

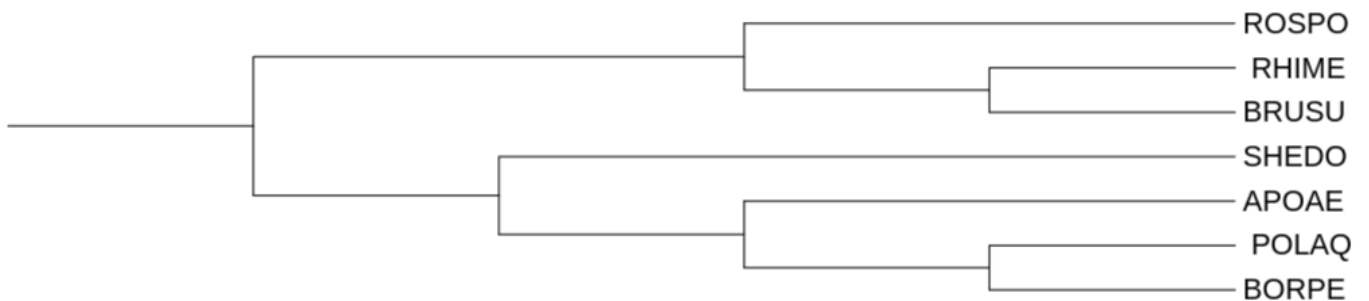
Блок1_Древеса

Название	А если кратко
<i>Roseobacter denitrificans</i>	ROSDO
<i>Brucella suis</i>	BRUSU
<i>Rhizobium meliloti</i>	RHIME
<i>Aromatoleum aromaticum</i>	AROAE
<i>Bordetella pertussis</i>	BORPE
<i>Polynucleobacter asymbioticus</i>	POLAQ
<i>Shewanella denitrificans</i>	SHEDO

Скобочная нотация:

```
((SHEDO, (APOAE, (BORPE, POLAQ))), (ROSP0, (BRUSU, RHIME))) ;
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Дерево:



Нетривиальные ветви:

- {POLAQ, BOPRE} vs {APOAE, SHEDO, BRUSU, RHIME, ROSPO}
- {POLAQ, BOPRE, APOAE} vs {SHEDO, BRUSU, RHIME, ROSPO}
- {POLAQ, BOPRE, APOAE, SHEDO} vs {BRUSU, RHIME, ROSPO}
- {POLAQ, BOPRE, APOAE, SHEDO, ROSPO} vs {BRUSU, RHIME}

Pr 2

Задание 1

Таксон	Краткое название
Bacteria ; Pseudomonadota ; Alphaproteobacteria ; Rhodobacterales ; Roseobacteraceae ; Roseobacter	ROSP0
Bacteria ; Pseudomonadota ; Alphaproteobacteria ; Hyphomicrobiales ; Brucellaceae ; Brucella/Ochrobactrum group ; Brucella	BRUSU

Таксон	Краткое название
Bacteria ; Pseudomonadota ; Alphaproteobacteria ; Hyphomicrobiales ; Rhizobiaceae ; Sinorhizobium/Ensifer group ; Sinorhizobium	RHIME
Bacteria ; Pseudomonadota ; Betaproteobacteria ; Rhodocyclales ; Rhodocyclaceae ; Aromatoleum	AROAE
Bacteria ; Pseudomonadota ; Betaproteobacteria ; Burkholderiales ; Alcaligenaceae ; Bordetella	BORPE
Bacteria ; Pseudomonadota ; Betaproteobacteria ; Burkholderiales ; Burkholderiaceae ; Polynucleobacter	POLAQ
Bacteria ; Pseudomonadota ; Gammaproteobacteria ; Alteromonadales ; Shewanellaceae ; Shewanella	SHEDO

Соответствие нетривиальных ветвей таксонам:

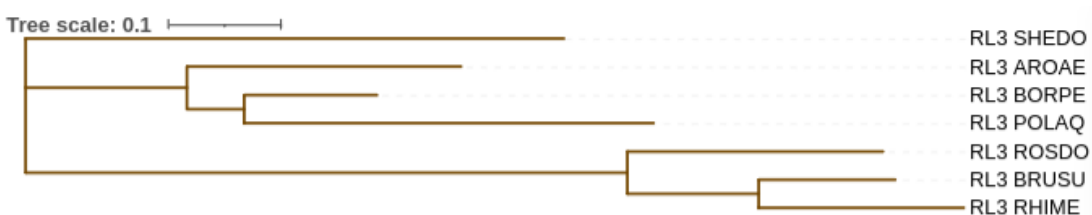
- {POLAQ, BOPRE} = *Burkholderiales*
- {POLAQ, BOPRE, APOAE} = *Betaproteobacteria*
- {POLAQ, BOPRE, APOAE, SHEDO} - нет конкретного таксона
- {BRUSU, RHIME} = *Hyphomicrobiales*
- {ROSP0, RHIME, BRUSU} = *Alphaproteobacteria*

Задание 2

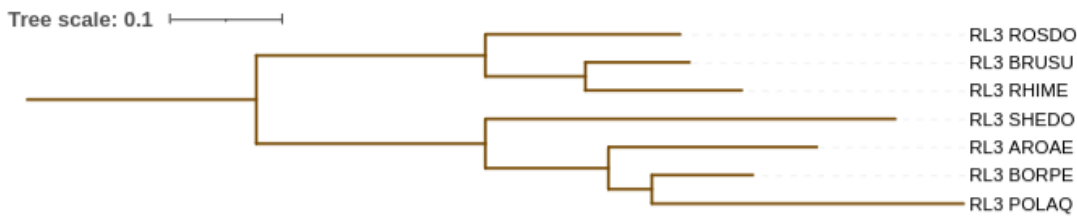
Построим дерево для этих же семи бактерий по третьему белку большой субъединицы рибосомы RL3 с помощью трёх различных связей, используя веб-сервис [NGPhylogeny](#):

- MAFFT + FastME + common_root

