

CURRICULUM VITAE

PERSONAL DATA

Miguel A. Morales, PhD

Assistant Professor

Dpt. Biological Sciences

278 Galvin Life Science

University of Notre Dame, IN, USA

Telephone (C): +1 574 631 7296

Email: miguel.morales@nd.edu

Date of birth: December 1, 1972

Place of birth: Madrid (Spain)

Nationality: Spanish

EDUCATION

2002 Ph.D. Thesis in the Laboratory of Leishmaniasis, ISCIII, Madrid, Spain (Dr. Jorge Alvar) on “**Molecular Epidemiology of *Leishmania*/HIV co-infection**”.
Score “*Magna Cum Laude*”

2002 Ph.D. Program in Biochemistry and Molecular Biology completed. UCM, Spain.

1997 MSc. in Biology, Universidad Complutense de Madrid (UCM), Spain

1993 Minor in Theoretical Physics, Universidad Complutense de Madrid (UCM), Spain

RESEARCH INTERESTS

Molecular biology of infectious diseases. Molecular parasitology. Signal transduction in parasitic systems. Phosphoproteomics. Drug development. Drug resistance in trypanosomatids.

PROFESSIONAL EXPERIENCE AND APPOINTMENTS

July-2011-Present **Assistant Professor**, University of Notre Dame

Sept. 2008 – May 2011: **Instructor** at Pasteur Institute, Paris, France on
"Phosphoproteomic approaches in *Leishmania*".

Nov. 2005 – Aug. 2008: **Research Associate** at Pasteur Institute, Paris, France on “Signal transduction molecules as drug targets in pathogenic protozoa”

Dec. 2002 – Sept. 2005: **PostDoc Fellow** at the New York University Medical Center, New York, USA on “Functional characterization of *Leishmania major* MAP kinases in environmental sensing and parasite differentiation”

March 98 – Dec. 2002: **Predoctoral Fellow**, at the National Center for Microbiology, ISCIII, Madrid, Spain on “Molecular epidemiology of *Leishmania*/HIV co-infection”

SCIENTIFIC ACTIVITIES

AWARDS:

Fellow of the Bourse Roux, Pasteur Institute, Paris, France (Sept. 2008- Feb. 2010).

Fellow of INSERM Avenir program (Sept 2005-March 2008)

Fellow of the Foundation for AIDS Research and Prevention in Spain (October 1998 to Dec. 2001). PhD

TEACHING EXPERIENCE:

Undergraduate courses: Medical and Molecular Parasitology and Mycology

Graduate Courses: Topics in Infectious Diseases

UNIVERSITY SERVICE:

Member Affirmative Action Committee, Notre Dame

Member Undergraduate Research Committee, Notre Dame

Eck Institute Pilot Project Grants Review Committee

MENTORING OF PhD STUDENTS:

Mariko Dacher, « Functional characterization of the *Leishmania* MAP kinase LmaMPK4 in parasite virulence using genetic and proteomic approaches ». Pasteur Institut, Paris, France.

Wai-Lok Yau, « Proteomic identification of *Leishmania* amastigote-specific phosphoproteins and functional characterization of their role in parasite differentiation and virulence ». Pasteur Institut, Paris, France.

COMMUNICATIONS AT MEETINGS: more than 30 presentations at International Meetings.

AWARDED TRAINING COURSES: awarded courses in Bioinformatics at Wellcome Trust Sanger Institute, Hinxton, UK; at EMBL, Heidelberg, Germany; WHO/TDR-NCBI-NIH Bioinformatics Training program at Fiocruz, Rio de Janeiro, Brasil.

PEER-REVIEWS: Experimental Parasitology, Molecular and Biochemical Parasitology, International Journal for Parasitology, Cellular Microbiology, PLOS Neglected Diseases

EDITORIAL BOARDS: Journal of Organ Biology

MEMBERSHIPS: American Society of Tropical Medicine and Hygiene (ASTMH), BSP (British Society of Parasitology), AAAS (American Association for the Advancement of Science), Kastler Foundation (France),

PUBLICATIONS (in chronological order, not including *in preparation*)

Miguel A. Morales, Juan R. Luque-Ortega, Mariko Dacher, Eric Prina, Francisco Gamarro, Luis Rivas, and Gerald F. Späth (2011). Stress-induced activation of the *L. major* MAP kinase LmaMPK7 increases parasite resistance against programmed cell death. *Submitted*

