

JAIME COSTALES CORDERO, Ph.D.

PERSONAL INFORMATION

Nationality Ecuadorian
D.O.B. April 23rd, 1976
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CURRENT ACADEMIC POSITION

Assistant professor, Center for Infectious Disease Research, Biological Sciences School, Pontificia Universidad Católica del Ecuador.

TRAINING

2005-2008 Postdoctoral training. Department of Immunology and Infectious Diseases, Harvard School of Public Health.

1999-2004 Ph.D. in Biological Sciences, Department of Biological Sciences, Molecular and Cellular Biology program, Ohio University.

1994-1999 B.Sc. in Biological Sciences, Pontificia Universidad Católica del Ecuador.

RESEARCH ACTIVITIES

Current Evaluation of the trypanosomacidal activity of peptides from amphibians and extracts from Ecuadorian native endophytic fungi. Funding: Ecuadorian Secretariat for Science and Technology and Pontificia Universidad Católica del Ecuador. Role: project director.

Study of the intracellular invasion route preferences of Ecuadorian isolates of *Trypanosoma cruzi*. Funding: Pontificia Universidad Católica del Ecuador. Role: project director.

Identification of the clinical manifestations of Chagas disease in Manabí province, Ecuador, and molecular characterization of the causative agents. Funding: World Health Organization (TDR) and Pontificia Universidad Católica del Ecuador and. Role: project director.

Characterization of *Trypanosoma cruzi* strains from Southern Ecuador. Funding: National Institute of Health (NIH), U.S.A. Role: associate investigator.

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Chagas EpiNet. Funding: European Commission. Role: associate investigator in partner# 15, Ecuador.

- 2005-2008 Postdoctoral project: Modulation of host cell gene expression induced by infection with *Trypanosoma cruzi*.
- 1999-2004 Graduate research on Dr. Edwin Rowland's laboratory at the Biological Sciences Department of Ohio University: Inhibition of release of *Trypanosoma cruzi* induced by interaction of antibodies with a 98 KDa host cell component.
- 2000-2004 Evaluation of the prevalence of Chagas' disease and other transfusion related infections among blood donors in the Ecuadorian blood bank system. Role: Performed the experimental work and data analysis.
- 1997-2008 Evaluation of prevalence of Chagas' disease in endemic areas of Ecuador. Role: performed the experimental work and data analysis.

TEACHING ACTIVITIES

- 2008-present Molecular Biology professor in the Tropical Disease Track, doctoral program, Pontificia Universidad Católica del Ecuador.
- 2010 Leader of the Clinical Component of the 10th Tropical Disease Research Program in Ecuador, organized by Ohio University's Tropical Disease Institute.
- 2010 Instructor in the 2nd International Research Training Course in Ecuador, organized by the Ohio University's Tropical Disease Institute.
- 2009 Instructor in the 1st International Research Training Course in Ecuador, organized by the Ohio University's Tropical Disease Institute.
- 2008 Trip leader at the 16th Ohio University Tropical Disease Institute Workshop in Tropical Disease Biology in Ecuador.
- 1999-2004 Graduate Teaching Assistant teaching laboratories in Microbiology (MICR 212, MICR311) and Immunology (MICR 415/515).
- 2001 Ohio University Tropical Disease Institute Laboratory, Quito-Ecuador. Trained technicians in immunodiagnosis of Chagas' disease.

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- 2000-2002 Teaching Assistant at Ohio University Tropical Disease Institute
8th, 9th and 10th Workshops in Tropical Disease Biology in Ecuador.
- 1999 Ecuadorian Red Cross Blood Bank, Quito-Ecuador. Trained technicians in immunodiagnosis of Chagas' disease for the screening of donated blood.
- 1999 National Institute of Health, Quito-Ecuador. Trained technicians in immunodiagnosis of Chagas' disease.

HONORS

- 2011 – present Appointed as a delegate to the Technical/Scientific Advisory Committee for the National Control Program of Chagas Disease of the Ecuadorian Ministry of Health
- 2010 – present President of the provincial regional sub-office for the Ecuadorian Society of Biology for the Pichincha province
- 2010 Selected among 10 young scientist around the world to be a speaker at the “Young Scientist Symposium” of the 7th Science and Technology Forum”, Kyoto, Japan
- 2010 – present Selected as young scientist affiliate of the Academy of Sciences of the Developing World (TWAS)
- 1999 – 2004 Studentship and Teaching Assistantship. Molecular and Cellular Biology Program. Biological Sciences School. Ohio University. USA.

AFFILIATIONS AND MEMBERSHIPS

- 2010 – present American Society of Tropical Medicine and Hygiene. Member.
- 2010 – present Ecuadorian Society of Biology. Member.
- 2008 – present Adjunct Faculty, Tropical Disease Institute, Ohio University.

