

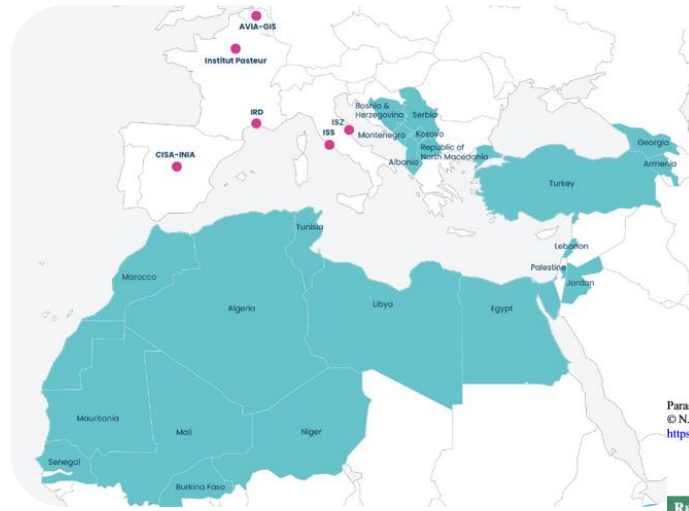
Cooperation for the surveillance of vector-borne diseases



International projects and Networking



The MediLabSecure project is a network aimed at preventing vector-borne diseases by strengthening an international network of laboratories and public health institutions in 22 beneficiary countries to ultimately promote integrated surveillance of emerging arboviruses.



Parasite 29, 45 (2022)
© N. Rahola et al., published by EDP Sciences, 2022
<https://doi.org/10.1051/parasite/2022045>

Assessment of expertise in morphological identification of mosquito species (Diptera, Culicidae) using photomicrographs

Escadafal et al. BMC Public Health (2016) 16:1279
DOI 10.1186/s12889-016-3831-1

MediLabSecure: A decade of One Health actions to prevent emerging vector-borne diseases
Jourdain et al. Parasites & Vectors (2018) 11:553
<https://doi.org/10.1186/s13071-018-3127-7>

CORRESPONDENCE Open Access
Risk of Zika virus transmission in the Euro-Mediterranean area and the added value of building preparedness to arboviral threats from a One Health perspective
Camille Escadafal¹, Lobna Gaayeb¹, Flavia Riccardo², Elisa Pérez-Ramírez², Marie Picard², Maria Grazia Dentè³, Jovita Fernández-Pinero², Jean-Claude Manuquerre², Miquel Àngel Jiménez-Clavero^{3,4}, Silvia Declich², Kathleen Vitte

RESEARCH Open Access
Identification of mosquitoes (Diptera: Culicidae): an external quality assessment of medical entomology laboratories in the MediLabSecure Network

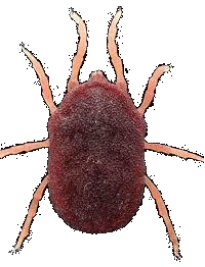
Journal of Infection and Public Health
Available online at: <http://www.elsevier.com/locate/jiph>

PARASITE
Available online at: www.parasite-journal.org

Borne Viruses and Their Vectors Black Sea Regions
MediLabSecure Network

oux¹, Ali Bouattour², Chafika Faraj³, Filiz Gunay⁴, Nabil Haddad⁵, Elzabeta Jancheska⁷, Khalil Kanani⁸, Mohamed Amin Kenawy⁹, Igor Pajovic¹¹, Lusine Paronyan¹², Dusan Petric¹³, Samir Sawalha¹⁵, Taher Shaibi¹⁶, Kurtesh Sherifi¹⁷, Enkelejda Velo¹⁸, Lobna Gaayeb²⁰, Kathleen Victor²⁰.

The project will adopt a comprehensive approach, integrating the human, animal and environmental health sectors to address these complex health threats.



International projects and Networking

DISPATCHES

***Borrelia hispanica* Relapsing Fever, Morocco**

M'hammed Sarih, Martine Garnier,
Najma Boudebouch, Ali Bouattour,
Abdelaziz Rihani, Mohammed Hassar, Lise Gern,
Danièle Postic, and Muriel Cornet

OPEN ACCESS Freely available online

PLOS ONE

The Epidemiology and Geographic Distribution of Relapsing Fever Borreliosis in West and North Africa, with a Review of the *Ornithodoros erraticus* Complex (Acari: Ixodida)

Jean-François Trape¹, Georges Diatta¹, Céline Arnathau¹, Idir Bitam¹, M'hammed Sarih¹, Driss Belghyti¹, Ali Bouattour⁴, Eric Elguero², Laurence Vial^{1,2}, Youssouph Mané¹, Cellou Baldé¹, Franck Pugnolle⁴, Gilles Chauvancy¹, Gil Mahé⁴, Laurent Granjon³, Jean-Marc Duplantier⁴, Patrick Durand^{4*}, François Renaud^{4*}

JOURNAL OF CLINICAL MICROBIOLOGY, Apr. 2005, p. 1587–1593
0095-1137/05/\$08.00+0 doi:10.1128/JCM.43.4.1587-1593.2005
Copyright © 2005, American Society for Microbiology. All Rights Reserved.

