

# Kritosemenke - Angiospermae

## Rosidae

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## Angiospermae, Rosidae

- Staphyleaceae
- Zygophyllaceae ...
- Geraniales
  - Geraniaceae ...
- “EUROSIDS I “
  - Celastraceae
  - Parnassiaceae ...
- Cucurbitales
  - Anisophylleaceae
  - Begoniaceae
  - Cucurbitaceae ...
- Fabales
  - Fabaceae
  - Polygalaceae ...
- Fagales
  - Fagaceae
  - Juglandaceae ...
- Malpighiales
  - Euphorbiaceae
  - Linaceae
  - Salicaceae
  - Violaceae ...
- Oxalidales
  - Oxalidaceae ...
- Rosales
  - Cannabaceae
  - Moraceae
  - Rhamnaceae
  - Rosaceae
  - Ulmaceae
  - Urticaceae

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## Angiospermae, Rosidae

- EUROSIDS II
  - Brassicales
    - Brassicaceae
    - Caricaceae
    - Resedaceae
    - Tropaeolaceae ...
  - Malvales
    - Cistaceae
    - Malvaceae
    - Thymelaeaceae ...
  - Myrtales
    - Lythraceae
    - Myrtaceae
    - Onagraceae ...
  - Sapindales
    - Anacardiaceae
    - Rutaceae
    - Sapindaceae
    - Simaroubaceae

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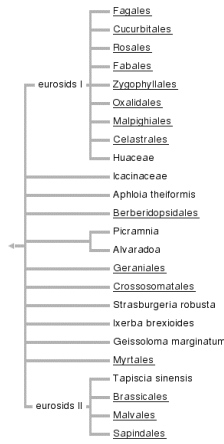
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# Angiospermae Rosidae

- v sedanjem obsegu zelo heterogena
- ni morfoloških in anatomskih skupnih znakov
- le genom kaže medsebojno sorodnost (rbcL, 18S)




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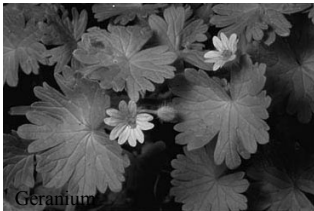
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# Angiospermae, Rosidae

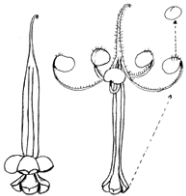
Geraniales

Geraniales

- Geraniaceae – krvomočnice



Geranium




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# Angiospermae, Rosidae

Rosanae [= "Eurosidae I" ]

- le zgradba genoma kaže sorodnost (rbcL, atpB, 18S)

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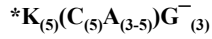
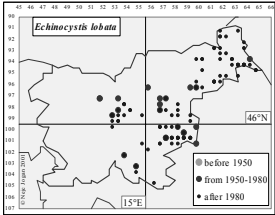
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## Rosidae, Rosanae

### Cucurbitales

- Cucurbitaceae – bučevke




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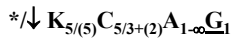
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## Rosidae, Rosanae

### Fabales

- Fabaceae s. l. – stročnice
  - subf. Faboideae
  - subf. Mimosoideae
  - subf. Caesalpinoideae



pogosto  $A_{(10)/(9)+1}$

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## uporabne stročnice

- *Arachis*: arašidi
- *Pisum*: grah
- *Lens*: leča
- *Phaseolus*: fižol
- *Vicia faba*: bob
- *Cicer*: čičerika

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## Rosidae, Rosanae

### Fabales

- Polygalaceae – grebenuševke



↓  $K_{5(5)}(C_3A_{8(8)})\underline{G}_{(2-3)}$

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## Rosidae, Rosanae

### Fagales

- drevesa/grmi
- listi spiralasto, s prilisti
- laski zvezdasti in/ali žlezasti
- socvetja mačičasta
- cvetovi enospolni, zelo reducirani, nektarijev ni
- plodnica podrasla, sz 1-2/ predal
- halazogamija
- oreški

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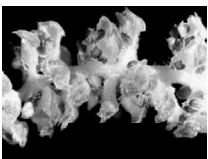
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## Rosidae, Rosanae

### Fagales

- Betulaceae – brezovke

\* $P_{1-4}A_4//G^-(2)$



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## Rosidae, Rosanae

### Fagales

- Fagaceae – bukvovke

\*P<sub>6-0</sub>A<sub>4-∞</sub>//G<sup>-</sup>(3)



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## Rosidae, Rosanae

### Malpighiales

- družijo jih le molekularne značilnosti (rbcL, atpB)
- številne imajo suhe brazde in trilakunarne nodije
- pogosto G<sub>3</sub>
- družine s parietalno placentacijo pogosto obravnavajo kot o. Violales

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## Rosidae, Rosanae

### Malpighiales

- Euphorbiaceae – mlečkovke



\*K<sub>0-6</sub>C<sub>0-6</sub>A<sub>1-∞</sub>C(3)

