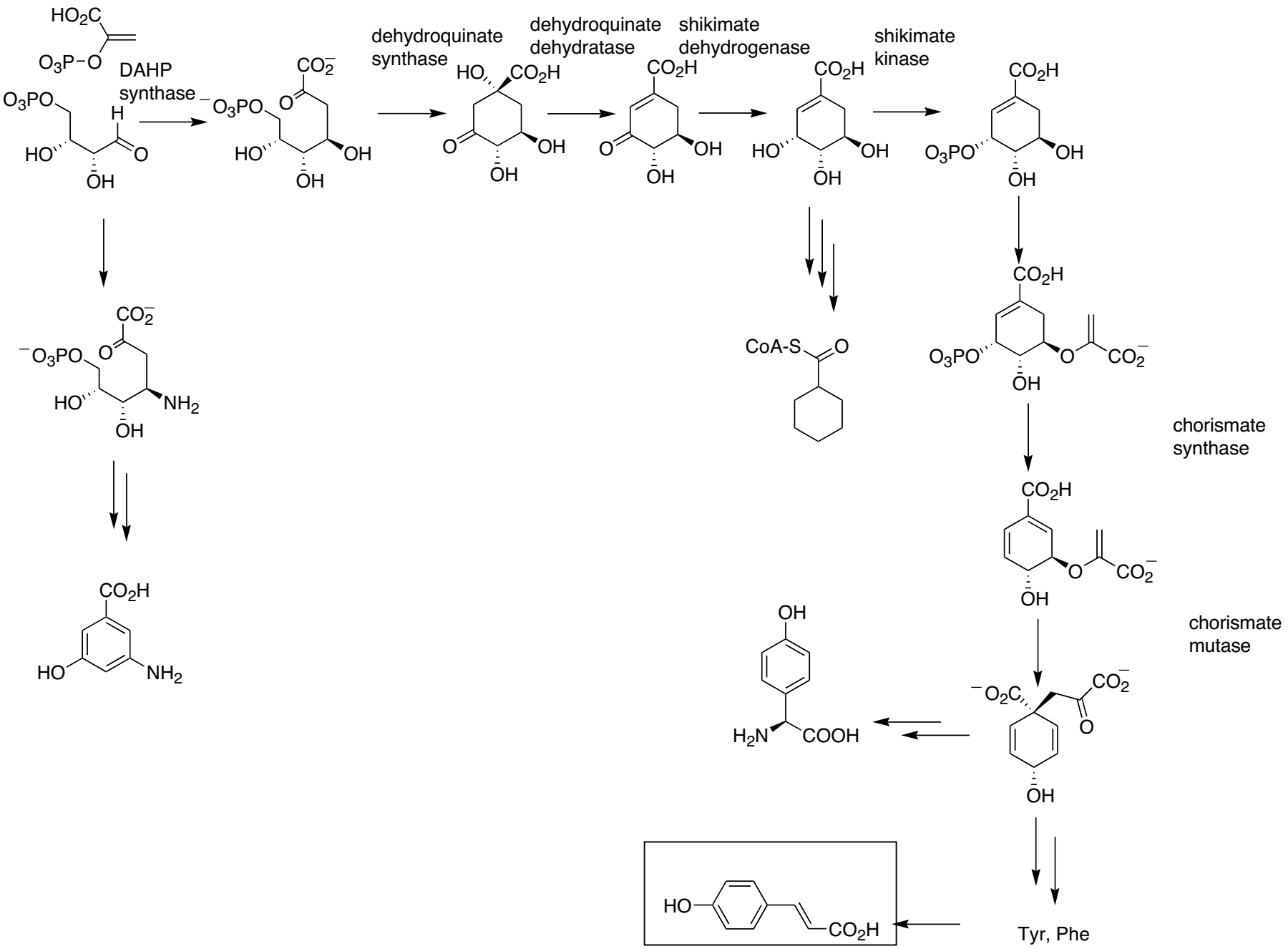
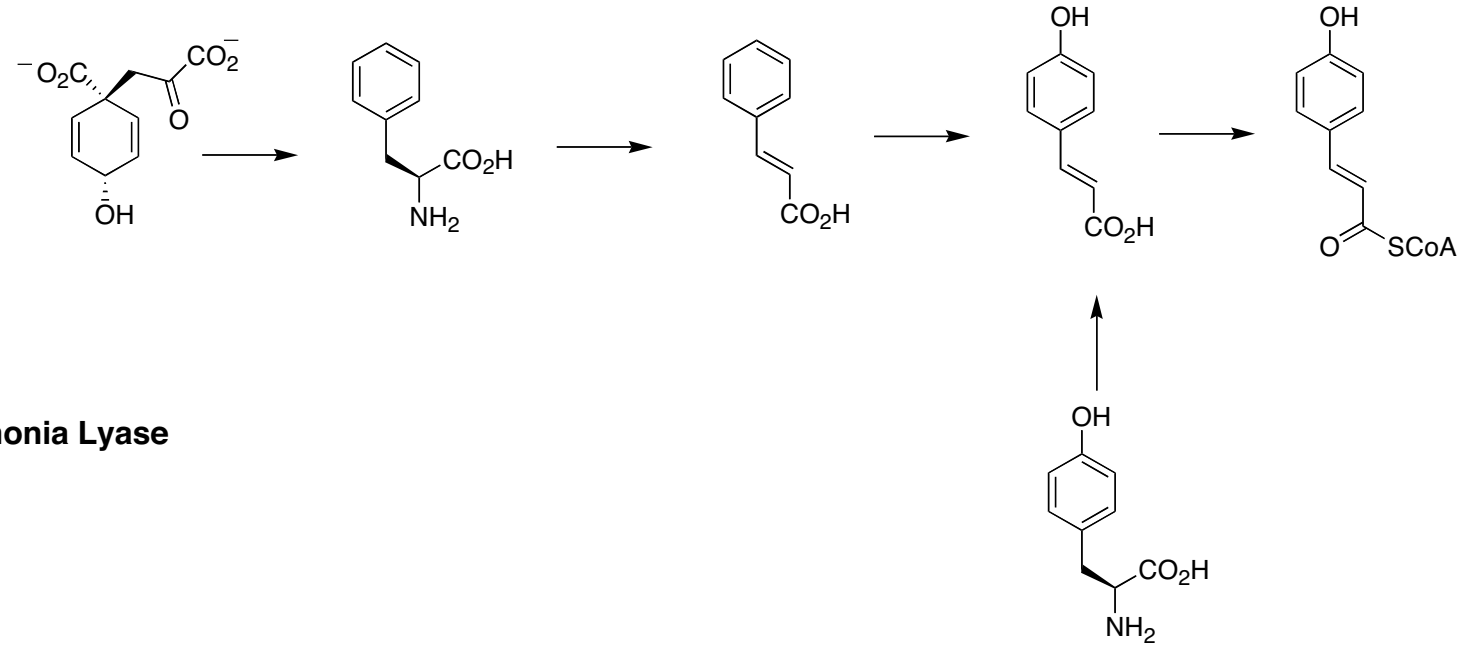
5.451 F2005
Shikimate Pathway Favonoids. Dewick 149-157



