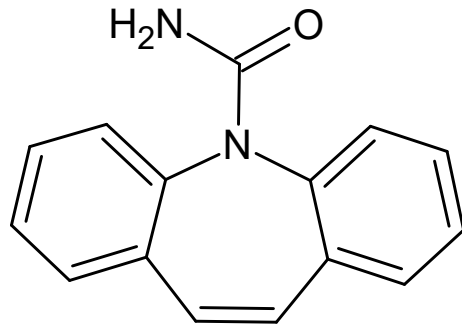


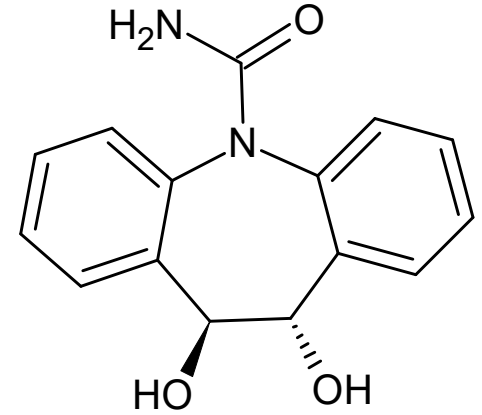
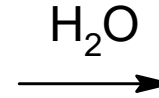
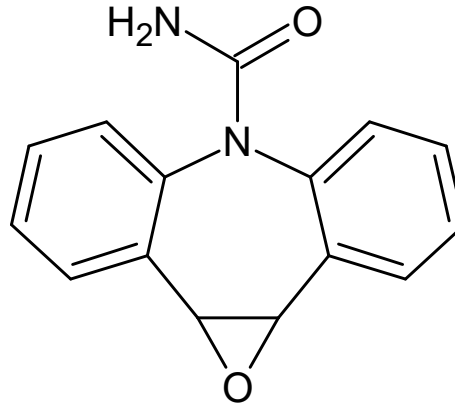
Syntheses and metabolism of selected antiepileptics

© Oldřich Farsa 2021

Metabolism of carbamazepine



5*H*-dibenzo[*b,f*]azepine-5-carboxamide



carbamazepine

Carbamazepinum PhEur

Biston[®], Neurotop[®], Tegretol[®] CR ...

- antiepileptic
- blocks voltage gated Na⁺ channels and thus inhibits fast and non-controlled impulse spreading

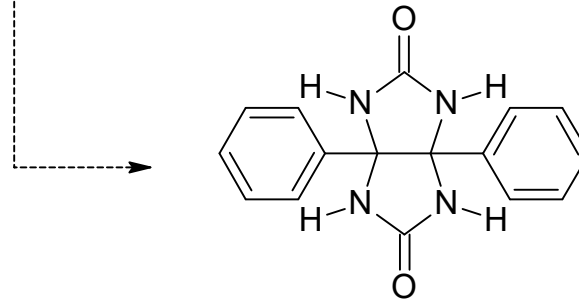
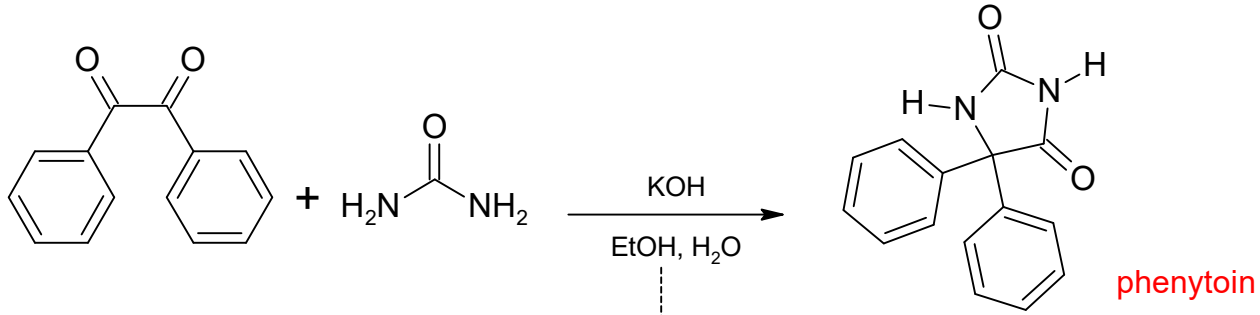
carbamazepine 10,11-epoxide