COMPLETED RESEARCH SUPPORT

- 2009 Pontificia Universidad Católica del Ecuador, Research Grants.
“Serological and molecular evaluation of the incidence of infection by *Bartonella bacilliformis* in blood banks of Ecuador”.
- 2008 Pontificia Universidad Católica del Ecuador, Research Grants.
Project: “Cell invasion mechanism of Ecuadorian *Trypanosoma cruzi* strains”

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- 2003 Ohio University Graduate Student Senate Original Work Grant. Project "Evaluation of the protective effect of release inhibiting antibodies in experimental Chagas disease".
- 2003 Sigma-Xi Grants in Aid for Research. Project "Immunolocalization of the target for the release inhibiting antibodies on tissue culture cells".
- 2002 John Houk Memorial Research Grant, Ohio University. Project "Identification of the target for the release inhibiting antibodies".
- 2000 John Houk Memorial Research Grant, Ohio University. Project: "Optimization of the specificity of *Trypanosoma cruzi* epimastigote antigen by purification of its non-cross reactive components".

ONGOING RESEARCH SUPPORT

- 2010 Identification of natural products derived from the Ecuadorian Biodiversity with potential for treatment of diseases caused by protozoans (Chagas and malaria). Funded by the Ecuadorian Secretariat for Science and Technology, SENESCYT. Role: P.I.
- 2010 Regional Training Center for Tropical Disease Research in Quito-Ecuador. Funded by the Global Infectious Disease Training Program (D43) of the Fogarty Center, National Institutes of Health, NIH. Role: Training Mentor. Developed the proposal in collaboration with the P.I., Dr. Mario Grijalva.
- 2010 Evaluation of the trypanosomacidal activity of peptides from amphibians and extracts from Ecuadorian native plants. Funding: Pontificia Universidad Católica del Ecuador. Role: Project director.
- 2009 Special Programme for research and Training Tropical Disease Research of the World Health Organization (TDR/WHO). "Leadership development and strengthening of the research and training capacity in Tropical Disease in Ecuador". Role: Project director. Role: Project director.
- 2009 Pontificia Universidad Católica del Ecuador, Research Grants. "Identification of the clinical manifestations of Chagas disease among hospitalized patients in Manabí province, Ecuador, and molecular characterization of the causative agents". Role: Project director.

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PUBLICATIONS

1. Mott, G.A., **Costales, J.A.**, Burleigh, B.A. 2011. A soluble factor from *Trypanosoma cruzi* inhibits transforming growth factor- β -induced MAP kinase activation and gene expression in dermal fibroblasts. PLoS One. In press.
2. Sex, subdivision, and domestic dispersal of *Trypanosoma cruzi* lineage I in southern Ecuador. 2010. Ocaña-Mayorga S, Llewellyn MS, **Costales JA**, Miles MA, Grijalva MJ. PLoS Negl Trop Dis. 14;4(12):e915.
3. Black C.L., Ocaña-Mayorga S., Riner D.K., **Costales J.A.**, Lascano M.S., Arcos-Terán L., Preisser J.S., Seed J.R., Grijalva M.J. 2009. Seroprevalence of *Trypanosoma cruzi* in rural Ecuador and clustering of seropositivity within households. American Journal of Tropical Medicine and Hygiene. 81:1035-40.
4. **Costales, J.A.**, Daily, J.P., Burleigh, B.A. 2009. *Trypanosoma cruzi*-induced cell cycle block revealed by comparative mRNA profiling in infected host cells. BMC Genomics. 10: 252.
5. Mott A., Lenormand G., **Costales J.A.**, Fredberg J.J., Burleigh B.A. 2009. Modulation of host cell mechanics by *Trypanosoma cruzi*. Journal of Cell Physiology, 218: 315-322.
6. **Costales, J.A.** and Rowland. 2007. A role for protease activity and host cell permeability during the process of *Trypanosoma cruzi* egress from infected cells. Journal of Parasitology. 93: 1350-1359.
7. Carla L. Black, Sofia Ocaña, Diana Riner, **Jaime A. Costales**, Mauricio S. Lascano, Santiago Davila, Laura Arcos-Teran, J. Richard Seed, and Mario J. Grijalva. 2006. Household Risk Factors For *Trypanosoma cruzi* Seropositivity in Two Geographic Regions of Ecuador. Journal of Parasitology. 93:12-16.
8. **Costales, J.A.** and Rowland, E.C. 2005. Human chagasic serum contains antibodies capable of inhibiting *Trypanosoma cruzi* egress from infected cells. Journal of Parasitology, 91:950-953.
9. Grijalva, M.J., Palomeque-Rodriguez, F.S., **Costales J.A.**, Davila, S., Arcos-Teran, L. 2005. High household infestation rates by synanthropic vectors of Chagas disease in southern Ecuador. Journal of Entomology, 42: 68-74.
10. Grijalva, M.J. Escalante, L., Paredes, R.A., **Costales, J.A.**, Padilla, A., Rowland, E.C. Aguilar, H.M. and Racines, J. 2003. Seroprevalence and risk factors for *Trypanosoma cruzi* infection in the amazon region of Ecuador. American Journal of Tropical Medicine and Hygiene, 69: 380-385.

