Prof. Dr. Carlos A. Guzmán, MD PhD
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Birth: February 27th, 1959; Rosario (Argentina)
Nationalities: Italian, Argentinean
Languages: Spanish, Italian, English, German, French (basic)

Education

2012	Seminar for Executives from the Business School and Management Academy St Gallen
2011	Helmholtz Academy - Training for Managing Scientists & Executives. Module "Efficient Management"
2010	Helmholtz Academy - Training for Managing Scientists & Executives. Module "Organization of an Enterprise"
2000	Habilitation, Medical Microbiology, Hannover Medical School, Hannover, Germany
1995	Fortbildung gem. §15 Abs. 2 Satz 1 Nr. 3 Gentechnik-Sicherheitsverordnung (GENTSV)
1993	PhD in Microbiological Sciences, University Genoa, Italy
1989	Qualifying Medical Graduates Examination, School of Medicine & Surgery, Univ. of Genoa, Italy
1988	MD in Medicine and Surgery, University of Genoa, Italy
1986	Board Certification in Medical Bacteriology, College of Physicians State of Santa Fe, Argentina
1981	Diploma with honors in Medicine (top of the class), National University of Rosario, Argentina

Positions/Appointments held

2019	Selected as Head of Research, Vaccine & Infectious Disease Organization-InterVac - Declined
2013-2020	Speaker of Topic 2 "Immune Response and Interventions" at HZI
2008-present	Head of the Dept. Vaccinology and Applied Microbiology at HZI, Braunschweig, Germany
2008-2012	External Lecturer Doctorate in Biotechnology, University of Catania, Italy
2007-2020	Member of the Steering Committee (Lenkungsausschuss) of the HZI, Braunschweig
2007-2008	Acting Head, Division of Microbiology of the HZI, Braunschweig
2007	Selected as Director "Instituto de Tecnologia Quimica e Biologica", Lisbon, Portugal - Declined
2005-present	Honorary APL-Professor at Hannover Medical School, Hannover, Germany
2005-2007	Head of the Department of Vaccinology and Applied Microbiology at HZI, Braunschweig
2003-2012	Speaker Topic "Prevention and therapy", Helmholtz Association
2003-2007	German Coordinator and Member of the Board for the International Doctorate in "Experimental Oncology" University of Ferrara, Italy
2000 - 2004	Privatdozent, Department of Medical Microbiology and Hospital Epidemiology, Medical School Hanover, Hanover – Germany
1994-2005	Head of the Vaccine Research Group at the GBF (now HZI), Braunschweig, Germany
1993-1994	Head of the Bordetella Research Laboratory at the GBF, Braunschweig, Germany
1991-1993	Research Scientist, Institute of Microbiology, University of Genoa, Italy
1989-1991	Research Fellow, Division of Microbiology at the GBF, Braunschweig, Germany
1986-1989	Research Fellow, Institute of Microbiology, University of Genoa, Italy
1983	Military service as Medical Lieutenant (Head of the Sanitary Services of the Agrupación de Comunicaciones y Operaciones Electrónicas 601), City Bell - Argentina
1982-1986	Instructor of Medical Microbiology, School of Medicine, University of Rosario, Argentina

Current editorial boards

Bioengineered, Frontiers Microbial Immunology, Frontiers in Mucosal Immunology, Frontiers in Vaccines and Molecular Therapeutics, Pharmaceutics, Vaccine, and Vaccines

Selected honors, boards and activities

2021-2022	Member review panel Novo Nordisk Foundation "Immunity at Mucosal Surfaces Challenge Program"
2020	Member WHO Expert Group on COVID-19 Animal Model
2015-2023	Member Centre for Individualized Infection Medicine, Hannover
2013-2021	Science Coordinator, Helmholtz-Alberta Initiative – Infectious Disease Research
2013-2016	HZI Coordinator, Helmholtz Cross Program "Metabolic Dysfunction and Human Disease"
2009-2012	Chair "Vaccines & Antiinfectives" Indo-German Science Centre for Infect. Diseases
2007-2012	Chair "Vaccines" European Infrastructure for Translational Medicine (EATRIS)
1989-1991	Fellow European Communities Commission
1986-1988	Fellowship from Italian Foreign Ministry - University Genoa
1982	Fellow Council of Deans of National Universities, School of Biochemistry and Pharmacy, University of Buenos Aires, Buenos Aires – Argentina

Fields of interest

My work is focused in the field of Vaccinology, with the specific goal of establishing tools & strategies to prevent and treat infectious diseases. This major aim is achieved by pursuing the following specific objectives: (i) understand the underlying mechanisms of host response to vaccination, (ii) develop new adjuvants, including compounds acting by mucosal route and in poor responders, such as the elderly, (iii) generate delivery systems for antigens & nucleic acids, and (iv) develop and test vaccine candidates against specific diseases.

Home page: https://www.helmholtz-hzi.de/en/research/research-topics/immune-response/vaccinology-and-applied-microbiology/our-research/

Ten selected publications (out of >300, HI 61)

Sanchez MV, Ebensen T, Schulze K, Cargnelutti DE, Scodeller EA and **Guzmán CA** (2023). Protective efficacy of a mucosal influenza vaccine formulation based on the recombinant nucleoprotein co-administered with a TLR2/6 agonist BPPcysMPEG. **Pharmaceutics** 15(3):912.

