

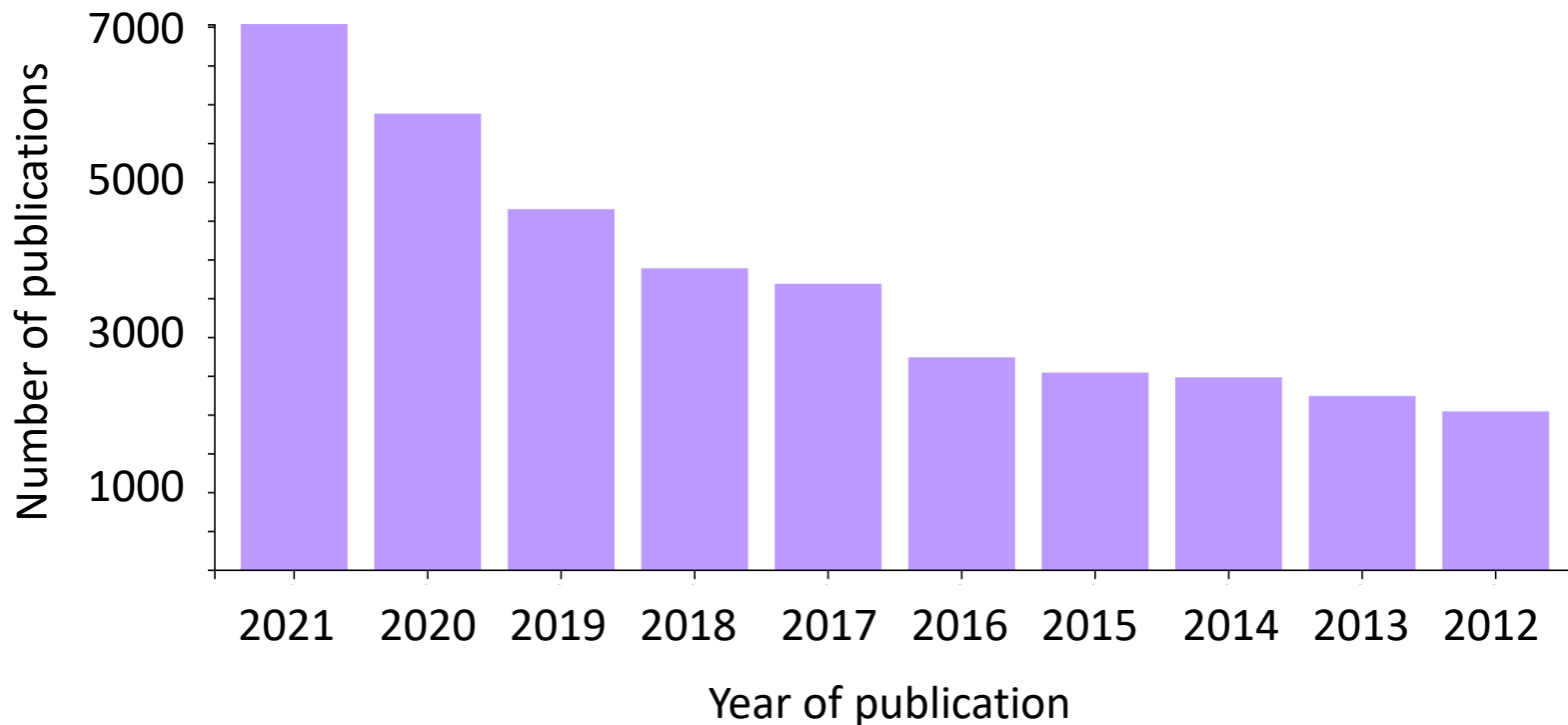
HAN BioCentre

Phytochemicals

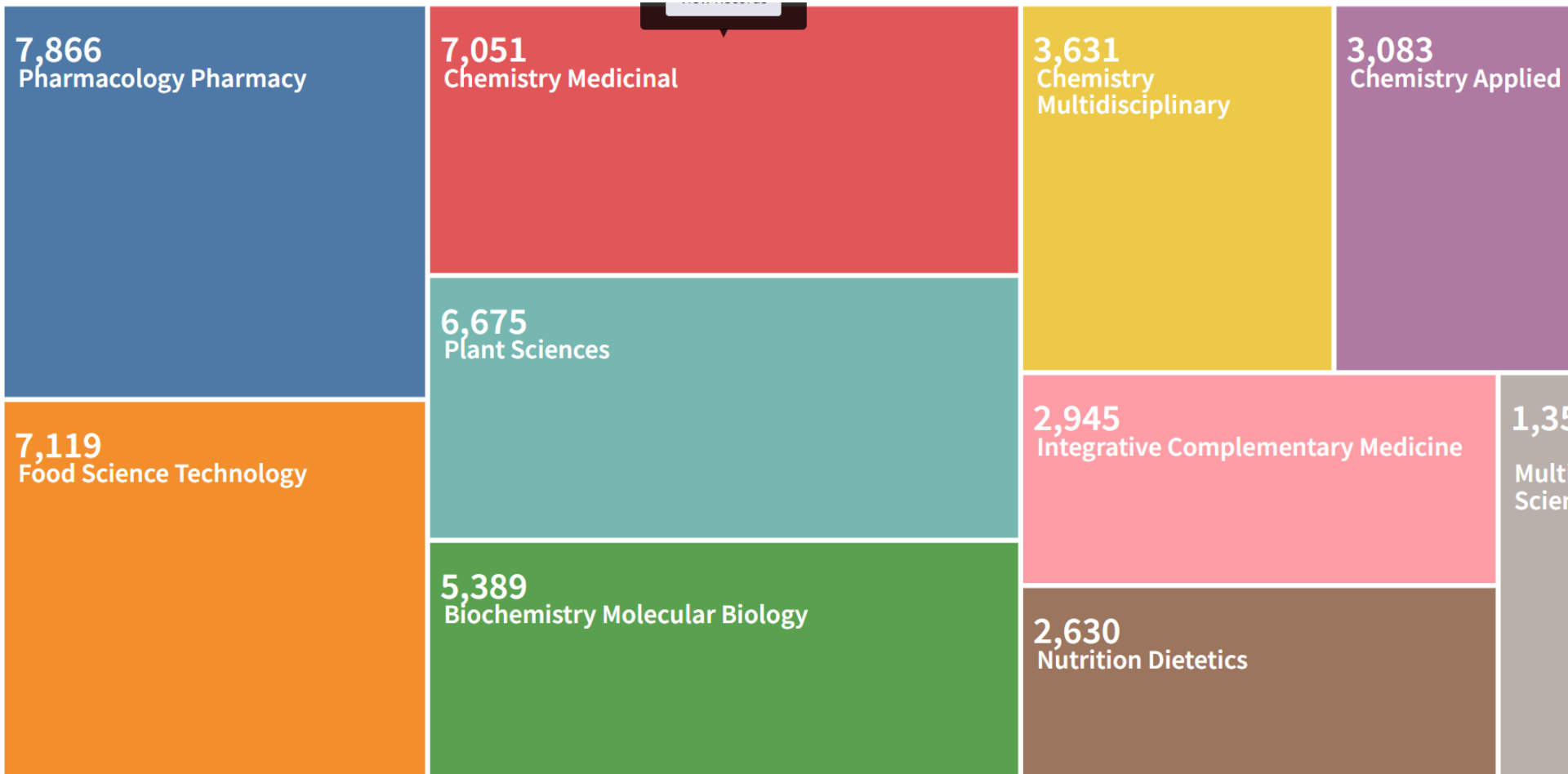


Karin Struijs
TKI-BBE

The many: Number of publications about “phytochemicals” according to Web of Science



The Many uses: Distribution of the topics



The functions of Phytochemicals

Hormone

Antioxidant

Effect on enzyme activity

Anti-carcinogenic



Cardiovascular diseases

Anti-mutagenic

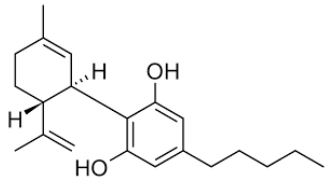
Anti-bacterial

Effect on bioavailability