5.451 F2005
Shikimate Pathway
Synthesis of Coumaroyl starting material



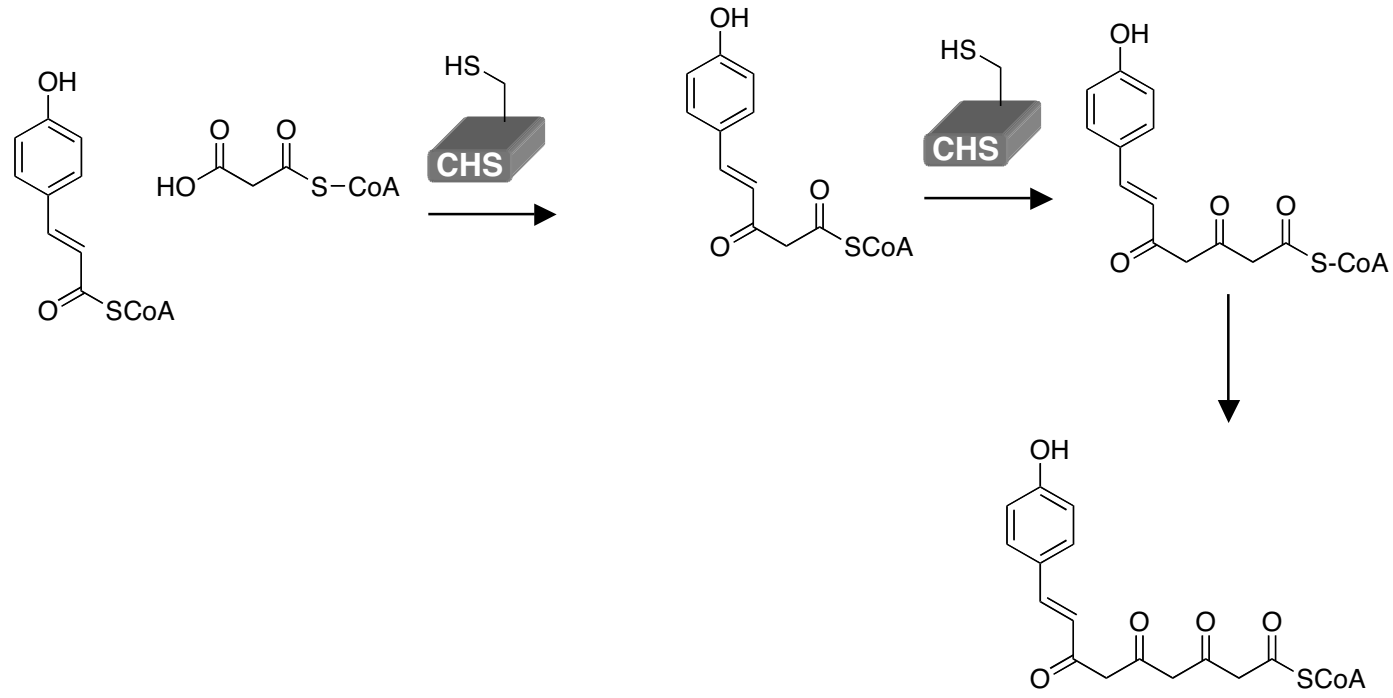
Ammonia Lyase

5.451 F2005
Shikimate Pathway
Reactions of Coumaroyl starting material with 3 units of malonyl CoA

Flavonoids, flavonols, isoflavones

Stilbenes

Chalcone synthase/stilbene synthase superfamily



5.451 F2005
Shikimate Pathway
Synthesis of Coumaroyl starting material

Reactions of Coumaroyl starting material

Condense coumaryl CoA with 3 units malonyl CoA

polyketide cyclizes and aromatizes

can occur with or without reduction

this yields a CHALCONE

5.451 F2005
Shikimate Pathway
flavonoid

Figure by MIT OCW.

