

Curriculum Vitae

I. Personal Data, Professional and Research Experience.

Name: Audry Fernández Gómez
Nationality: Cuban
Official Languages: Spanish
Other Languages: English
Academic Address: Centro Interdisciplinario de Neurociencia (CINV)
Gran Bretaña 1111. Playa Ancha, Valparaíso-Chile.
Phone Number: (56)-(32)-2508088
Electronic mail: audry.fernandez@cinv.cl

Education:

2004: Bachelor in Sciences in Biochemistry (*summa cum laude*), Faculty of Biology, University of Havana.

2008: MSc degree in Biochemistry (mention: Immunology), University of Havana and Center of Molecular Immunology.

2014: PhD in Biological Sciences, University of Havana and Center of Molecular Immunology.

Professional History:

Sept/2004 – Jan/2010: Vaccine Division, Research and Development Department, Center of Molecular Immunology, Havana, Cuba.

Dec/2007 – Jul/2008: Myeloid-Derived Suppressor Cells group. Department of Oncology and Surgical Sciences, University of Padua, Italy.

Jan/2010 – Nov/2015: Immunobiology Direction, Research and Development Division, Center of Molecular Immunology, Cuba.

Sep/2013 – Nov/2013: Immunology Department, Roswell Park Cancer Institute, Buffalo, USA.

2016: Centro Interdisciplinario de Neurociencia de Valparaíso, Chile.

Areas of Research Experience:

- Cell culture.
- Flow Cytometry (FACS).
- Evaluation of antibody responses in the serum of vaccinated mice through ELISA.
- Detection of cytokines in culture supernatant through ELISA.
- Measurement of the frequency of cytokines-producing T cells by ELISPOT.
- Evaluation of cytokines and other molecules through intracellular staining and FACS.
- Detection of antigen-specific and mitogen-induced T cell proliferation by CFSE staining and FACS.
- Detection of antigen-specific and mitogen-induced T cell proliferation through T[³H] incorporation.
- Measurement of in vitro CTL responses by ⁵¹Cr release assay.
- Evaluation of in vivo CTL responses in mice.
- In vivo depletion of immune populations in mice.
- Isolation of CD4 T cells, CD8 T cells, Tregs, dendritic cells (DCs) and myeloid-derived suppressor cells (MDSCs) from lymphoid tissues with MACS technology.
- Isolation of tumor-infiltrating lymphocytes and MDSCs from tumor tissues in mice.
- Isolation of peripheral blood mononuclear cells (PBMC).
- In vitro differentiation of mouse DCs.
- In vitro differentiation of mouse MDSCs.
- Study of TLR agonists-induced maturation, cytokine production and T cell stimulatory properties of mouse and human DCs.
- Effect of cancer vaccines adjuvants on the suppressive function and differentiation status of mouse tumor-induced MDSCs in vitro and in vivo.
- Effect of cancer vaccines adjuvants on the cross-presentation of tumor-antigens by MDSCs and DCs in mice.
- Isolation and characterization of human myeloid-derived suppressor cells from cancer patients.
- Adoptive transference of T cells and MDSCs in mice.
- Study of the antitumor effect of different vaccine candidates in mice.
- Evaluation of the role of GM3 ganglioside in the biology of mouse tumors and the down-regulation of CD4 expression on T cells.
- Study of the immune response in mice with chemotherapy-induced leukopenia.
- Molecular biology techniques (recombinant proteins production, anti-sense RNA gene silencing, real time PCR).

II. Publications.

1. de Leon J, **Fernandez A**, Mesa C, Clavel M, Fernandez LE. Role of tumour-associated N-glycolylated variant of GM3 ganglioside in cancer progression: effect over CD4 expression on T cells. *Cancer Immunology and Immunotherapy*. **2006**; 55:443-50.
2. De León J, **Fernández A**, Clavell M, Labrada M, Bebelagua Y, Mesa C, Fernández LE. Differential influence of the tumour-specific nonhuman sialic acid containing GM3 ganglioside on CD4⁺CD25⁻ effector and naturally occurring CD4⁺CD25⁺ regulatory T cells function. *International Immunology*. **2008**; 20:591-600.
3. Mazorra Z, Mesa C, **Fernández A**, Fernández LE. Immunization with a GM3 ganglioside nanoparticulated vaccine confers an effector CD8⁺ T cells-mediated protection against melanoma B16 challenge. *Cancer Immunology and Immunotherapy*. **2008**; 57:1771-80.
4. Dolcetti, L., E. Peranzoni, S. Ugel, I. Marigo, **A. Fernandez Gomez**, C. Mesa, M. Geilich, G. Winkels, E. Traggiai, A. Casati, F. Grassi, and V. Bronte. Hierarchy of immunosuppressive strength among myeloid-derived suppressor cell subsets is determined by GM-CSF. *European Journal of Immunology*. **2010**; 40:22-35.
5. Marigo I, Bosio E, Solito S, Mesa C, **Fernandez A**, Dolcetti L, Ugel S, Sonda N, Biccato S, Falisi E, Calabrese F, Basso G, Zanovello P, Cozzi E, Mandruzzato S, Bronte V. Tumor-induced tolerance and immune suppression depend on the C/EBPbeta transcription factor. *Immunity*. **2010**; 32:790-802.
6. **Fernández A**, Mesa C, Marigo I, Dolcetti L, Clavell M, Oliver L, Fernández LE, Bronte V. Inhibition of tumor-induced myeloid-derived suppressor cell function by a nanoparticulated adjuvant. *Journal of Immunology*. **2011**; 186:264-274.
7. Oliver L, **Fernández A**, Raymond J, López-Requena A, Fernández LE, Mesa C. Very small size proteoliposomes derived from Neisseria meningitidis: an effective adjuvant for antigen-specific cytotoxic T lymphocyte response stimulation under leukopenic conditions. *Vaccine*. **2012**; 30:2963-2972.
8. **Fernández A**, Oliver L, Alvarez R, Hernández A, Raymond J, Fernández LE, Mesa C. Very Small Size Proteoliposomes abrogate cross-presentation of tumor antigens by myeloid-derived suppressor cells and induce their differentiation to dendritic cells. *Journal for ImmunoTherapy of Cancer*. **2014**; 2:5.
9. **Fernández A**, Oliver L, Alvarez R, Fernández LE, Mesa C. GM3-containing nanoparticles in immunosuppressed hosts: Effect on myeloid-derived suppressor cells. Review. *World Journal of Immunology*. **2014**; 4:98.
10. **Fernández A**, Oliver L, Alvarez R, Fernández LE, Lee KP, Mesa C. Adjuvants and myeloid-derived suppressor cells: Enemies or allies in therapeutic cancer vaccination. Review. *Human Vaccines and Immunotherapeutics*. **2014**; 10: 3251-3260.