Hem S, Gherardini PF, Fortéa JO, Hourdel V, Morales MA, Watanabe R, Pescher P, Kuzyk MA, Smith D, Borchers CH, Zilberstein D, Helmer-Citterich M, Namane A, Späth GF (2010). Identification of *Leishmania*-specific protein phosphorylation sites by LC-ESI-MS/MS and comparative genomics analyses. *Proteomics. Sep 9. (Epub ahead of print)*

Miguel A. Morales, Reiko Watanabe, Mariko Dacher, Philippe Chafey, José Osorio y Fortéa, David A. Scott, Stephen M. Beverley, Gabi Ommen, Joachim Clos, Sonia Hem, Pascal Lenormand, Jean-Claude Rousselle, Abdelkader Namane and Gerald F. Späth (2010). Phosphoproteome dynamics reveals heat shock protein complexes specific to the *Leishmania* infectious stage. *Proc. Natl. Acad. Sci. U S A Apr 19. (Epub ahead of print)*

Wai-Lok Yau, Thierry Blisnick, Jean-François Taly, Manuela Helmer-Citterich, Cordelia Schiene-Fischer, Olivier Leclercq, Jing Li, Dirk Schmidt-Arras, Miguel A. Morales, Cedric Notredame, Daniel Romo, Philippe Bastin, and Gerald F. Späth (2010). Cyclosporin A treatment of *Leishmania donovani* reveals stage-specific functions of cyclophilins in parasite proliferation and viability. *PLOS Negl Trop Dis. Jun 29; 4(6):e729*

Morales MA, Pescher P, Späth GF. (2009). *Leishmania major* LmaMPK7 protein kinase activity inhibits intracellular growth of the pathogenic amastigote stage. *Eukaryot Cell. Oct 2*

Peduto L, Dulauroy S, Lochner M, Späth GF, Morales MA, Cumano A, Eberl G. (2009). Inflammation recapitulates the ontogeny of lymphoid stromal cells. *J Immunol.* May 1;182(9):5789-9

Morales MA & Rotureau B, Bastin P, Späth GF (2009). The flagellum-MAP kinase connection in Trypanosomatids: a key sensory role in parasite signaling and development? *Cell Microbiol.* Feb 4.

Morales MA., Watanabe R., Laurent C., Lenormand P., Rousselle JC., Namane A. and Späth G. (2008). Phosphoproteomic analysis of *Leishmania* promastigote and amastigote life stages *Proteomics.* 8(2):350-63

MA. Morales, O. Renaud, W. Faigle, SL. Shorte and GF. Späth (2007) Over-expression of *Leishmania major* MAP kinases reveals stage-specific induction of phosphotransferase activity. *Int J Parasitol.* 37, 1187-1199

Montero E, Gonzalez LM, Bonay P, Rosas G, Hernandez B, Sciutto E, Parkhouse RM, Harrison LJ, Morales MA, Garate T (2007) *Taenia solium*: Identification and preliminary characterization of a lipid binding protein with homology to the SEC14 catalytic domain. *Exp Parasitol.* 116, 191-200

Lopez-Velez R, Videla S, Marquez M, Boix V, Jimenez-Mejias ME, Gorgolas M, Arribas JR, Salas A, Laguna F, Sust M, Canavate C, Alvar J; Spanish HIV-Leishmania Study Group (2004) Amphotericin B lipid complex versus no treatment in the secondary prophylaxis of visceral leishmaniasis in HIV-infected patients. *J Antimicrob Chemother* Mar;53(3):540-3. Epub 2004 Jan 22.

Laguna F, Videla S, Jimenez-Mejias ME, Sirera G, Torre-Cisneros J, Ribera E, Prados D, Clotet B, Sust M, Lopez-Velez R, Alvar J; Spanish HIV-Leishmania Study Group. (2003) Amphotericin B lipid complex versus meglumine antimoniate in the treatment of visceral leishmaniasis in patients infected with HIV: a randomized pilot study. *J Antimicrob Chemother* Sep;52(3):464-8. Epub 2003 Jul 29.