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## Rosidae, Rosanae

### Malpighiales

- Salicaceae – vrbovke



\*[K<sub>1-2</sub>]A<sub>2-∞</sub>//G<sub>(2-4)</sub>

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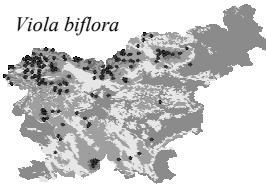
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## Rosidae, Rosanae

### Malpighiales

- Violaceae – vijoličevke

*Viola biflora*



↓K<sub>5</sub>C<sub>5</sub>A<sub>5</sub>G<sub>(3)</sub>

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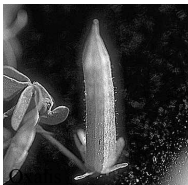
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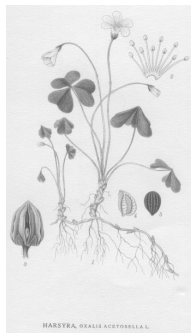
## Rosidae, Rosanae

### Oxalidales

- Oxalidaceae – deteljičevke



\*K<sub>5</sub>C<sub>5</sub>A<sub>(5+5)</sub>G<sub>(5)</sub>



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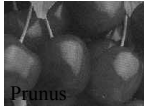
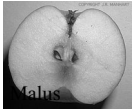
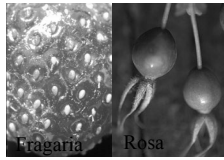
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# Rosidae, Rosanae

## Rosales

- Rosaceae – rožnice
  - subf. Rosoideae
  - subf. Spireoideae
  - subf. Prunoideae
  - subf. Maloideae



\*K<sub>5</sub>C<sub>5</sub>A<sub>5+5-∞</sub>G<sub>1-∞</sub>

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## uporabne rožnice

- *Rosa*: šipek, vrtnica
- *Prunus*: sliva, češnja, višnja, marelica, mandlji, breskev
- *Malus*: jablana
- *Pyrus*: hruška
- *Cydonia*: kutina
- *Fragaria*: jagodnjak (vrtne jagode)

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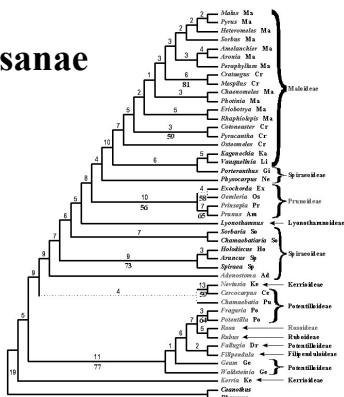
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# Rosidae, Rosanae

## Rosales

- Rosaceae – rožnice



www.botany.utoronto.ca/~rosaceae/evolution

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## Rosidae, Rosanae

### Rosales

- Urticaceae – koprivovke



*Urtica urens*

\*P<sub>4</sub>A<sub>4-5</sub>//G<sub>(2)</sub>



*Urtica dioica*

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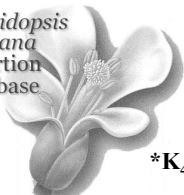
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## Rosidae, Brassicanae

### Brassicales

- Brassicaceae (Cruciferae) – križnice

*Arabidopsis thaliana*  
Insertion Database



\*K<sub>4</sub>C<sub>4</sub>A<sub>2+4</sub>G<sub>(2)</sub>

BOTANISCHER  
UNIVERSITÄT  
OSNABRÜCK  
GARTEN



Vom Wildkohl zum Kohlrabi  
Nutzpflanzen der Kreuzblütler in der Antike und heute

<http://atidb.cshl.org/index.html>

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## Rosidae, Brassicanae

### Brassicales

- ekonomsko pomembne križnice

*Armoracia rusticana*: hren

*Brassica oleracea*: zelje, ohrovt, brstični ohrovt, cvetača, koleraba

*B. rapa*: repa, kitajsko zelje

*B. napus*: oljna repica

*Eruca sativa*: rukvica (rukola)

*Raphanus sativus*: redkev

*Sinapis nigra*: orgščica

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## Rosidae, Brassicanae

### Malvales

- Malvaceae s. l. – slezenovke

\*K<sub>5</sub>C<sub>5</sub>A<sub>(5-∞)</sub>G<sub>(2-∞)</sub>



Malva

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## Rosidae, Brassicanae

### Mirtales

- Mirtaceae – mirtovke

\*K<sub>4-5</sub>C<sub>4-5</sub>A<sub>∞</sub>G<sub>(2-5)</sub>



Eucalyptus



Myrtus

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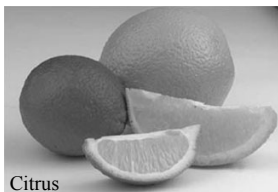
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## Rosidae, Brassicanae

### Sapindales

- Rutaceae – rutičevke

\*K<sub>4-5</sub>C<sub>4-5</sub>A<sub>4-∞</sub>G<sub>(4-∞)</sub>



Citrus



Dictamnus albus

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