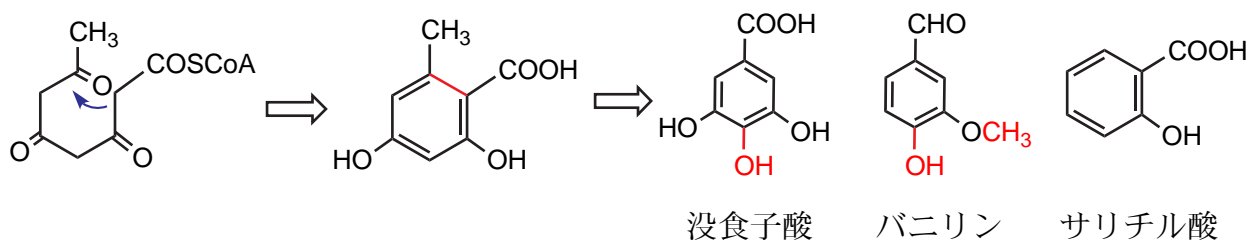
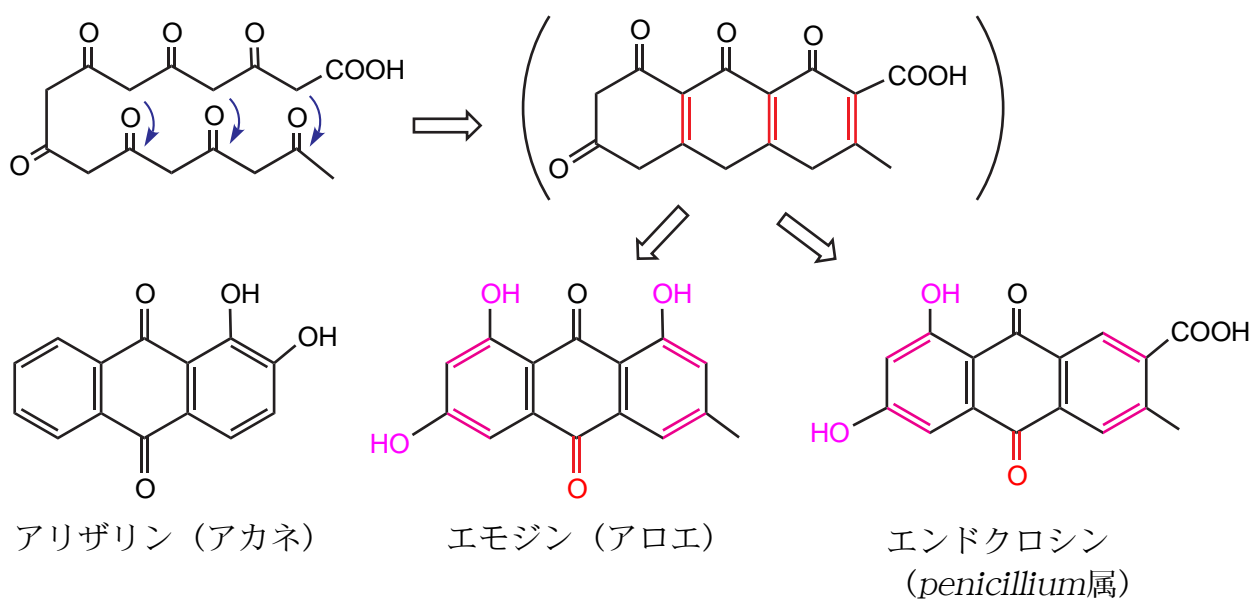


