



LINES OF RESEARCH

Dr. Leopoldo Santos Argumedo: Mechanisms of activation, maturation, and differentiation of B lymphocytes in humans and mice. Study of the function of class I myosins in immune response cells. Analysis of defective molecular mechanisms in human primary immunodeficiencies. Characterization of IgA and the microbiome in human colostrum.

Dra. Rebeca Georgina Manning Cela: Study of parasite and host cell molecules important for the process of infection and differentiation of *Trypanosoma cruzi*. Isolation, characterization and omics of *T. cruzi* strains isolated in Mexico.

Dra. Isaura Meza Gómez-Palacio: Mechanisms induced by inflammatory cytokines in breast cancer metastasis. Processes induced by mixed infections, parasites (*Entamoeba histolytica*) and bacteria.

Dra. Rosaura Hernández Rivas: Epigenetic mechanisms (post-translational modifications of histones, long non-coding RNA nuclear architecture and remodeling complexes) that regulate the expression of genes in *Plasmodium falciparum*. Role of post-translational modifications of histones in the encystment of *Entamoeba invadens*. Identification of epigenetic bio-markers for the diagnosis of pancreatic cancer

Dra. Ma. Teresa Estrada García: Molecular epidemiology of diarrheal and chronic diseases, as well as intestinal immune response. Microbiome of infectious diseases and massive sequencing of clinical isolates.

Dr. Nicolás Villegas Sepúlveda: Tumor heterogeneity and resistance to apoptosis in cervical carcinoma. Mechanisms of alternative splicing in papillomavirus type 16. Search for markers of resistance to apoptosis in cervical carcinoma.

Dra. Leticia Cedillo Barrón: Study of the participation of resident skin cells in Innate immunity against Dengue virus. Role of dengue virus proteins in the mechanisms of evasion of the innate immune response and its participation in Immunopathogenesis. Evaluation of immunity targets and design of vaccine candidates and diagnosis against arbovirus infections.

Dra. Ma. Carmen Sánchez Torres: Functional characterization of different subpopulations of dendritic cells and macrophages derived from human monocytes. Generation of tolerance in memory lymphocytes by tolerogenic dendritic cells in diabetic patients and pre-diabetic relatives. Relation of macrophage subtypes with tumor progression. Transcription factors associated with the polarization of macrophages. The polarization of macrophages and the response to oxidized lipids: inflammation and atherosclerosis.

Dr. Vianney Fco. Ortiz Navarrete: Characterization of the innate and acquired immune response of B lymphocytes infected by Salmonella. Processing of antigen involved in the presentation of exogenous antigens by class I molecules of the major histocompatibility complex (MHC-I). Characterization of the function of the CD355 molecule during the T lymphocyte ontogenesis and during the effector phase of CD8 and NKT T lymphocytes

Dr. Marco Antonio Meraz Ríos: Study of the molecular mechanisms involved in the genesis of Alzheimer's disease. Mechanisms that govern the process of neuronal differentiation in brain microenvironments. Development of cellular and animal models for the study of Alzheimer's disease. Generation of pluripotent embryonic and mesenchymal stem cells for the development of new diagnostic strategies, cell and gene therapy.

Dr. Miguel Ángel Vargas Mejía. Evaluation of the antineoplastic properties of new pharmacological alternatives against cancer-dependent K-Ras oncogenic. Molecular and cellular study of the participation of negative and positive regulatory molecules for GTPases of the Rho family in the virulence *E. histolytica*.

Dr. Michael Schnoor : To analyze the role of actin regulatory proteins in the control of endothelial and epithelial barriers and the extravasation of leukocytes by intravital microscopy in experimental models of inflammatory diseases with sepsis, colitis and leukemia in vivo and in vitro.