Vol. 43, No. 4

Vector-Borne and Zoonotic Diseases
Volume 10, Issue 9, November 2010, Pages 825–830
Copyright 2010, Mary Ann Liebert, Inc., Article Reuse Guidelines
<https://doi.org/10.1089/vbz.2009.0151>

Mary Ann Liebert, Inc. publishers

Original Article

***Borrelia crociduræ* Infection of *Ornithodoros erraticus* (Lucas, 1849) Ticks in Tunisia**

Ali Bouattour¹, Martine Garnier², Youma M'Ghirbi¹, M'hammed Sarih³, Lise Gern⁴, Elisabeth Ferquel², Danièle Postic², and Muriel Cornet^{2,5}

Characterization of *Borrelia lusitaniae* Isolates Collected in Tunisia and Morocco

Hend Younsi,¹† M'Hammed Sarih,²† Fatima Jouda,³ Edmond Godfroid,⁴
Lise Gern,³ Ali Bouattour,¹ Guy Baranton,⁵ and Danièle Postic^{3*}

Comparative Study > J Med Entomol. 2006 Jul;43(4):737-42.

doi: 10.1603/0022-2585(2006)43[737:rrlpaj]2.0.co;2.

Reservoir role of lizard *Psammotromus algirus* in transmission cycle of *Borrelia burgdorferi sensu lato* (Spirochaetaceae) in Tunisia

Najla Dsouli¹, Hend Younsi-Kabachii, Danièle Postic, Said Nouira, Lise Gern, Ali Bouattour

Comparative Study > Ticks Tick Borne Dis. 2016 Jul;7(5):653-656.

doi: 10.1016/j.ttbdis.2016.02.010. Epub 2016 Feb 8.

Molecular diagnosis of Rickettsia infection in patients from Tunisia

Fatma Khrouf¹, Hanene Sellami², Emna Elleuch³, Zouhour Hattab⁴, Lamia Ammari⁵, Moncef Khalfaoui⁶, Jihed Souissi⁴, Hejer Harrabi⁵, Youma M'Ghirbi¹, Hanene Tiouiri⁵, Mounir Ben Jemaa³, Adnene Hammami², Amel Letaief⁴, Ali Bouattour⁷, Abir Znazen²



veterinary sciences

MDPI

Article

First Evidence of *Rickettsia conorii* Infection in Dogs in Northern Tunisia

Zeyneb Gharbi^{1,2,*}, Ahmed Ouni², Ghofrane Balti², Ali Bouattour², Ahmed Chabchoub^{1,2,†} and Youma M'Ghirbi^{2,*,†}

Lyme Borrelioses (CE)
TicPath (ACIP)
Relapsing Fever (ACIP)
Rickettsioses (ACIP)



International projects and Networking

CUDISEMED (ANRS-MIE_Inserm)

- Investigate the circulation dynamics of WNV and USUV by tracking these viruses in their animal hosts and local vectors.
- Fulfilling the project objectives will provide valuable data enabling health authorities to develop evidence-based targeted control strategies and enhance early warning systems for arboviral outbreaks in the concerned countries and the Mediterranean basin.

EVARBO (Cooperation Tunisia-Algeria)

- To co-establish a joint Tunisian-Algerian laboratory of excellence for rapid and effective early warning of arboviruses.
- To conduct multidisciplinary investigations (human, veterinary, and entomological) for the serological and molecular surveillance of arboviruses (WNV, CCHFV, RVFV) for the purpose of a unified health approach.



International projects and Networking

MATI Project (PN)



Article

The Role of Ruminants as Sentinel Animals in the Circulation of the West Nile Virus in Tunisia

Ahmed Ouni ¹, Hajer Aounallah ¹, Wafa Kammoun Rebai ², Francisco Llorente ³, Walid Chendoul ⁴, Walid Hammami ¹, Adel Rhim ¹, Miguel Ángel Jiménez-Clavero ^{3,5}, Elisa Pérez-Ramírez ³, Ali Bouattour ¹ and Youmna M'Ghirbi ^{1,*}



Article

West Nile, Sindbis and Usutu Viruses: Evidence of Circulation in Mosquitoes and Horses in Tunisia

Youmna M'ghirbi ^{1,*}, Laurence Mousson ², Sara Moutailler ³, Sylvie Lecollinet ^{4,t}, Rayane Amaral ⁴, Cécile Beck ⁴, Hajer Aounallah ¹, Meriem Amara ¹, Ahmed Chabchoub ^{1,5}, Adel Rhim ¹, Anna-Bella Failloux ² and Ali Bouattour ¹

