



Area of Impact: Health
Specialty: Immune System

The Millennium Institute of Immunology and Immunotherapy (IMII) is a center of scientific excellence housed at the Pontifical Catholic University of Chile, the University of Chile and the University of Andrés Bello. The mission of IMII is the integrated study of the immune system with the idea of translating it into new knowledge of high impact, which can be transferred to therapies, vaccines and diagnosis methods for diseases with an immunological component that affect human population such as: infectious illnesses, cancer, and autoimmune and endocrine disorders.

Some advances developed in this Millennium Center include a vaccine against the Respiratory Syncytial Virus and a personalized therapy against prostate and ovarian cancer, and melanoma (called TapCells). Both innovations have received their patent in several countries and can be found in different stages of clinical evaluation in humans. Also, with IMII support, vaccines have been produced against human metapneumovirus and herpes simplex virus, as well as diagnosis methods for viruses that include inflammatory markers, which can help predict the severity of an infectious sickness. Basic and clinical researchers of the IMII have also developed investigation lines in areas such as arterial hypertension and hormonal disorders, identifying new immune risk factors for these pathologies, which affect more than a third of the Chilean population.

Alongside work in biomedicine, the IMII invest considerable efforts into training advanced human capital, the development of transference technology, the generation of collaborative networks, and the dissemination of scientific findings towards society. In January 2016, the Federation of Clinical Immunology Societies in the United States recognized IMII as an International Scientific Excellence Center, being the first scientific center of the Southern Cone to receive this honor.

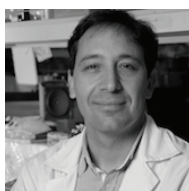


MAIN ACHIEVEMENTS

- Scientists of the Millennium Institute of Immunology and Immunotherapy developed the first vaccine against the Respiratory Syncytial Virus, which was patented in China, the United States, and Europe and published in high impact journals.
- Creation of a personalized immunotherapy to treat aggressive cancer, like melanoma. Clinical trials in phase I and II.
- Creation of a test that detects the origin of hypertension through a blood test that checks the levels of hormones related to this illness.
- Development of therapies for autoimmune disorders such as lupus, multiple sclerosis, arthritis, and Type-I diabetes.
- Identification of inflammatory markers that can determine the severity of an infection caused by respiratory pathogens.

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RESEARCH TOPICS

- Microbial infections.
- Cancer.
- Autoimmunity.
- Inflammatory and endocrine illnesses.

NOTED OUTREACH ACTIVITIES

- Development of texts to support the work of schoolteachers "Hipertensión arterial y salud" and "Microorganismos y enfermedades" ("Blood Pressure and Health" and "Microorganisms and Diseases"), including explanatory material supplemented with illustrations, experiments and proposed activities for classes.
- Development of national school video competition, "Inmunología al Instante! Noticioso" ("Immunology this Instant! Newsworthy"), interactive activities with the business sector (Inmunoinversión), scientific film series for adults and children, broadcasting, school talks, etc.
- "Contagia Ciencia" (2016): "Spread Science" is a "city intervention" with a virus-shaped dome. In it, brochures will be delivered and virology will be promoted with the participation of schools and a laboratory technique workshop. The activity will be carried out in the Valparaíso, Metropolitana, del Bio-Bio and de los Ríos regions.
- "Ejército de Defensas del Cuerpo Humano" (2016): "Army of Defenses of the Human Body", a book about immunology developed in conjunction with the Chilean Navy. The ebook version will be available online to download and in social networking pages (Facebook fanpage).
- "Laboratorios portátiles" (2016): "Portable laboratories," training of secondary science teachers with hands-on projects of molecular biology. Practical lab sessions of molecular biology will be held in schools in the Los Lagos region. Also, there will be work with an online virtual laboratory.
- "Ciclo de Cine-Foro Científico C3-IM3": (2015-2016): ("Scientific Cinema-Forum Cycle C3-IM3") an event that took place in Santiago and other regions exhibiting films with scientific content, discussed afterwards by the audience and IMII professionals.

 **PRODUCTIVITY PUBLICATIONS (BETWEEN 2011-2015)**
PUBLICATIONS: 244 | PATENT REQUESTS: 63

 **ACTIVE MILLENNIUM INSTITUTE From 2011 to 2021**
The Millennium Institutes have a duration of 10 years, subject to an evaluation halfway through the period.

 **PRESENCE METROPOLITANA REGION**



HOST INSTITUTIONS:

