

MOLEKULAR PHYLOGENETICS AND TAXONOMY

MB160P21 (HAMPL AND NOVOTNÝ) 2024

Lectures will be held in the Parasitology lecture room on Mondays 9:00-10:30 am

30. 9. - Alignment of sequences (Novotný)

7. 10. – Sequence databases and searches in them (Novotný)

14.10. Introduction to taxonomy, molecular characters, sequencing of DNA (Hampl)

21. 10. – Other methods of obtaining molecular data – multilocus methods (RAPD, RFPL etc.), microsatellites, minisatellites, SINE elements, protein mass fingerprint (Hampl)

28.10. – State holiday

4. 11. - Calculation of genetic distances (Hampl)

11. 11. – Phylogenetic trees I. – introduction to trees, reconstruction of phylogenetic trees from the distance matrix (Hampl)

18. 11. - Phylogenetic trees II. Rate heterogeneity, search through the tree space, maximum parsimony (Hampl)

25. 11. - Phylogenetic trees III. - Maximum likelihood, Bayesian methods (Hampl)

2. 12. - Phylogenetic trees IV. - Multigene analyses, robustness of branching, rooting of trees, topology tests (Hampl)

9. 12. – Model tests, molecular clock (Hampl)

16. 12. – Barcoding and forensic science (Hampl)

6. 1. – Intraspecific relationships (Hampl)

13. 1. – Presentation of student essays

PRACTICALS OF MOLECULAR PHYLOGENETICS

MB160C21 (HAMPL AND NOVÁK) 2024

Practicals will be held in room B5 (V7) on Mondays at 13:00.

28. 11. – Database searches, sequence formats, alignment

5. 12. – Trees from the DNA sequences

12. 12. – Trees from amino acid sequences

19. 12. – Bayesian methods, molecular dating

9. 1. – Metabarcoding