Article Dans Une Revue Biochimica et Biophysica Acta: Biomembranes Année : 2020

Evidence of circulation of West Nile virus in Culex pipiens mosquitoes and horses in Morocco

Najjaa Assaid (1), Laurence Mousson (2), Sara Moutailler (3), Soukaina Arich (1), Khadija Akarid (4), Maëlle Monier (5), Cécile Beck (5), Sylvie Lecollinet (5), Anna-Bella Failloux (2), M'Hammed Sarih (1)

OPEN ACCESS Freely available online



Culex pipiens, an Experimental Efficient Vector of West Nile and Rift Valley Fever Viruses in the Maghreb Region

Fadila Amraoui ^{1,6}, Ghazi Krida ^{2,3}, Ali Bouattour ², Adel Rhim ², Jabeur Daaboub ⁴, Zoubir Harrat ⁵, Said-Chawki Boubidi ⁵, Mhamed Tijane ⁶, Mhammed Sarih ¹, Anna-Bella Failloux ^{2,*}

PLOS NEGLECTED TROPICAL DISEASES

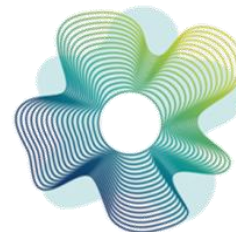
RESEARCH ARTICLE

First evidence of circulation of multiple arboviruses in Algeria

Said C. Boubidi ^{1*}, Laurence Mousson ², Tahar Kernif ¹, Fayez Khardine ³, Aïssam Hachid ⁴, Cécile Beck ⁵, Sylvie Lecollinet ⁵, Rayane A. Moraes ³, Sara Moutailler ⁴, Catherine Dauga ⁴, Anna Bella Failloux ²

SPOT

- Strengthen the capacity of the Pasteur Institute of Tunis to monitor zoonotic viruses.
- Improve the response to future epidemics in the region by integrating an innovative technology: MinION sequencing.



GHPP Global Health Protection Programme

Technical platform

Wide range of tools for the genetic characterization of pathogens

- Genotyping and molecular characterization of epidemic or endemic strains (Targeted amplification, metagenomics).
- Study of the dynamics of virus circulation.
- Phylogenetic study.