```
((RL3_AROAE:0.243565,
(RL3_POLAQ:0.363932,RL3_BORPE:0.117999):0.050811):0.143338,
((RL3_RHIME:0.18259,RL3_BRUSU:0.12157):0.116582,RL3_ROSDO:0.227095):0.5348,RL3_SHEDO:0.478315);
```

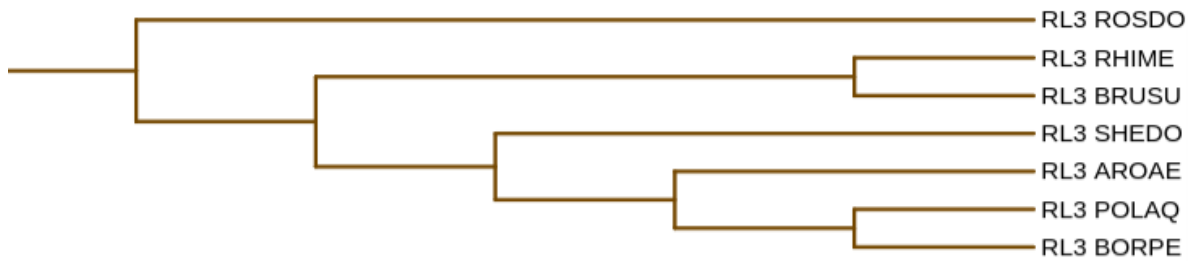


- MAFFT + FastME + midpoint_root



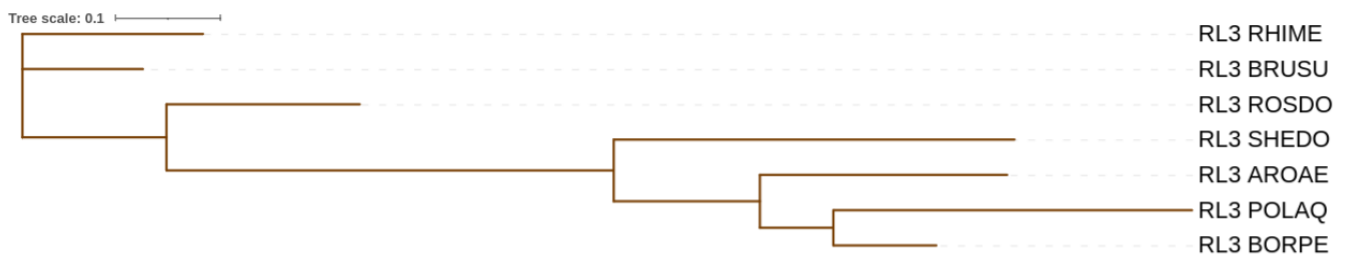
- MAFFT + TNT

```
(RL3_ROSDO, ((RL3_BRUSU, RL3_RHIME), (RL3_SHEDO, (RL3_AROAE, (RL3_BORPE, RL3_POLAQ)))));
```

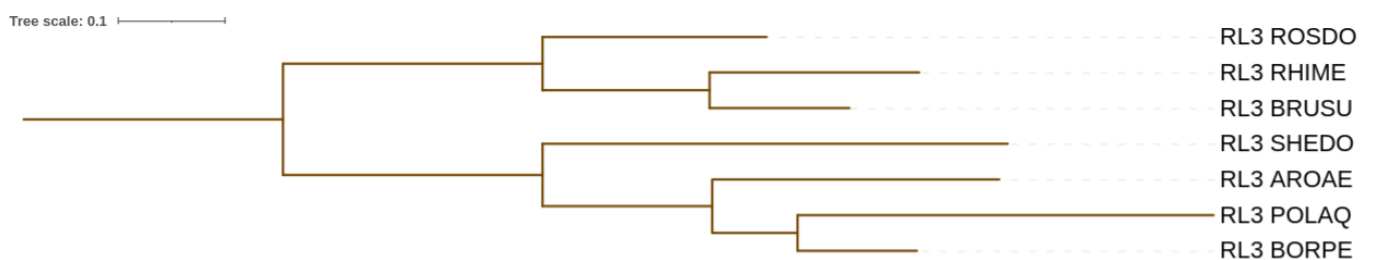


- MAFFT + PhyML