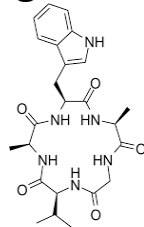
Classification of phytochemicals

Phytochemicals

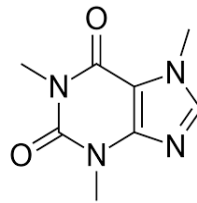
Cannabinoids
(CBD)



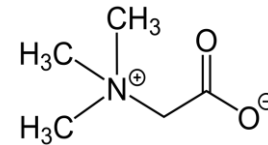
Cyclic peptides
(segetalin B)



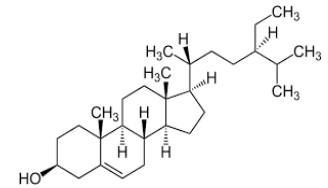
Alkaloids
(caffeine)



Betalains
(betain)

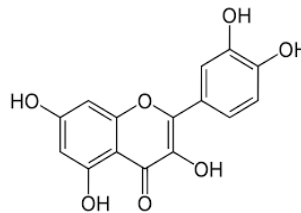


Phytosterols
(β-sitosterol)

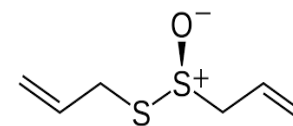


ACE inhibiting
Peptides
(cowpea and
other
legumes)