M.A. Morales & I. Cruz, I. Noguera, A. Rodríguez, J. Alvar (2002) *Leishmania* in Discarded Syringes from Intravenous Drug Users. *Lancet* 359: 1124-25

M.A. Morales, I. Cruz, J.M. Rubio, C. Chicharro, C. Cañavate, F. Laguna & J Alvar (2002). Relapses vs Reinfections in *Leishmania infantum* / Human Immunodeficiency Virus Type 1 Coinfected Patients. *Journal of Infectious Diseases* 185: 1533-1537

I.Cruz, C. Cañavate, J.M. Rubio, M.A. Morales, C. Chicharro, F. Laguna, M. Jiménez Mejías, G. Sirera, S. Videla & J. Alvar, for the Spanish HIV-Leishmania Study Group. (2002). *Leishmania infantum* Nested Polymerase Chain Reaction (Ln-PCR) a Comparative Study with Other Techniques for Diagnosis and Monitoring of *Leishmania*/HIV

Coinfected Patients. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, suppl 1, 96: 185-189

Chicharro, C. & Morales, MA., Serra, T., Ares, M., Salas, A. y Alvar, J. (2002) Molecular epidemiology of *Leishmania infantum* in the island of Majorca (Spain): a comparison of phenotypic and genotypic tools. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, suppl 1, 96: 93-99

Morales, MA., Chicharro, C., Ares, M., Cañavate, C., Barker, DC. y Alvar, J. (2001) Molecular tracking of infections by *Leishmania infantum*. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 95:104-107

REFEREED PAPERS IN PUBLISHED CONFERENCE PROCEEDINGS & BOOK CHAPTERS

J. Alvar, I. Cruz, **MA Morales** and C. Cañavate (2002). Molecular biology tools in leishmaniasis diagnosis and epidemiology. *Proceedings of the 2nd International Canine Leishmaniasis Forum. Seville, Spain*

Gárate, T., Benito, A., Chicharro, C., De Fuentes, I., **Morales, M. A., Rodríguez, E., Rubio, J. M. y Alvar, J. (2001)**. *Diagnóstico molecular de brotes por parásitos*. En "Etiopatogenia y diagnóstico en enfermedades tropicales" pp: 81-93. Ed: SEMTSI.

ADDITIONAL INFORMATION

Trilingual in English / Spanish/French.

References kindly provided upon request.

PARTICIPATION IN RESEARCH PROJECTS

PROJECT TITLE: Phenotype versus genotype to understand *Leishmania infantum* population structure.

FINANCIAL ENTITY: DGICYT, ref. PB95-003

LENGHT **FROM:** 01/01/1996 **TO:** 31/12/1999

PRINCIPAL INVESTIGATOR: Dr Jorge Alvar

PROJECT TITLE: Molecular epidemiology of the HIV-*Leishmania* co-infection

FINANCIAL ENTITY: FIPSE, Ref. 3056/99

LENGHT **FROM:** 01/10/99 **TO** 30/09/02

PRINCIPAL INVESTIGATOR: Dr. Jorge Alvar

PROJECT TITLE: *The role of Leishmania MAP kinases in virulence*

FINANCIAL ENTITY: WHO/TDR

LENGHT **FROM:** 03/2002 **TO** 03/2004

PRINCIPAL INVESTIGATOR: Dr G. Spaeth

PROJECT TITLE: *CD1-mediated immunity in visceral leishmaniasis*

FINANCIAL ENTITY: Starr Foundation

LENGHT **FROM:** 09/2003 **TO** 08/2005

PRINCIPAL INVESTIGATOR: Dr G. Spaeth

PROJECT TITLE: *Identification of signaling pathways implicated in Leishmania differentiation and stage-specific gene expression.*

FINANCIAL ENTITY: INSERM Avenir and DGS

LENGHT **FROM:** 04/2005 **TO** 05/2010

PRINCIPAL INVESTIGATOR: Dr G. Spaeth

PROJECT TITLE: *Targeting the Leishmania kinome for the development of novel anti-parasitic strategies.*

FINANCIAL ENTITY: EU FP7 Program

LENGHT **FROM:** 2008 **TO** 2011

PRINCIPAL INVESTIGATOR: Dr G. Spaeth (Coordinator)

PRESENTATIONS IN CONGRESSES

AUTHORS: Morales MA
TITLE: "Leishmania signal transduction: new pathways for resistance"
TYPE OF PRESENTATION: Invited speaker
CONGRESS: Seminar
PUBLICATION:
MEETING PLACE: Dpt of Biological Sciences, University of Notre Dame, IN, USA
YEAR: 2011

AUTHORS: Morales MA
TITLE: "Dissecting Leishmania stress response"
TYPE OF PRESENTATION: Invited speaker
CONGRESS: Seminar
PUBLICATION:
MEETING PLACE: Biochemistry Dpt., Virginia Tech, VI, USA
YEAR: 2010

