# CHAPTER II
# HISTORICAL

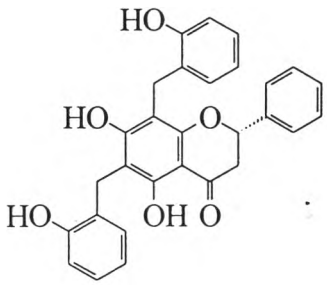
Four groups of natural products: flavonoids, triterpenes, aromatic compounds, and heptenes (heptadienes) were reported as chemical constituents of *Melodorum fruticosum*. The categories and names of these are shown in Table 1.

Table 1: Chemical constituents of *Melodorum fruticosum* Lour.

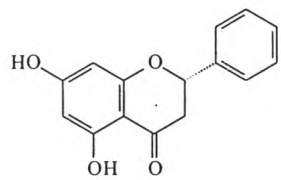
| Chemical Compounds | Categories | Plant Part | Reference |
|---|---|---|---|
| • Dichamanetin (**1**) | Flavonoids | bark | 10 |
| • Pinocembrine (**2**) | Flavonoids | bark<br>leaves, branches | 10 |
| • Chrysin (**3**) | Flavonoids | leaves, branches | 10 |
| • Polycarpol (**4**) | Triterpene | bark | 10 |
| • Stigmasterol (**5**) | Triterpene | bark | 10 |
| • β-Sitosterol (**6**) | Triterpene | bark | 10 |
| • Benzylbenzoate (**7**) | Aromatic compound | bark | 10 |
| • Benzoic acid (**8**) | Aromatic compound | leaves, branches | 10 |
| • (4*Z*)-7-benzoyloxy-6-hydroxy-2,4-heptadien-4-olide (melodorinol) (**9**) | Heptene (Heptadiene) | bark<br>leaves, branches | 6, 7 |
| • (4*E*)-7-benzoyloxy-6-hydroxy-2,4-heptadien-4-olide (**10**) | Heptene (Heptadiene) | leaves, branches | 6 |
| • (4*Z*)-7-benzoyloxy-6-acetoxy-2,4-heptadien-4-olide (acetylmelodorinol) (**11**) | Heptene (Heptadiene) | bark<br>leaves, branches | 5, 6 |

Table 1: Chemical constituents of *Melodorum fruticosum* Lour. (continued)

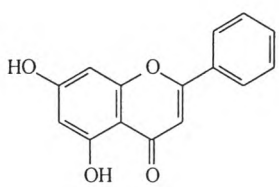
| Chemical Compounds | Categories | Plant Part | Reference |
|---|---|---|---|
| • (4*E*)-7-benzoyloxy-6-acetoxy-2,4-heptadien-4-olide (**12**) | Heptene (Heptadiene) | leaves, branches | 6 |
| • (4*Z*)-6-benzoyloxy-7-hydroxy-2,4-heptadien-4-olide (**13**) | Heptene (Heptadiene) | leaves, branches | 6 |
| • (2*E*,5*E*)-7-benzoyloxy-1-methoxy-2,5-heptadien-1,4-dione (melodienone) (**14**) | Heptene (Heptadiene) | bark | 5 |
| • (2*E*,5*E*)-7-benzoyloxy-1-ethoxy-2,5-heptadien-1,4-dione (homomelodienone) (**15**) | Heptene (Heptadiene) | bark | 7 |
| • (2*Z*,5*E*)-7-benzoyloxy-1-methoxy-2,5-heptadien-1,4-dione (isomelodienone) (**16**) | Heptene (Heptadiene) | bark | 5 |
| • (2*Z*,5*E*)-7-benzoyloxy-1-ethoxy-2,5-heptadien-1,4-dione (homoisomelodienone) (**17**) | Heptene (Heptadiene) | bark | 7 |
| • (*E*)-7-benzoyloxy-6-hydroxy-1-methoxy-2-heptaen-1,4-dione (6-hydroxy-5-hydromelodienone) (**18**) | Heptene (Heptadiene) | bark | 7 |



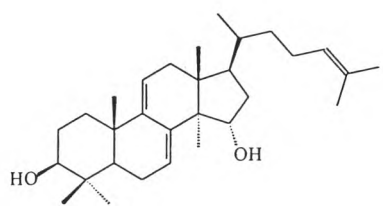

Dichamanetin (**1**)



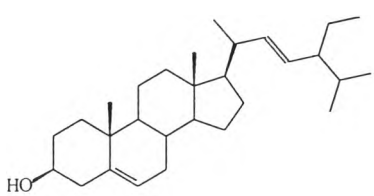

Pinocembrine (**2**)



