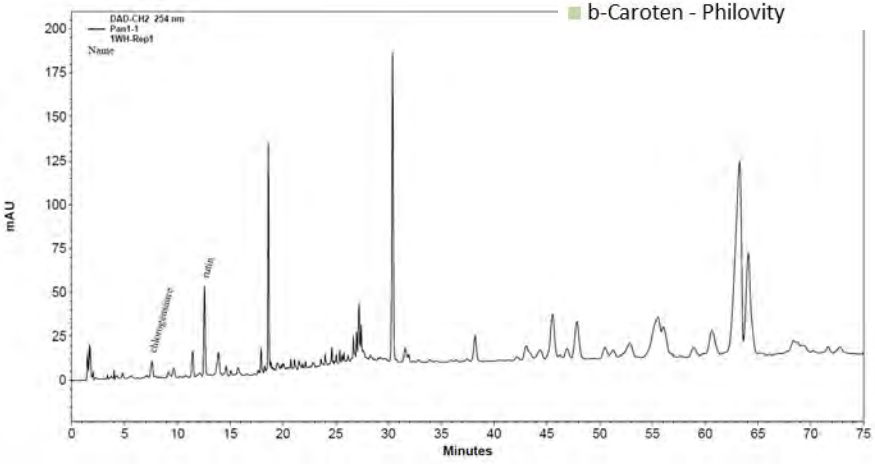
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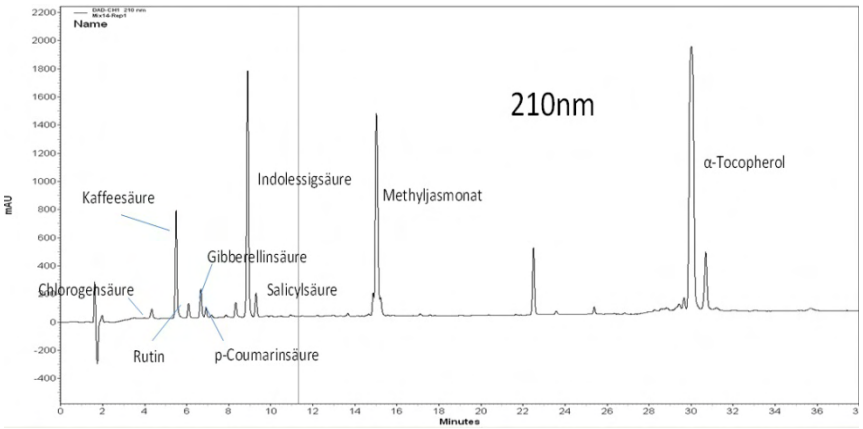
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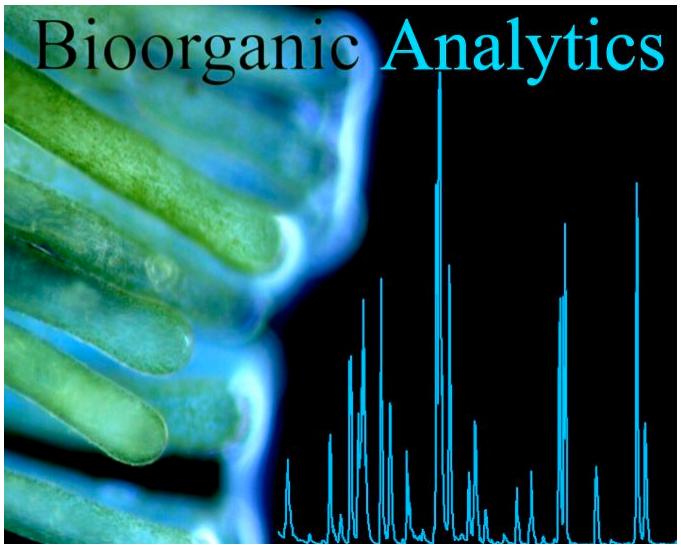
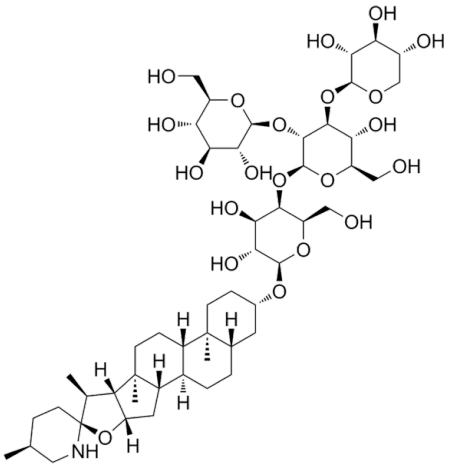
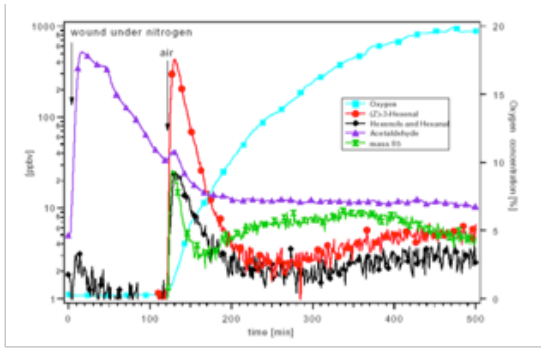
α-Tocopherol