3. 芳香族化合物

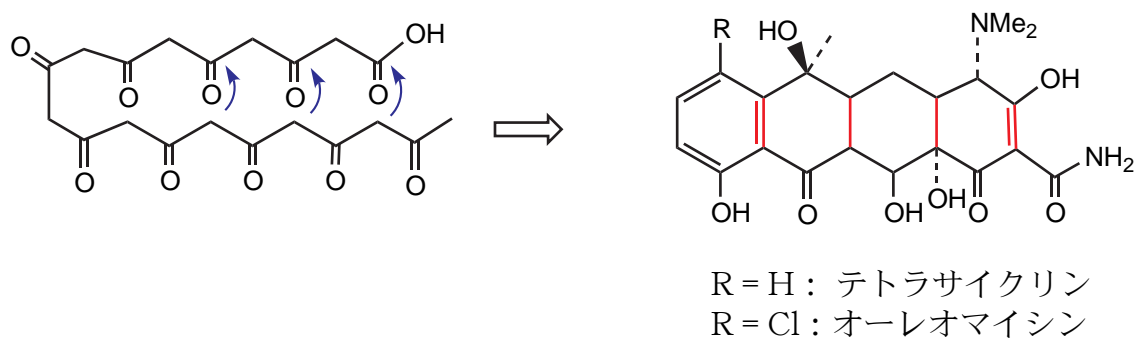
3.1. ポリケチド由来の化合物



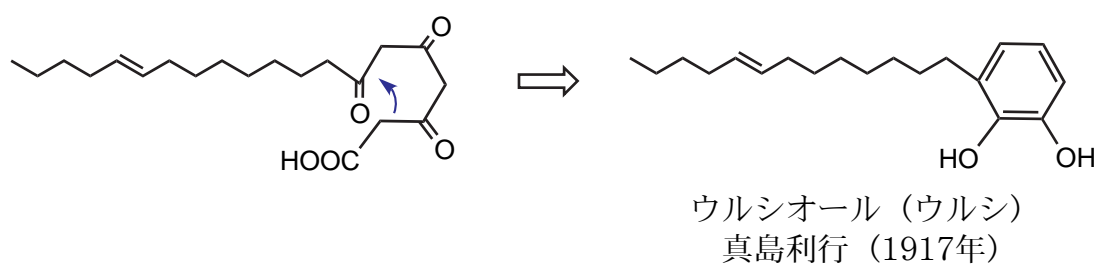
アントラキノン類 (色素)

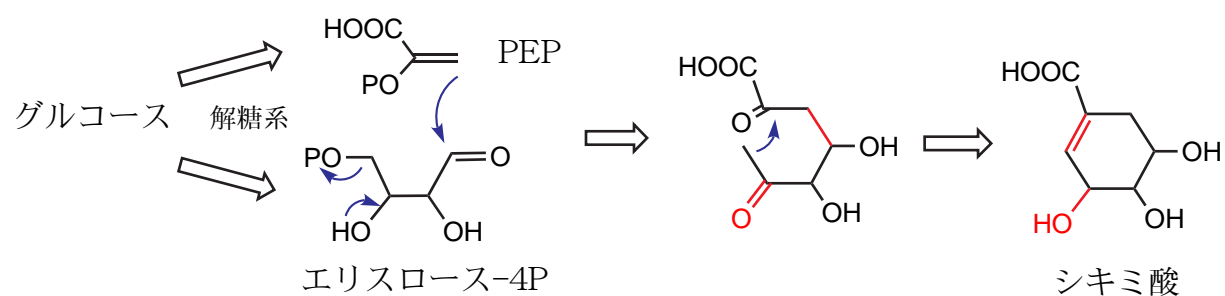


テトラサイクリン類 (抗生物質)