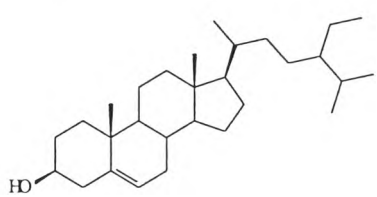

Chrysin (**3**)



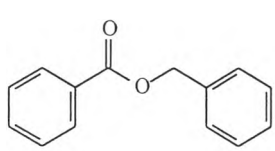

Polycarpol (**4**)



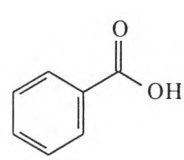

Stigmasterol (**5**)




β-Sitosterol (**6**)

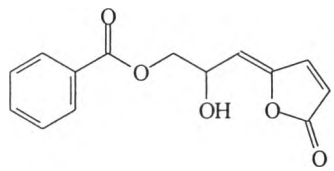



Benzylbenzoate (**7**)



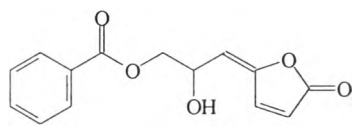

Benzoic acid (**8**)

Figure 2: Structures of chemical components of *Melodorum fruticosum*

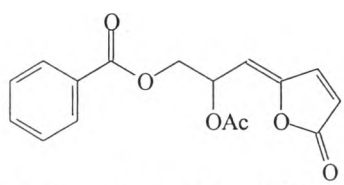


(4*Z*)-7-benzoyloxy-6-hydroxy-2,4-heptadien-4-olide

(melodorinol) (**9**)

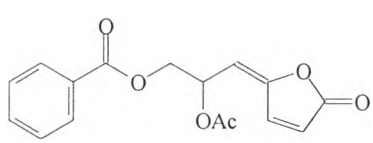


(4*E*)-7-benzoyloxy-6-hydroxy-2,4-heptadien-4-olide (**10**)

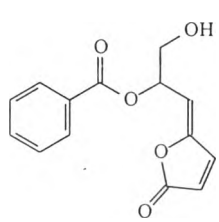


(4*Z*)-7-benzoyloxy-6-acetoxy-2,4-heptadien-4-olide

(acetylmelodorinol) (**11**)



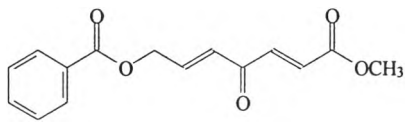
(4*E*)-7-benzoyloxy-6-acetoxy-2,4-heptadien-4-olide (**12**)



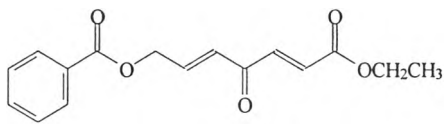
(4*Z*)-6-benzoyloxy-7-hydroxy-2,4-heptadien-4-olide (**13**)

Figure 2: Structures of chemical components of *Melodorum fruticosum*

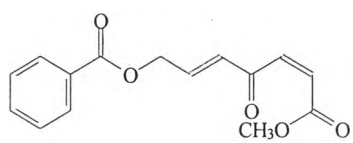
(continued)



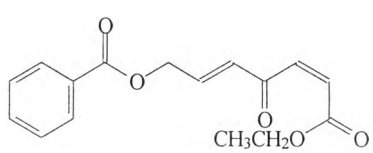
(2*E*,5*E*)-7-benzoyloxy-1-methoxy-2,5-heptadien-1,4-dione
(melodienone) (**14**)



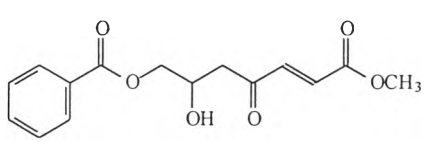
(2*E*,5*E*)-7-benzoyloxy-1-ethoxy-2,5-heptadien-1,4-dione
(homomelodienone) (**15**)



(2*Z*,5*E*)-7-benzoyloxy-1-methoxy-2,5-heptadien-1,4-dione
(isomelodienone) (**16**)



(2*Z*,5*E*)-7-benzoyloxy-1-ethoxy-2,5-heptadien-1,4-dione
(homoisomelodienone) (**17**)



(*E*)-7-benzoyloxy-6-hydroxy-1-methoxy-2-heptaen-1,4-dione
(6-hydroxy-5-hydromelodienone) (**18**)

Figure 2: Structures of chemical components of *Melodorum fruticosum*
(continued)