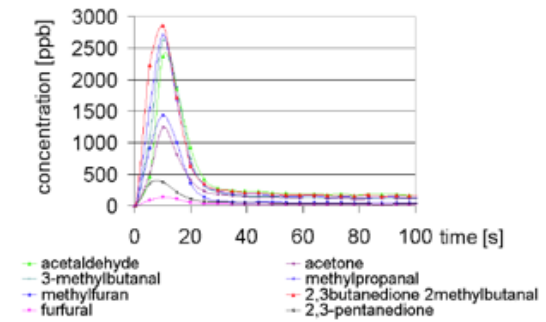
Agricultural crop residues as an Alleo-source

Allelos are natural products involved in plant-plant and plant microorganism ecological interactions. In essence they are important sources for alternative agrochemicals and pharmaceuticals.



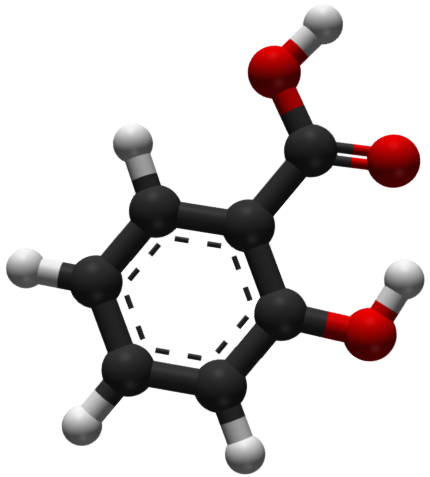




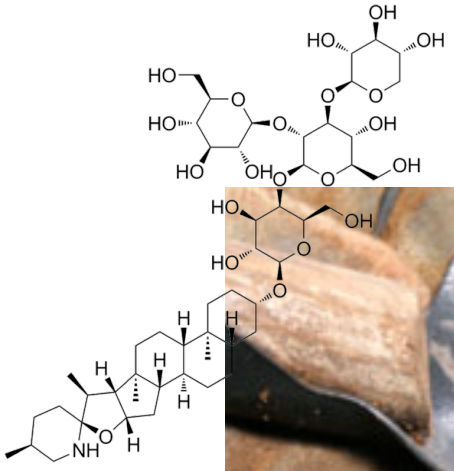


Agricultural crop residues

e.g. Salicylic acid (SA) is a phenolic phytohormone roles in plant growth and development, photosynthesis, transpiration, ion uptake and transport involved in endogenous signaling, mediating in plant defense against pathogens plays a role in the resistance to pathogens by inducing the production of pathogenesis-related proteins involved in the systemic acquired resistance (SAR) activates genes in some plants that produce chemicals that aid in the defense against pathogenic invaders



Ecosystem-relevant ?



Tashi Delek