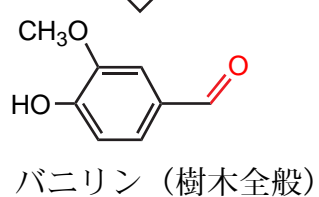
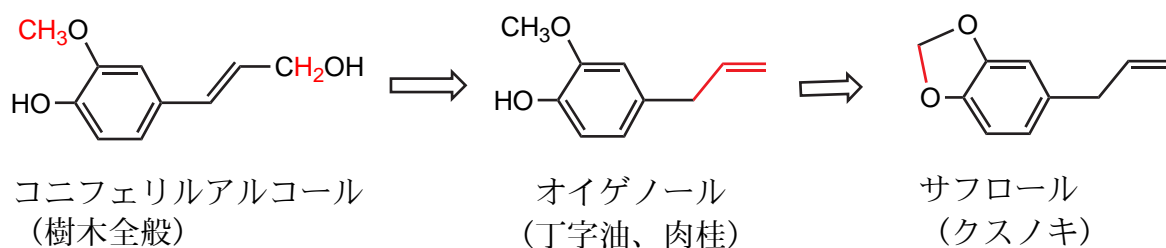
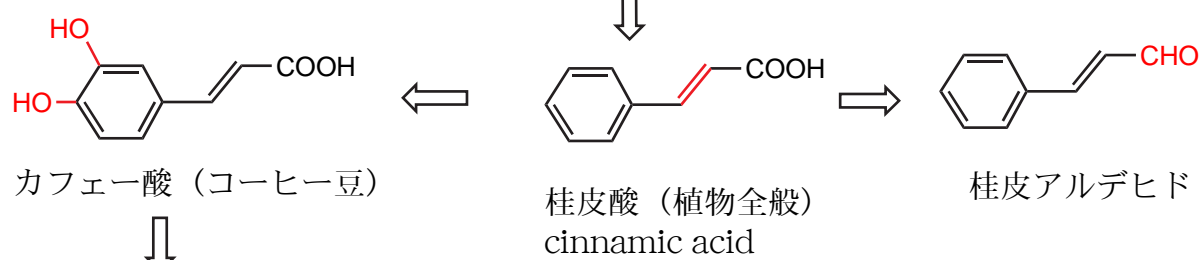
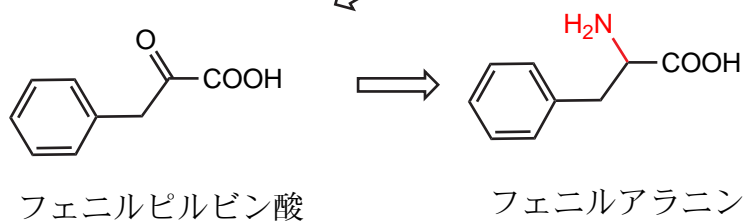
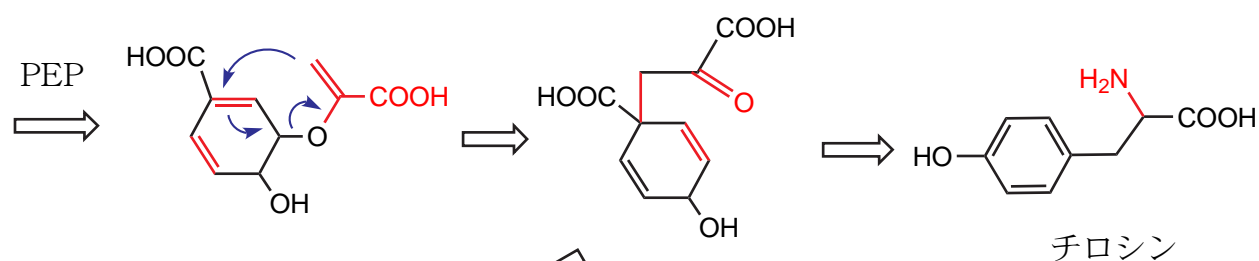