III. Scientific Events.

1. 2nd International conference on Crossroads between Innate and Adaptive Immunity. Crete, Greece, Jun-2007. Co-author, oral presentation.
2. Keystone Symposia on Molecular and Cellular Biology. Alberta, Canada, March-2007. Co-author, poster.
3. Report Meeting of the research sponsored by Italian Foundation of Multiple Sclerosis. Rome, Italy, May 2008. Co-author, poster.
4. IT2008: Implementing combinations. Havana, Cuba, November 2008. Author, poster.
5. VacciPharma 2009. 1st International Congress on Pharmacology of Vaccines. Varadero, Cuba, May 2009. Author, poster.
6. 7th International Congress on Chemistry and Chemical Engineering. Havana, Cuba, October 2009. Author, poster.
7. ImmunoChile 2009. 9th Latin American Congress of Immunology. Viña del Mar, Chile, November 2009. Author, poster.
8. ImmunoChile 2009. 9th Latin American Congress of Immunology. Viña del Mar, Chile, November 2009. Co-author, oral presentation.
9. IT2010: Rupture and restoration of self tolerance. Havana, Cuba, November 2010. Author, oral presentation and poster.
10. VacciPharma 2012. 2nd International Congress on Pharmacology of Vaccines. Cayo Santa María, Cuba, June 2012. Author, poster.
11. IT2012: Therapeutic Manipulation of Inflammatory Microenvironment. Havana, Cuba, November 2012. Author, poster and co-author, oral presentation.
12. IT2014: Chronic Inflammation in Cancer and Autoimmunity: Revisiting the Links. Havana, Cuba, November 2014. Author, oral presentation and poster.
13. First International Convention ImmunoPharmacology-VaccPharma 2015. Varadero, Cuba, June 2015. Author, oral presentation.

IV. Teaching Experience.

- Basic Immunology course (2009): Center of Molecular Immunology, Havana, Cuba
- Immune System Regulation post-graduate courses (2012 and 2015): Faculty of Biology, Havana University, Cuba.
- Advance Immunology post-graduate courses (2012 and 2014): Center of Molecular Immunology and Faculty of Biology, Havana University, Cuba.
- Iberoamerican Course: Topics of interest for Immunotherapy and Vaccinology (2013): Faculty of Biology, Havana University, Cuba.

V. Scientific membership.

Cuban Society of Immunology (2005-present).

Cuban Society of Pharmacology (2014-present).

VI. Patents.

Fernández LE, Garrido G, Pérez R, Sánchez B, **Fernández A**, López-Requena A, Beausoleil D. Therapeutic combination to potentiate the effect of antibody-based therapy against EGF receptor. WO/2008/037225 A1.

VII. Awards.

- Annual Award of Cuban Academy of Sciences to Scientific Research (2007): “N-glycosylated variant of GM3 ganglioside in tumor biology: a promising target for cancer immunotherapy”. De León J., **Fernández A.**, Mesa C., Clavell M., Fernández LE.
- Annual Award of Cuban Academy of Sciences to Scientific Research (2008): “GM3 ganglioside as a target for melanoma therapy”. Mazorra Z., Fernández LE., Mesa C., **Fernández A.**, López A., González J., Ripio GV., Gómez DE., Alonso DF.
- Annual Award of Cuban Academy of Sciences to Scientific Research (2014): “Inhibition of tumor-induced myeloid-derived suppressor cells by very small size proteoliposomes”. **Fernández A.**, Mesa C., Fernández LE., Oliver L.