

Monitoring risk factors for spreading of leishmaniasis around the Mediterranean basin: A Euro-Mediterranean Co-ordination Action



- All over the world, several conditions are present for the (re-)emergence and spreading of leishmaniasis; this concerns specifically 3 major risk factors: human-made and environmental changes, host's immune status, treatment failure and drug resistance. Their synergy might create the critical mass of an explosive epidemiological status.
- Current surveillance networks are limited (Leishmania/HIV co-infection, not in all countries) and there is no integrated risk assessment.
- Using the Mediterranean region as a model, we aim to launch the bases for integrated and transborder surveillance and control of leishmaniasis.

Specific objectives:

- Review, assess and inform current scientific knowledge on the epidemiology and control of leishmaniasis around the Mediterranean
- Co-ordinate existing research on surveillance and control of leishmaniasis
- Disseminate and standardise relevant tools and good practice arising from research
- Advise national, regional and international health authorities on the most effective transborder control measures
- Identify gaps in current knowledge and expertise, and define future multidisciplinary research



Outputs and impact

- 5 workshops (diagnostics, molecular epidemiology, drugs, vaccines, GIS and environmental control) + 1 final conference (Leishrisk); e-compendium on epidemiology
- LEISHRISK + 2 new research proposals in FP7 call; several bilateral actions; exchange of staff
- 3 training sessions on molecular epidemiology, diagnostics and environmental surveillance
- Reports and recommendations, involvement of MoH in each workshop
- Advocacy for new calls, participation in the establishment of calls' priorities

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1. Papers

Advocacy: **1.** Dujardin, J.C. (2006) Risk factors in the spread of leishmaniases: towards integrated monitoring? *Trends Parasitol.*, 22: 4-6. **2.** Dujardin, J.C. et al. (2007) Global warming and spreading of neglected vector-borne diseases: a neglected problem in Europe? Letter published online on BMJ.COM <http://www.bmj.com/cgi/eletters/335/7620/576#178400>. **3.** Dujardin, J.C. et al. (2007) Globalisation of vector-borne diseases and neglect: the case of European leishmaniasis. In final stage

Epidemiology: **4.** Volf et al. (2007) Increased transmission potential of *Leishmania major/Leishmania infantum* hybrids. *Int. J. Parasitol.* 37 589–593. **5.** Mekuzas Y, Gradoni L, Oliva G, Foglia Manzillo V, Jaffe CL, Baneth G. *Ehrlichia canis/Leishmania infantum* co-infection: a 3-year longitudinal study in naturally exposed dogs. In preparation. **6.** Antoniou M, Haralambous C, Mazeris A, Pratlong F, Dedet J-P, Soteriadou K. *Leishmania donovani* causing visceral and/or cutaneous leishmaniasis entered into Europe: Cyprus evidence is an alarm call. *Lancet Infect Dis* 2007 accepted

Molecular epidemiology: **7.** Schönian, G. et al. (2007) (Re-) emergence and spreading of leishmaniasis around the Mediterranean: molecular epidemiology perspective. *Trends in Parasitology*, accepted. **8.** Seridi. N. et al. (2007) PCR-RFLP based study for genetic DNA polymorphism and molecular epidemiology of Algeria *Leishmania infantum* parasite. Submitted to *Trans. Roy. Soc. Trop. Med. Hyg.* **9.** Seridi, N., Schoenian, G. et al. Analysis of genetic polymorphism of Algerian *L.infantum* strains revealed by microsatellites markers. Final stage. **10.** Chargui, N., Schoenian, G. et al. Genetic polymorphism of *Leishmania infantum* in Tunisia. Final stage. **11.** Haralambous C, Dakkak A, Pratlong F, Dedet JP, Soteriadou K. 2007. First detection and genetic typing of *Leishmania infantum* MON-24 in a dog from the Moroccan Mediterranean coast: genetic diversity of MON-24. *Acta Trop.* 103 (1): 69-79.

Diagnosis: **12.** Reithinger, R., Dujardin, J.C., Louzir, H. et al. (2007) Cutaneous Leishmaniasis: Burden of Disease, Clinical Pathology, Epidemiology, Prevention and Control. *Lancet-Infectious Diseases*, 7: 581-596. **13.** Reithinger, R. and Dujardin, J.C. (2007) Molecular Diagnosis of Leishmaniasis: Current Status and Future Applications. *Journal of Clinical Microbiology*, 45(1):21-5. **14.** Campino, L. et al. (2007) Diagnosis of leishmaniasis in humans and dogs. Final stage

Treatment: **15.** Soteriadou, K. and Gradoni, L. Treatment of leishmaniasis around the Mediterranean: schemes and efficacy.

2. Manuals

16. Abo-Shehada, M. & Schonian, G. (2005). Handbook on molecular epidemiology of leishmaniasis. CD-Rom

17. Dakkak, A. & Campino, L (2006). Handbook on diagnosis of leishmaniasis. CD-Rom

3. E-compendium

18. Alvar, J. et al. (2007) Leishmaniasis epidemiology around the Mediterranean basin: an interactive e-compilation of all available peer-reviewed literature