AUTHORS: Morales MA, Spaeth G
TITLE: Phosphoproteomic analysis of Leishmania donovani amastigotes"
TYPE OF PRESENTATION: Oral
CONGRESS: WorldLeish
PUBLICATION:
MEETING PLACE: Lucknow, India
YEAR: 2009

AUTHORS: Morales MA et al.
TITLE: "Identification of stage-regulated foldosome complexes in Leishmania donovani by quantitative phosphoproteomics"
TYPE OF PRESENTATION: Invited speaker
CONGRESS: . XXXI Congreso Spanish Society of Biochemistry and Molecular Biology
PUBLICATION:
MEETING PLACE: , Bilbao, Spain
YEAR: 2008

AUTHORS: Morales MA, Spaeth G
TITLE: "Monitoring amastigote-specific signaling in Leishmania donovani by quantitative phosphoproteomics"
TYPE OF PRESENTATION: Oral
CONGRESS: British Society of Parasitology Annual Meeting
PUBLICATION:
MEETING PLACE: Newcastle, UK

YEAR: 2008

AUTHORS: Morales MA, Spaeth G

TITLE: "Over-expression of *Leishmania major* MAP kinase LmaMPK7 leads to increased phosphorylation of endogenous phosphoprotein substrates and interferes with parasite growth and virulence"

TYPE OF PRESENTATION: Oral

CONGRESS: British Society of Parasitology Annual Meeting

PUBLICATION:

MEETING PLACE: Newcastle, UK

YEAR: 2008

AUTHORS: Morales MA, Watanabe R, Spaeth G

TITLE "Phosphoproteomic analysis of *Leishmania donovani* life cycle stages using 2D gel electrophoresis and multiplex fluorescent protein staining"

TYPE OF PRESENTATION: Oral

CONGRESS: Spectrométrie de masse et analyse protéomique

PUBLICATION:

MEETING PLACE: Pau, France

YEAR: 2007

AUTHORS: Morales MA

TITLE "Proteomics approaches in epidemiological contexts"

TYPE OF PRESENTATION: Invited speaker

CONGRESS: Seminar

PUBLICATION:

MEETING PLACE: Department of Medical Parasitology, NYU School of Medicine, NY, USA

YEAR: 2007

AUTHORS: Morales MA et al

TITLE "Phosphoproteomic analysis of *Leishmania* promastigote and amastigote life stages: from substrates to MAP kinases"

TYPE OF PRESENTATION: Oral

CONGRESS: Kinetoplastid Molecular Cell Biology. MBL

PUBLICATION:

MEETING PLACE: Woods Hole, MA, USA

YEAR: 2007

AUTHORS: Morales MA, Spaeth GF

TITLE "Targeting *Leishmania* signaling"

TYPE OF PRESENTATION: Oral

CONGRESS: Department of Parasitology and Mycology Symposium

PUBLICATION:

MEETING PLACE: Institut Pasteur, Paris, France

YEAR: 2006

AUTHORS: Morales MA, Spaeth GF
TITLE "Targeting Leishmania signaling for drug and vaccine development"
TYPE OF PRESENTATION: Oral
CONGRESS: Department of Parasitology and Mycology Symposium
PUBLICATION:
MEETING PLACE: Institut Pasteur, Paris, France
YEAR: 2005

AUTHORS: Morales MA, Spaeth GF
TITLE Leishmania signal transduction
TYPE OF PRESENTATION: Oral
CONGRESS: ASTMH, 52nd Annual Meeting
PUBLICATION:
MEETING PLACE: Philadelphia, Pennsylvania, USA.
YEAR: 2003

AUTHORS: Morales MA, Spaeth GF
TITLE "Functional characterization of Leishmania major MAP kinases in environmental sensing and parasite differentiation
TYPE OF PRESENTATION: Oral (best presentation award)
CONGRESS: Molecular Parasitology Meeting XIV
PUBLICATION:
MEETING PLACE: Woods Hole, MA USA Philadelphia, Pennsylvania, USA.
YEAR: 2003

AUTHORS: Morales MA et al
TITLE "UPGMA dendrogram based on PCR-RFLP to reveal zoonotic and anthroponotic cycles of Leishmania infantum in the island of Majorca"
TYPE OF PRESENTATION: Poster
CONGRESS: Worldleish 2
PUBLICATION:
MEETING PLACE: Creta, Greece
YEAR: 2001