その他



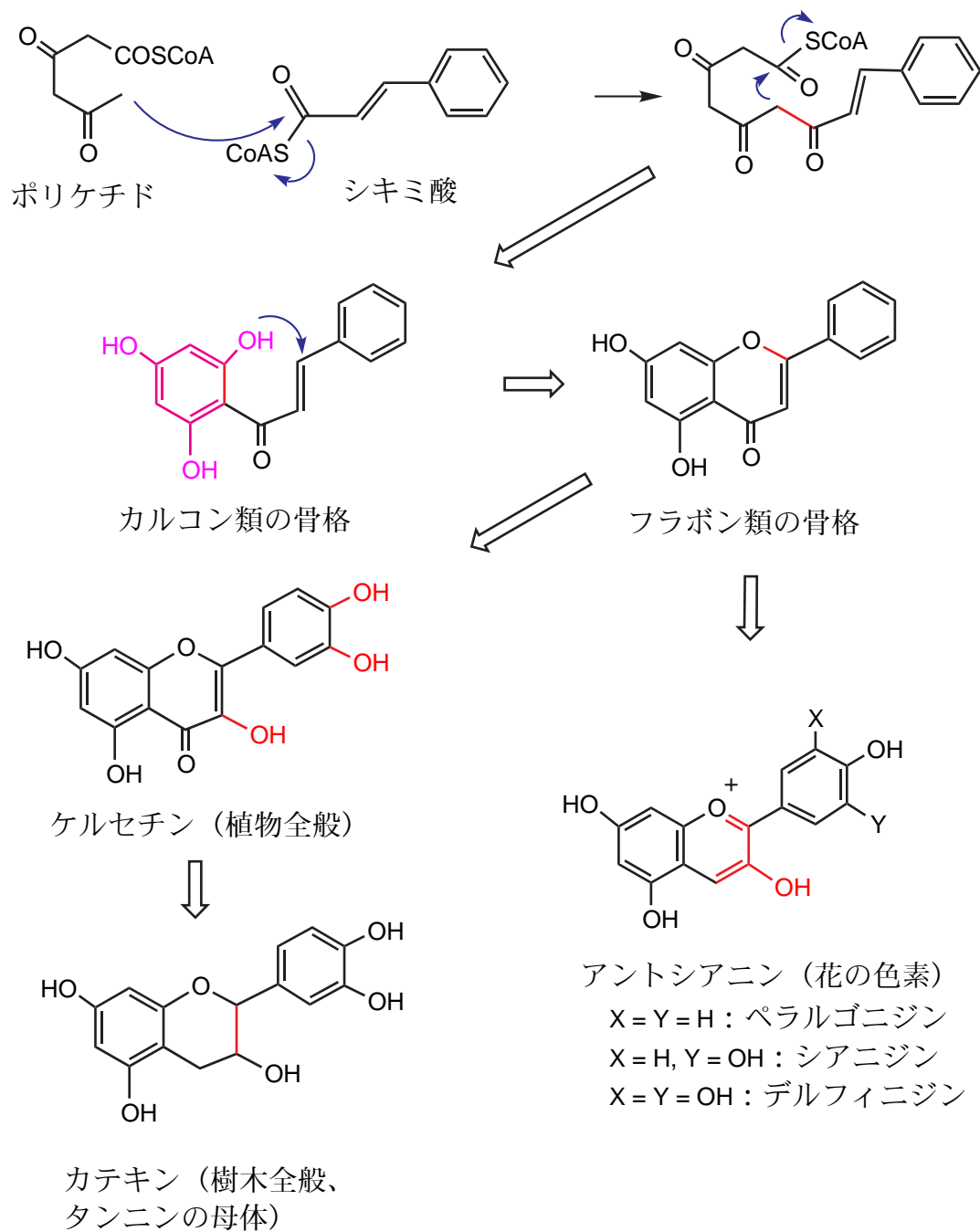
3.2. シキミ酸由来の化合物 (C₆-C₃)

PEP: ホスホエノールピルビン酸



3.3. フラボノイド (C₆-C₃-C₆)

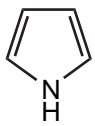
色素など



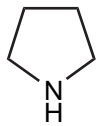
4. 含窒素化合物

4.1. 窒素を含む複素環化合物

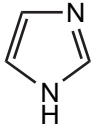
5 員環



pyrrole

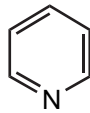


pyrrolidine

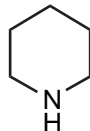


imidazole

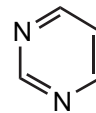
6 員環



pyridine

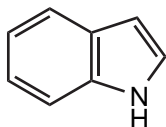


piperidine

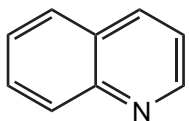


pyrimidine

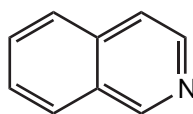
二環式化合物



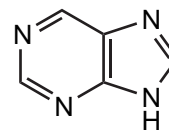
indole



quinoline

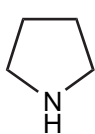


isoquinoline

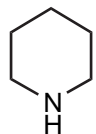


purine

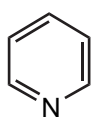
塩基性



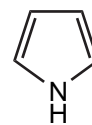
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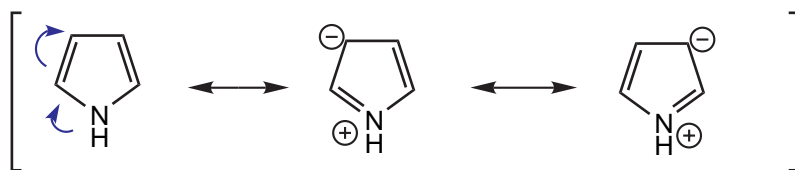
pKa

11.40

11.24

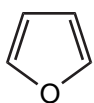
5.22

極めて弱い

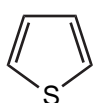


塩基性の基になる非共有電子対が非局在化している

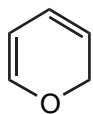
参考：その他の複素環化合物



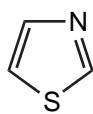
furan



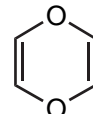
thiophene



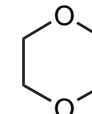
pyran



thiazole



1,4-dioxine



1,4-dioxane