

Elinor Thompson

Plant flavonoids: testing and transport

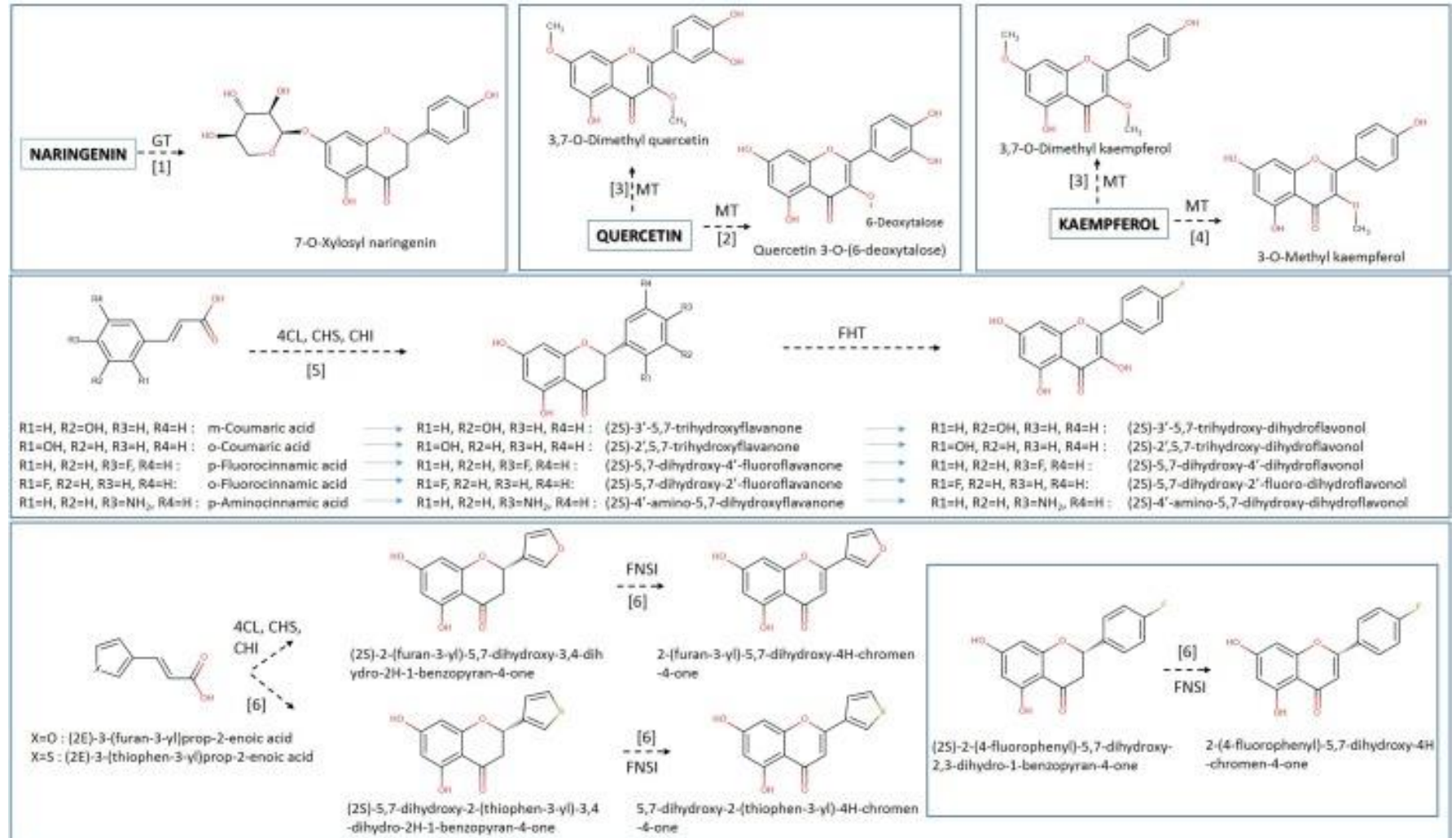
- Interested in:
- Therapeutic use of flavonoids
 - Polycystic kidney disease
 - Bioavailability of flavonoids
 - Arabidopsis MATE transporter FFT
 - -> Transport within non-plant cells



<http://www.liptontea.ca/article/detail/176923/tea-flavonoids>

- Flavonoid content of different plant tissues
 - Partitioning in nectar
 - -> Effect on pollinators of nectar flavonoids – engineered plants?

Bioengineering – potential spotted by many groups



Dicty as a model organism to test therapeutics

- Naringenin inhibited Dicty growth
 - But not development
 - TRPP2 (polycystin) mutant resistant to naringenin
 - Cation channel
 - Mutations cause type 2 autosomal dominant PKD
 - Naringenin inhibited MDCK cells
 - And cyst growth
 - Knockdown of TRPP2 by siRNA conferred partial resistance to naringenin
- Conserved effect of naringenin in Dicty and mammalian cell line
 - Waheed et al 2014
- Flavonoids could be used as a nutritional intervention?
- Transport of naringenin in Dicty?
- Efficiency
- Other flavonoids
- MATE transporters
 - On vacuole in plants vs
 - Efflux in prokaryotes



Thompson et al 2009, 2010

Dictyostelium life cycle and use as model organism

<https://archive.org/details/GermanTV-Stationdictyosteliumdiscoideum>

- Orthologous proteins and networks
 - Disease and other pathways (epilepsy, taste, tissue formation, preclinical ADR studies, neurodegenerative disorders, PKD)
- Chemotaxis
- Phagocytosis
- Patterning, adhesion, cell sacrifice and sorting
- Movement, cytoskeleton, cell biology
 - As above incl. actin pathologies, mitochondrial disease, human lysosomal and trafficking disorders and host-pathogen interactions
- Molecular biology – mutants, markers, tools
- Sequenced early
- Database – Dictybase
- Community – UK annual/World meeting