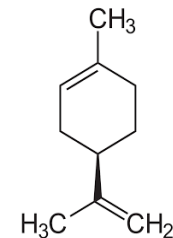
Polyphenols
(quercetin)



Sulphur
compounds
(allicin)



Terpenes
(limonene)



Project HAN BioCentre: Secondary plant metabolites from fiber hemp

Stems

Bast fiber

- technical fiber (concrete reinforcement, construction, automotive, insulation)
- textiles (clothing, shoes, rope)

Hurds (shivs)

- absorption products
- fiber for paper
- feed
- hempcrete
- fiberboard
- insulation
- soil amendment



Seeds

Oil for use as biofuel, in food, in personal care products or technical applications (lubricant)

Proteins for food and feed applications

Flowers and Leaves

Phytochemicals, in use as pharmaceutical and consumables

Roots

Improves soil health

Secondary metabolites in *Cannabis sativa*

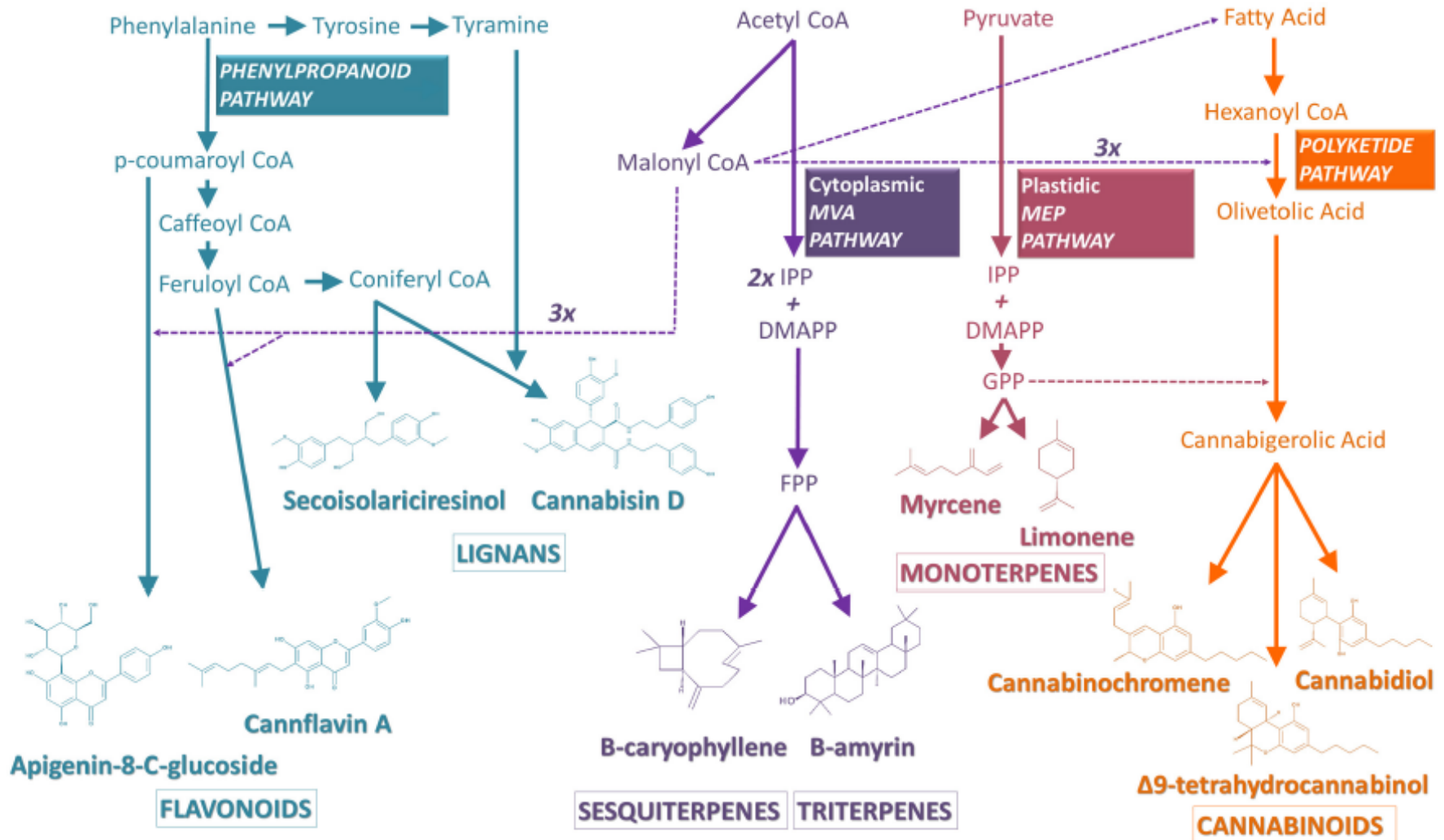
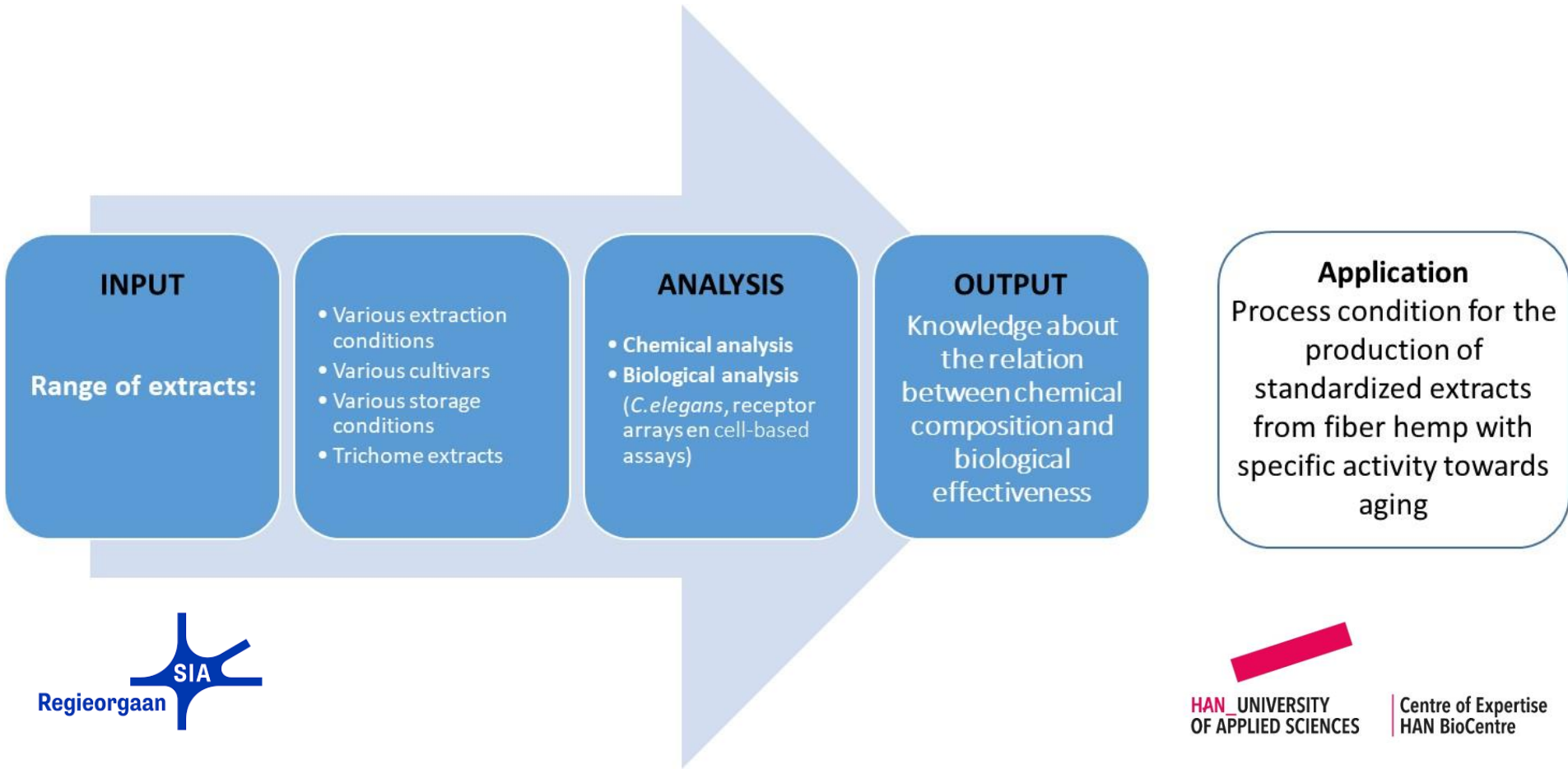


FIGURE 2 | Schematic view of the biosynthetic pathways leading to the *Cannabis* secondary metabolites discussed in this review. Transport of precursors is represented by dashed arrows, while direct catalytic reactions are depicted by bold arrows. See text for detailed pathways. Abbreviations used: IPP, isopentenyl diphosphate; DMAPP, dimethylallyl diphosphate; GPP, geranyl diphosphate; FPP, farnesyl diphosphate; MVA, mevalonate; MEP, methylerythritol phosphate.

RAAK-mkb “Secondary plant metabolites from Fiber Hemp”

The main objective of this project is to find a relation between the chemical composition of various extracts from fiber hemp and their health effects.



Concluding remarks

Many phytochemicals result into a same amount of research opportunities.

Application driven research is preferred to give direction and to result in valorization of research.

