

EMERGING ZOONOSES CAUSED BY TREMATODES AND OTHER HELMINTHS

CU characterization:

CU name: Emerging zoonoses caused by trematodes and other helminths Scientific area acronym: HM Duration: Semestral Working hours: 58 Contact hours: 33,5 ECTS: 2 Dbservations: Optional CU

Teacher in charge and respective teaching load in the CU: Manuela Calado – 36.3 hours

Other teachers and respective teaching load in the CU: Isabel Maurício – 24.9 hours Pedro Ferreira – 18.9 hours Silvana Belo – 3.6 hours

Intended learning outcomes (knowledge, skills and competences to be developed by the students):

After this unit, students should be able to:

- 1. Identify the major emerging and reemerging zoonoses and their etiological agents.
- 2. Associate the main intermediate hosts with their geographical distribution.
- **3.** Know the immunological diagnostic techniques applied to analyze the results and their applicability.
- **4.** Assess the different molecular diagnostic techniques, applied to trematodes and their intermediate hosts.



EMERGING ZOONOSES CAUSED BY TREMATODES AND OTHER HELMINTHS

Intended learning outcomes (knowledge, skills and competences to be developed by the students): (Continuation)

- **5.** Select the genetic markers most widely used in the study of trematode and its application in different epidemiological studies.
- **6.** Explain the different approaches of the techniques applied in malacological survey during a field work.

Syllabus:

- **I.** Trematodes with the importance in human and animal health. The importance of the intermediate hosts insight the climate change.
- **II.** The trematodes emerging and reemerging: the causes and effects.
- **III.** The immunological diagnostic techniques: concepts and generalities.
- **IV.** Different molecular techniques applied to the identification of the parasite in snails.
- **V.** Mechanisms of resistance to the various trematodes, resistance markers and drug resistance mechanisms used in therapy.
- **VI.** The molecular epidemiology: from theory to practice. Practical application of bioinformatics.
- VII. Introduction to the techniques applied in malacological survey during a field work.

Teaching methodologies (including assessment):

Lesson methodologies:

- a. Theoretical classes (T);
- b. Theoretical-practical classes (TP);
- c. Laboratory practices (PL);
- d. field exit
- e. Seminar(s)
- f. Tutorial guidance: general and follow-up of works for evaluation

The evaluation of students will be carried out as follows

- 1. Presentation of a final report
- 2. Continuous assessment
- 3. Students who present ratings below 10 in the final evaluation will be disapproved.
- 4. The final classification will be obtained from the formula:
- 20% continuous evaluation
- 80% final report



EMERGING ZOONOSES CAUSED BY TREMATODES AND OTHER HELMINTHS

References for consultation / mandatory existence:

- BROUSSELLE A, CHAMP AGNE F, CONTANDRIOPOULOS A-P e HARTZ ZMA (Org.) (2011). MasComa, S., Valero, A.A., Bargues; M.D., (2009). Climate change effects on trematodiases, with emphasis on zoonotic fascioloasis and schistosomiasis. Veterinary Parasitology, 163: 264280.
- Paull, S.H. and Pieter T.J. Johson., (2011). Hight temperatures enhance host pathology in a snailtrematode system: possible consequences of climate change for the emergence of disease. Freshwater Biology, 56: 767778.
- Hotez PJ, Brindley PJ, Bethony JM, King CH, Pearce EJ and Jacobson J (2008). Helminth infections: the great neglected tropical diseases. J Clin Invest. 118 (4): 1311¿1321.
- Lustigman S, Prichard RK, Gazzinelli A, Grant WN, Boatin BA, McCarthy JS, Basáñez MG., (2012). A research agenda for helminth diseases of humans: the problem of helminthiases. PLoS Negl Trop Dis, 6 (4):e1582.
- Cook C.G., Zumla A.I. (2008). Manson¿s Tropical Diseases, 22ª Ed. Elsevier Science, UK
 E: 1800 pp.