AUTHORS: Morales MA et al
TITLE "Relapses versus reinfections in Leishmania/HIV coinfectd patiens".
TYPE OF PRESENTATION: Oral
CONGRESS: Worldleish 2
PUBLICATION:
MEETING PLACE: Creta, Greece
YEAR: 2001

AUTHORS: Chicharro, C., Morales, M. A. y Alvar, J.
TITLE "Phenotypic characterization of *Leishmania infantum* from Spain".
TYPE OF PRESENTATION: *Poster*
CONGRESS: Worldleish 2
PUBLICATION:
MEETING PLACE: Creta, Greece
YEAR: 2001

AUTHORS: Alvar J, Morales MA, Cruz I, El Bali M, Jiménez M, Chicharro C & Cañavate C.
TITLE "Leishmania-HIV Coinfection: Transmission by Syringes
TYPE OF PRESENTATION: *Oral*
CONGRESS: Worldleish 2
PUBLICATION:
MEETING PLACE: Creta, Greece
YEAR: 2001

AUTHORS: Cruz I, Morales MA, Cañavate C, Noguer I, Rodríguez A & Alvar J.
TITLE "Leishmania in Discarded Syringes from Intravenous Drug Users (IVDUs)".
TYPE OF PRESENTATION: *Poster*
CONGRESS: Worldleish 2
PUBLICATION:
MEETING PLACE: Creta, Greece
YEAR: 2001

AUTHORS: Cruz I, Cañavate C, Rubio JM, Morales MA, Chicharro C & Alvar J.
TITLE "Leishmania infantum Nested Polymerase Chain Reaction (LN-PCR) a Comparative Study with Other Techniques for Diagnosis and Monitoring of Leishmania/HIV Coinfected Patients
TYPE OF PRESENTATION: *Poster*
CONGRESS: Worldleish 2
PUBLICATION:
MEETING PLACE: Creta, Greece
YEAR: 2001

AUTHORS: Alvar, J., Morales, M. A., Cruz, I., Chicharro, C., El Bali, M., Serra, T. y Cañavate, C
TITLE "Molecular tracking of *Leishmania infantum*
TYPE OF PRESENTATION: *Oral*
CONGRESS: XII Mediterranean Congress of Chemotherapy
PUBLICATION:
MEETING PLACE: . Marrakesh Morocco
YEAR: 2000

AUTHORS: Alvar, J., Morales, M.A., Chicharro, C., Cañavate C., y Barker, D. C.

TITLE "Molecular tracking of *Leishmania infantum*

TYPE OF PRESENTATION: Oral

CONGRESS: New Challenges in Tropical Medicine and Parasitology

PUBLICATION:

MEETING PLACE Oxford (UK),

YEAR: 2000

AUTHORS: Morales, M.A., Chicharro, C., Cañavate, C., y Alvar

TITLE Molecular epidemiology of *Leishmania infantum* in the island of Majorca. Phenotypic and genotypic characterization tools" ,

TYPE OF PRESENTATION: Poster

CONGRESS: New Challenges in Tropical Medicine and Parasitology

PUBLICATION:

MEETING PLACE Oxford (UK),:

YEAR: 2000

AUTHORS: Morales, M.A., Chicharro, C., Cañavate, C., Alvar, J. and the Spanish HIV-*Leishmania* Study Group.

TITLE "Molecular tracking of infections by *Leishmania infantum* in patients coinfecting with HIV

TYPE OF PRESENTATION: Poster

CONGRESS: New Challenges in Tropical Medicine and Parasitology

PUBLICATION:

MEETING PLACE Oxford (UK),:

YEAR: 2000

AUTHORS: M.A. Morales, C. Chicharro, M. Ares, C. Cañavate y J. Alvar

TITLE Seguimiento molecular de coinfecciones *Leishmania infantum*/HIV

TYPE OF PRESENTATION: Poster

CONGRESS: II Congreso de la Sociedad Española de Medicina Tropical y Salud Internacional

PUBLICATION:

MEETING PLACE Sitges, Spain

YEAR: 2000

AUTHORS: C. Chicharro, M.A. Morales, M. Ares y J. Alvar.

TITLE El zimodema MON-253 de *L. infantum* responsable de un brote entre pacientes ADVP

TYPE OF PRESENTATION: Poster

CONGRESS: VI Congreso Ibérico de Parasitología

PUBLICATION:

MEETING PLACE Cordoba, Spain

YEAR: 1999