```
(RL3_BRUSU:0.11485371, RL3_RHIME:0.17218157,  
(RL3_ROSDO:0.18416425, (RL3_SHEDO:0.38222057,  
(RL3_AROAE:0.23576399,  
(RL3_BORPE:0.09790152, RL3_POLAQ:0.34169908)0.463:0.07005595  
)0.943:0.13950067)1:0.42631179)0.885:0.13733638);
```



- MAFFT + PhyML + midpoint_root

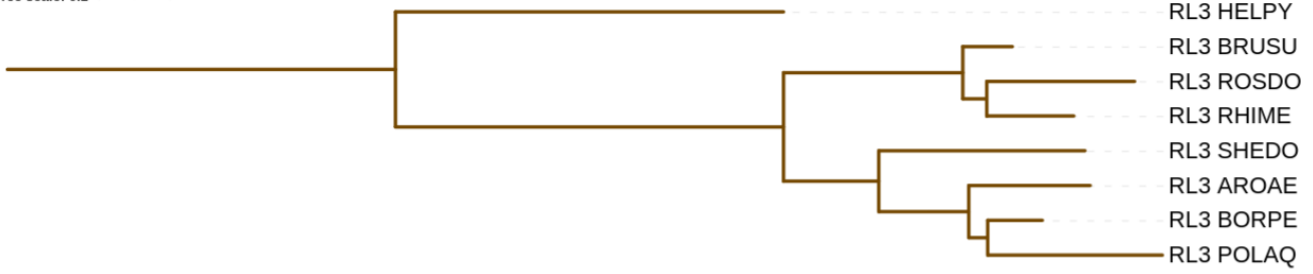


Pr 3

Задание 1

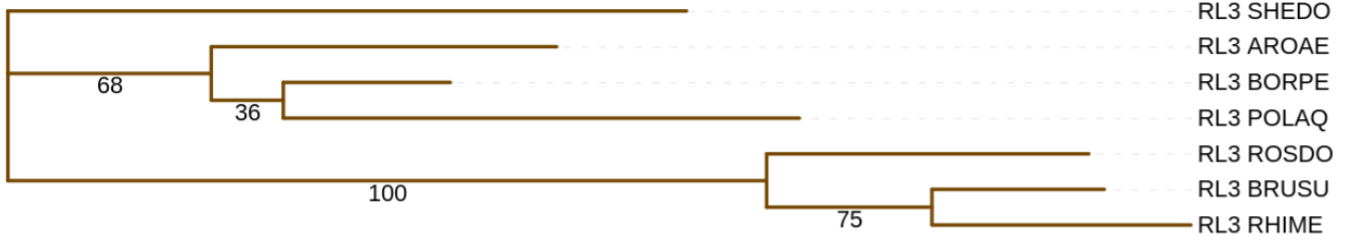
Результат укоренения с помощью аутгруппы (MAFFT + FastME) :

Tree scale: 0.1



Задание 2: Бутстреп

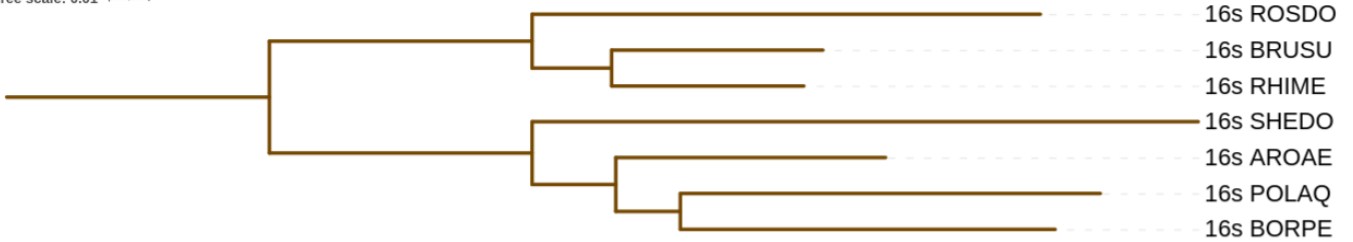
Tree scale: 0.1



Задание 3: 16s-pPHK

- MAFFT + FastMe + midpoint_root

Tree scale: 0.01



```
((16s_AROAE:0.078102,
(16s_BORPE:0.10842,16s_POLAQ:0.121513):0.018705):0.024223,
((16s_RHIME:0.055606,16s_BRUSU:0.061174):0.022991,16s_ROSDO
:0.147054):0.151995,16s_SHEDO:0.192736);
```