- active
- stable; found in waste water

trans-10,11-dihydrocarbamazepine-10,11-diol

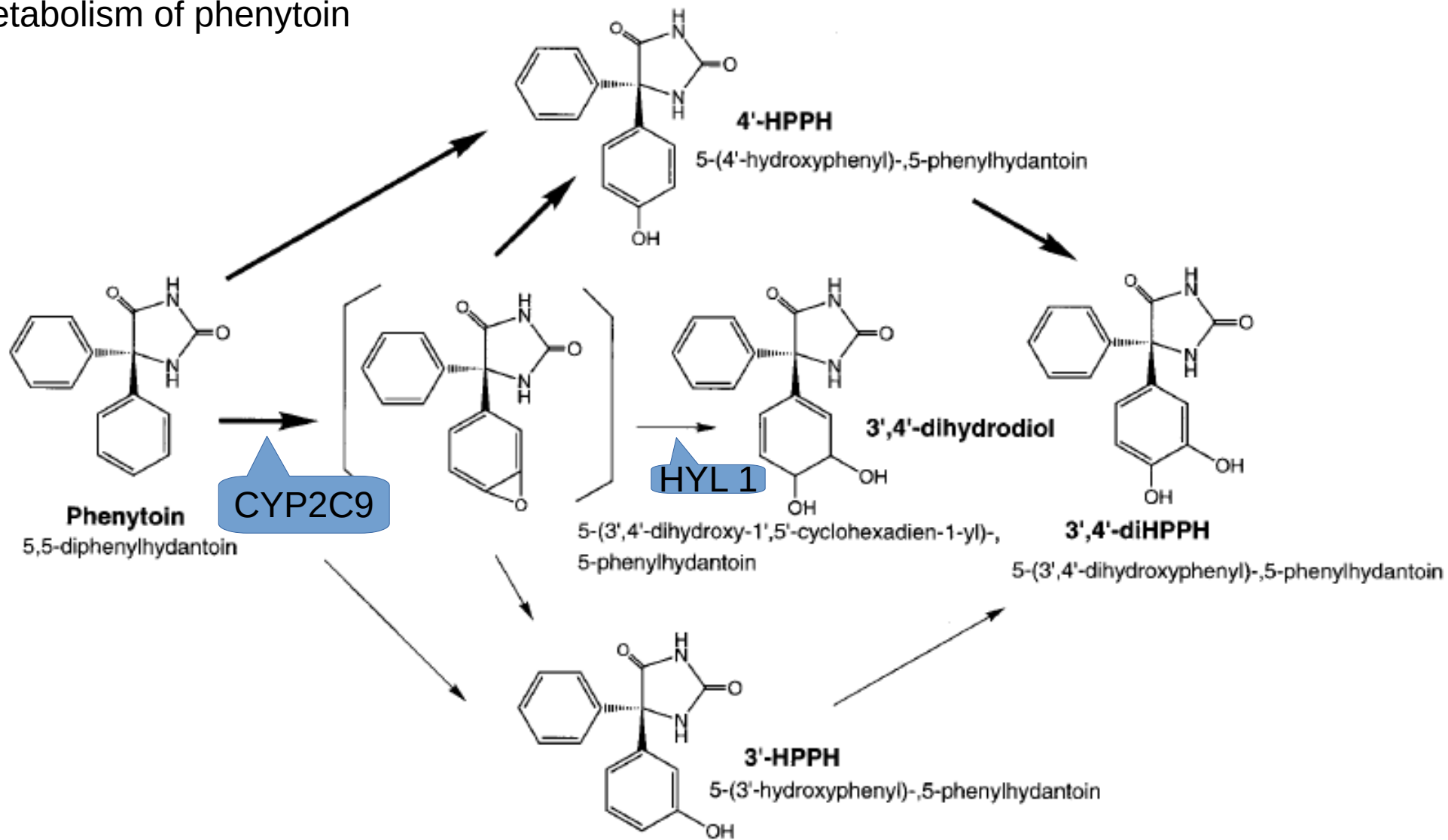
- main metabolite excreted by urine

Synthesis of phenytoin

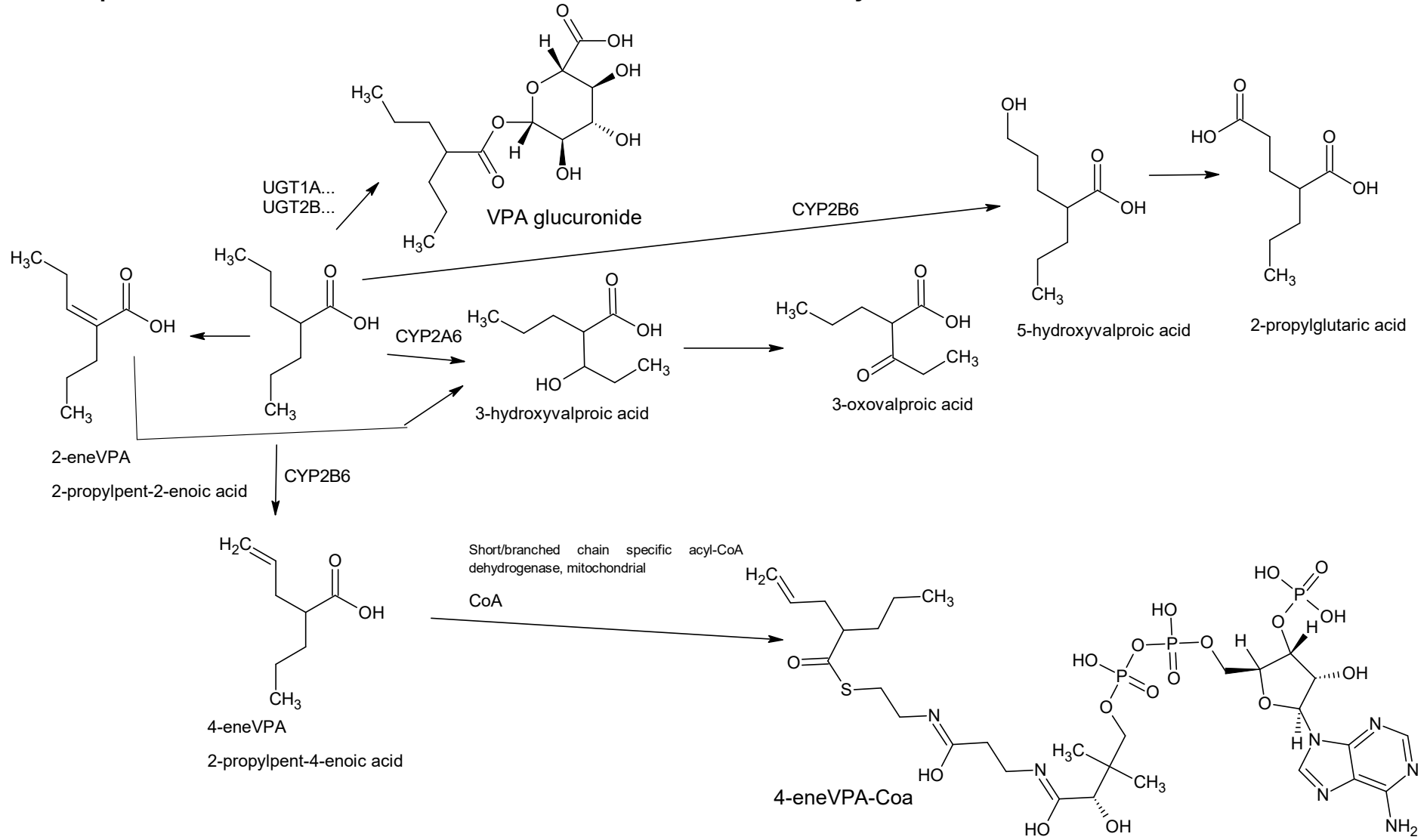


3a,6a-diphenyltetrahydroimidazo[4,5-*d*]imidazole
-2,5(1*H*,3*H*)-dione
= diphenylglycoluril
Phenytoin specified impurity D [PhEur]

Metabolism of phenytoin



Valproic acid metabolism: overview of selected major metabolites



Metabolism of clonazepam