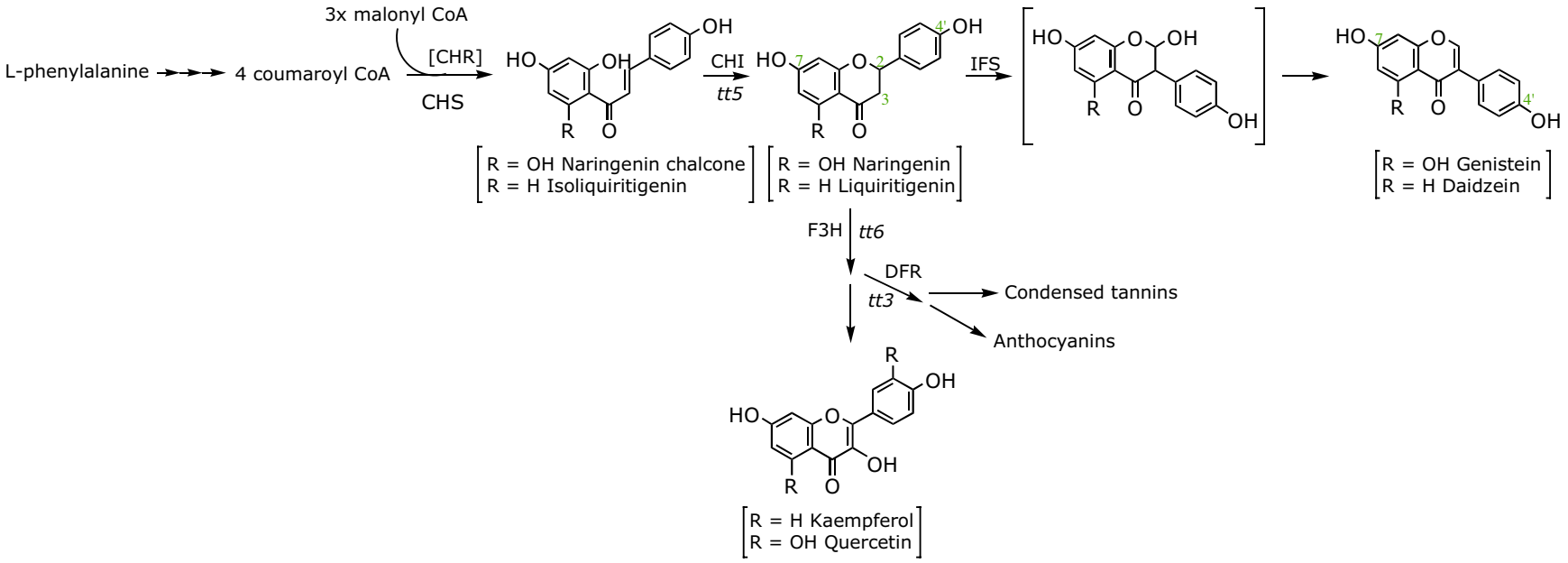


Figure by MIT OCW.

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Austin, Michael B., and Joseph P. Noel. Figures 8, 7, and 10 in “The chalcone synthase superfamily of type III polyketide synthases.” *Natural Product Reports* 20 (2003): 79-110.

Turnbull, Jonathan J. et al. Figures 1 and 3 in “Mechanistic Studies on Three 2-Oxoglutarate-dependent Oxygenases of Flavonoid Biosynthesis: Anthocyanidin Synthase, Flavonol Synthase, and Flavanone 3{Beta}-Hydroxylase.” *J Biol Chem* 279 (2004): 1206-1216.
http://www.jbc.org/cgi/reprint/279/2/1206

Hashim, Muhammed Faisal et al. Figure 2 in “Reaction mechamism of oxidative rearrangement of flavanone in isoflavone biosynthesis.” *FEBS Lett* 271 (1990): 219-222.

Winkel-Shirley, Brenda. Figure 1 in “Flavonoid Biosynthesis. A Colorful Model for Genetics, Biochemistry, Cell Biology, and Biotechnology.” *Plant Physiol* 126 (2001): 485-493.
http://www.plantphysiol.org/cgi/content/full/126/2/485

Austin, Michael B. et al. Figures 4 and 1 in “An Aldol Switch Discovered in Stilbene Synthases Mediates Cyclization Specificity of Type III Polyketide Synthases.” *Chem Bio* 11 (2004): 1179-1194.

Fukusaki, Ei-ichiro et al. Figures 1 and 3 in “Flower color modulations of Torenia hybrida by downregulation of chalcone synthase genes with RNA interference.” *J Biotech* 111 (2004): 229-240.

Xie, De-Yu et al. Figures 3 and 2 in “Role of Anthocyanidin Reductase, Encoded by BANYULS in Plant Flavonoid Biosynthesis.” *Science* 299 (2003): 396-399.