PRESENTATIONS AT MEETINGS

1. **Costales, J.A.** 2010. Strengthening the research capacity in Ecuador through the study of Chagas disease and the biology of *Trypanosoma cruzi*. Young Researcher Symposium, Academy of Sciences of the Developing World (TWAS), Rio de Janeiro, Brazil.
2. **Costales, J.A.** and Burleigh, B.A. 2006. Type I interferon response in *T. cruzi* infection. Host cell response to protozoan invasion workshop. Eleventh International Congress of Parasitology, Glasgow, Scotland.
3. **Costales, J.A.** and Rowland, E.C. 2004. The target for anti-egressin may

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- be a cell surface protein complex which contains alpha-1-antitrypsin. Meeting of the Southeastern Society of Parasitologists, Pigeon Forge, TN, U.S.A.
4. **Costales, J.A.** and Rowland, E.C. 2003. Serum from Chagas positive patient inhibits the release of *Trypanosoma cruzi* from tissue culture cells. Meeting of the American Society of Parasitologists, Halifax, Nova Scotia, Canada.
 5. **Costales, J.A.** and Rowland, E.C. 2002. Identification of the target for anti-egressin antibodies. 29th Fancy Gap Immunoparasitology Workshop, Fancy Gap, VA, USA.
 6. Moore-Lai, D., Rowland, E. C., **Costales, J.A.** 2001. Antibodies produced by *Trypanosoma cruzi* chronically infected mice bind a 98 KDa component of the host cell membrane. 28th Fancy Gap Immunoparasitology Workshop, 2001. Fancy Gap, VA, USA.
 7. **Costales, J.A.** 1999. Cross reactivity of *Trypanosoma cruzi* epimastigote antigen with antibodies present in serum of leishmaniasis and cysticercosis affected patients. 26th Fancy Gap Immunoparasitology Workshop, Fancy Gap, VA, USA.

POSTER PRESENTATIONS

1. **Costales, J.A.**, García, J.E., Grijalva, M.J. 2010. Undetected cases of chronic Chagas disease are common in cardiac wards of public hospitals of Ecuador. 59th Meeting of the American Society of Tropical Medicine and Hygiene, Atlanta, GA, USA.
2. **Costales, J.A.** and Burleigh, B.A. 2006. Modulation of the host cell transcription by *Trypanosoma cruzi* intracellular infection. Gordon Research Conference in the Biology of Parasite-Host interaction, Newport, RI, U.S.A.
3. **Costales, J.** and Burleigh, B. 2005. Global analysis of host gene transcription induced by *Trypanosoma cruzi* infection. Sixteenth Molecular Parasitology Meeting, Woods Hole, MA, U.S.A.
4. **Costales, J.A.** and Rowland, E.C. 2004. Antibodies present in Chagas positive human sera inhibit the egress of *Trypanosoma cruzi* from infected cells. 14th Molecular Parasitology and Vector Biology Symposium, Center for Tropical and Emerging Global Diseases, University of Georgia, Athens, GA, U.S.A.
5. **Costales, J.A.** and Rowland, E.C. 2003. Antibodies present in Chagas positive human serum inhibit the egress of *Trypanosoma cruzi* from tissue culture cells. 52nd Annual Meeting of the American Society of Tropical Medicine and Hygiene, Philadelphia, PA, U.S.A.
6. Racines, J.R., Escalante, L., Aguilar, M.H., **Costales, J.A.**, Paredes, R.A., Sanchez, M. Rowland, E.C., Grijalva, M.J. 1999. Chagas' disease in Ecuador: seroprevalence in endemic areas and blood banks. 48th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Washington, DC, U.S.A.

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LANGUAGES

Spanish (native speaker), English (written and oral), Kichwa (30%).

ADDITIONAL TRAINING

- 2009 The Fundamentals of International Clinical research Workshop. Cape Town, South Africa. Training provided by the International Clinical Sciences Support Center.
- 2009 Effective project planning and evaluation in biomedical research. Cali, Colombia. Training provided by Centro Internacional de Entrenamiento e Investigaciones Médicas (CIDEIM)
- 2010 Scientific paper Writing Workshop. Quito, Ecuador. Provided by the International Clinical Sciences Support Center.