Mobile Lab



BSL3



Sanger



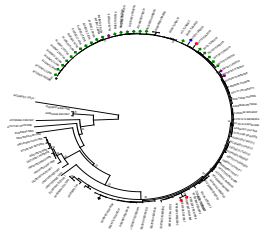
Illumina



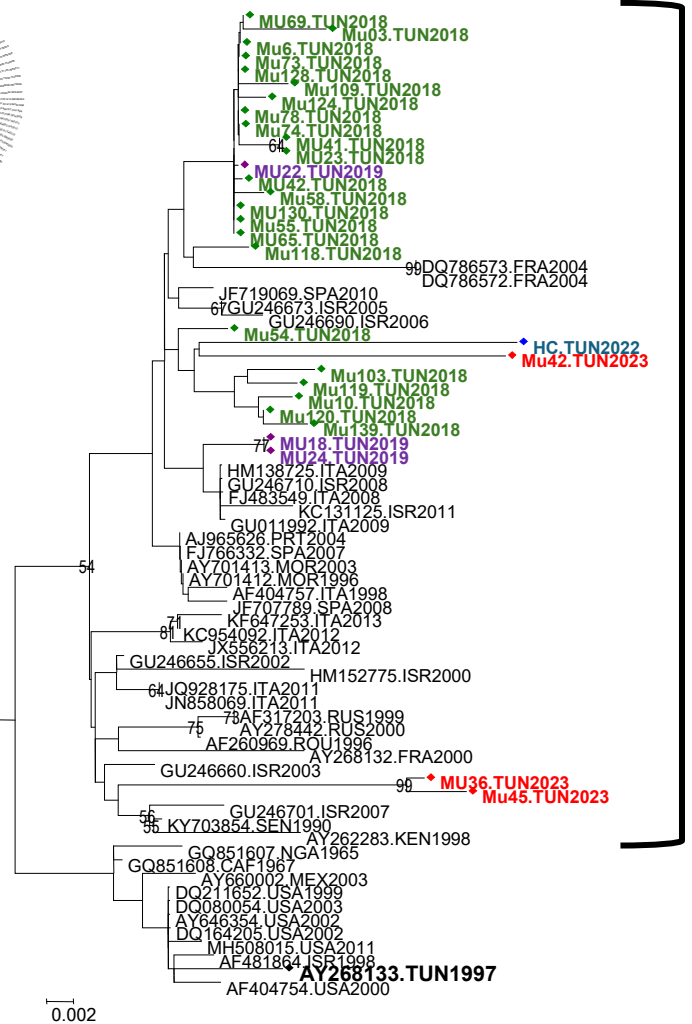
Oxford Nanopore sequencing

Expertises

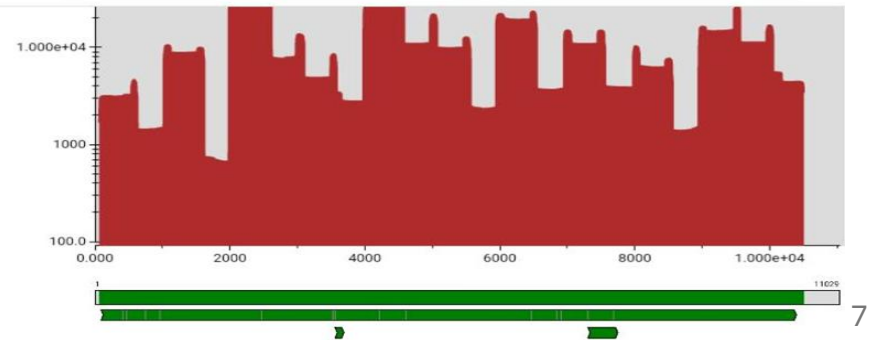
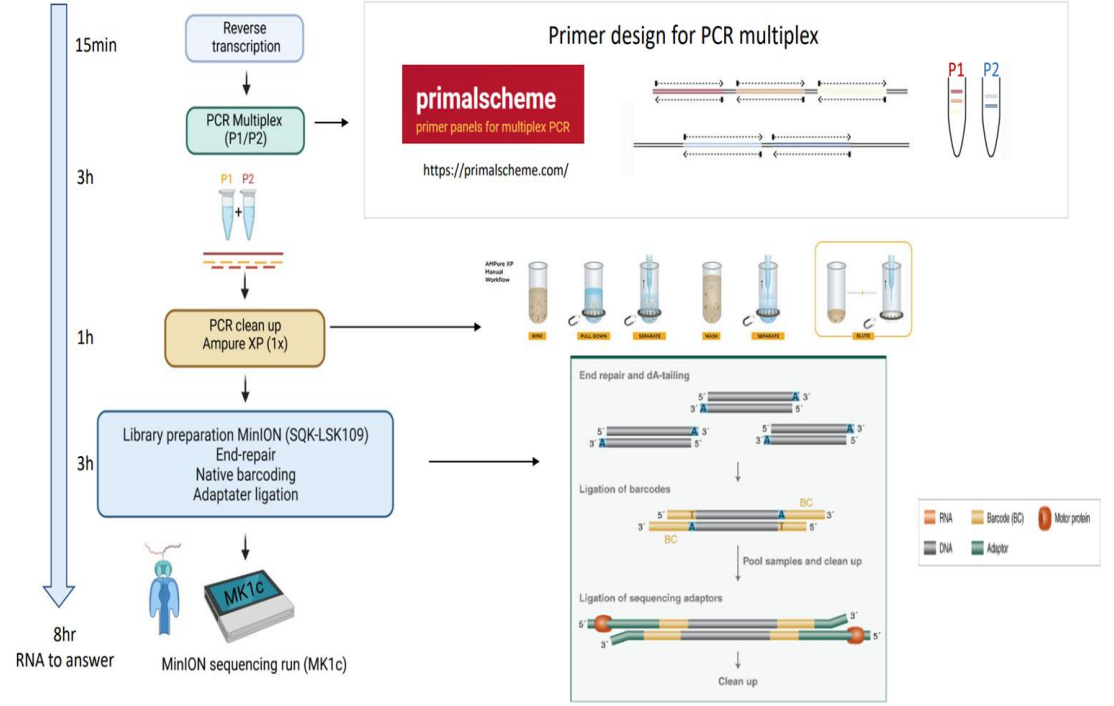
Entomological surveillance Molecular / Genomic surveillance of VBDs



Sublineage.1a



Mediterranean subtype



Strategic needs for VBD surveillance control

- **Data harmonization and ecoregional analysis**
 - Consolidate multi-source field data and standardize Operating Procedures.
 - Objective: Ensure a robust, interpretable, and actionable ecoregional analysis for proactive risk management of VBDs.
- **Strengthening early detection capabilities**
 - Invest in capacity building focused on early-stage identification of pathogens.
 - Enhance regional expertise to detect emerging threats before they reach epidemic thresholds.
- **Decentralized innovation and field diagnostics**
 - Shift innovation from the laboratory to the field through POC molecular biology tools.
 - Focus on pre-emergent detection: Identifying not only the pathogen but also the vector competence.
- **Operationalizing the "One Health" response**
 - Integrate entomological, veterinary, and environmental data into a single rapid-response framework.
 - Bridge the gap between technological innovation and field-level operational needs.