Riese P, Trittel S, Akmatov MK, May M, Prokein J, Illig T, Schindler C, Sawitzki B, Elfaki Y, Floess S, Huehn J, Błażejewski AJ, Strowig T, Hernandez-Vargas EA, Geffers R, Zhang B, LiY, Pessler F and Guzmán CA (2022). Distinct immunological and molecular signatures underpinning influenza vaccine responsiveness in the elderly. **Nature Communications** 13(1):6894.

Lirussi D, Weissmann SF, Ebensen T, Nitsche-Gloy U, Franz HBG, **Guzmán CA.** (2021) Cyclic di-adenosine monophosphate: A promising adjuvant candidate for the development of neonatal vaccines. **Pharmaceutics** 13(2):188.

Riese P, Trittel S, Pathirana RD, Klawonn F, Cox RJ, **Guzmán CA** (2020) Responsiveness to influenza vaccination correlates with NKG2C-expression on NK cells. **Vaccines** 8:281.

Trittel S, Vashist N, Ebensen T, Chambers BJ, **Guzmán CA***, Riese P* (2019) *Invariant NKT cell-mediated modulation of ILC1s as a tool for mucosal immune intervention*. **Frontiers in Immunology** 10:1849. * Equal contribution.

Ebensen T, Debarry J, Pedersen GK, Blazejewska P, Weissmann S, Schulze K, McCullough KC, Cox RJ, **Guzmán CA** (2017) Mucosal administration of cycle-di-nucleotide-adjuvanted virosomes efficiently induces protection against influenza H5N1 in Mice. **Frontiers in Immunology** 8:1223.

Schulze K, Ebensen T, Babiuk LA, Gerdts V, **Guzman CA** (2017) *Intranasal vaccination with an adjuvanted polyphosphazenes nanoparticle-based vaccine formulation stimulates protective immune responses in mice*. **Nanomedicine** 13:2169.

Rueckert C, Rand U, Roy U, Kasmapour B, Strowig T, **Guzmán CA** (2017) *Cyclic dinucleotides modulate induced type I IFN responses in innate immune cells by degradation of STING*. **FASEB Journal** 31:3107.

Lirussi D, Ebensen T, Schulze K, Trittel S, Duran V, Liebich I, Kalinke U, **Guzmán CA** (2017) *Type I IFN and not TNF, is essential for cyclic di-nucleotide-elicited CTL by a cytosolic cross-presentation p*athway. **EBioMedicine** 22:100.

Royo JL, Becker PD, Camacho EM, Cebolla A, Link C, Santero E, **Guzmán CA** (2007) *In vivo gene regulation in Salmonella spp. by a salicylate-dependent control circuit.* **Nature Methods** 4: 937.

Recent patents (out of >20)

2018 Pessler F., **Guzman C.A.**, Riese P., Akmatov M. Biomarker zur Vorhersage einer unzureichenden Immunantwort auf Grippeimpfung. EP 18 162 800.9

2019 **Guzman C.A.**, Lirussi D., Ebensen T., Weissmann S. New use of cyclic dinucleotides EP19193982

2021 Klos A., Laudeley R., Hegemann J.H., Wintgens S., Ebesen T., **Guzman C.A**. c-di-AMP-adjuvanted multi-subunit vaccine against Chlamydia trachomatis - EP2115349.

2021 Mendez-Gomez Y., Westermann B., Garcia-Rivera D., Vasco-Vidal A., Wessjohann L., **Guzman C.A.**, Ebensen T., Schulze K., Riese P., Trittel S. Phytosphingosine derivatives as adjuvants in immune stimulation. PCT/EP2021/0667

2023 Aguilar Rubido J.C., **Guzman C.A.**, Freyre Almeida F. M., Guillen Nieto G.E., Ebensen T., Riese P., Schulze K., Trittel S. Biological response modifiers for the treatment of subject with underperforming immune systems and compositions thereof. EP23164382.6

2024 Protzer U., Kosinska A., Su J., Thiele F., Wiegand M., Guzman C.A., Ebensen T. HBV antigen formulation for treating Hepatitis B. EP 24157377.3

Ongoing third party-funded projects

Project title	Funding Agency	Period
European Network of Vaccine Research & Development 2 – TRANSVAC2	EC	2017–2023
Rational design of a universal flu vaccine using recombinant neuraminidase	Gates Foundation	2019-2023
Transforming big data into knowledge: for deep immunoprofiling in vaccination, infectious diseases, and transplantation (ImProVIT)	Volkswagen Foundation	2019-2023
Vaccine for prevention and treatment of *Trypanosoma cruzi* infection (CRUZIVAX)	EC *Coordinator*	2019-2025
Hochdurchsatzfähige Multiplex Bead Assays für den simultanen Nachweis von Virus-Antikörper Spezifität und Zytokinen in biologischen Proben (VirAn)	BMBF	2020-2023
Paving the way towards individualized vaccination (i.Vacc)	Volkswagen Foundation	2020-2024
Indo-European Consortium for Next Generation Influenza Vaccine Innovation (INCENTIVE)	EC *Coordinator*	2020-2025
A Therapeutic Vaccine to Cure Hepatitis B (TherVacB)	EC	2020-2024
Integrated Services for Infectious Disease Outbreak Research (ISIDORe)	EC	2022-2025
Mobility project for German-Cuban cooperation: Evaluation of vaccine boosters for therapeutic vaccinations (Adaptinnate)	BMBF	2023-2025
Next generation vaccines against gastrointestinal mucosal pathogens, using *Helicobacter pylori* as model pathogen (VAX2MUC)	EC	2023-2028