

Hugo Leonid Gallardo-Blanco, Ph.D. | Oncology Service One-Pager

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Oncology Service — Centro Universitario Contra el Cáncer (CUCC)

School of Medicine & University Hospital "Dr. José Eleuterio González" — UANL, Monterrey, Mexico

Lead: Dr. Hugo Leonid Gallardo-Blanco

Focus: Targeted nanomedicine & oncogenic protein interference (HER2+ breast cancer; Myc/Max programs)

Credentials

- **SNII Level I** (appointments across 2016–2027) — SECIHTI (formerly CONAHCYT/CONACYT)
- **PRODEP Desirable Profile** (2019–2028)
- **Cuerpo Académico:** CA Oncología (UANL-CA-446) — Consolidated, PRODEP (2025–2030)
- **Scopus** (Author ID 55939011000): 31 documents, 318 citations, h-index 11 | **Google Scholar:** 500 citations, h-index 13, i10-index 19 (*both as of July 2026*)
- **Patent:** PCT application in progress (targeted nanosystems)

Research Rationale

The Oncology Service develops targeted nanomedicine and molecular inhibition strategies to address key bottlenecks in cancer biology: intracellular access, mechanistic specificity, and translational interpretability. We integrate functional biomaterials, delivery engineering, and pathway-level readouts to design interventions that can be tested rigorously in cell models and aligned with clinically meaningful phenotypes.

Two Anchoring Programs

- **HER2+ breast cancer:** aptamer-guided AuNP and polymeric NP platforms for selective delivery of mRNAs, miRNAs, and antimiRNAs. Cell models: HCC1954, ZR-75-30.
- **Myc/Max programs:** peptide-functionalized AuNPs (pMyc/pMax from bHLH-LZ domains) for competitive blockade of oncogenic transcriptional circuitry. Cell model: DU145.

Collaboration Formats (High-Impact)

- **Mechanism-first validation:** specialized assays/imaging/omics + construct co-design + testable mechanistic endpoints.
- **Targeted delivery + functional readouts:** uptake/trafficking linked to pathway response after intervention.
- **Translational framing:** connect molecular effects to tumor-relevant phenotypes or clinically anchored datasets.
- **Manuscripts & grant-ready modules:** workstreams that map cleanly onto Specific Aims.

What We Can Contribute Quickly

- Aim-structured study logic connecting construct design → mechanism → measurable outcomes.
- Mechanistic figure concepts and collaboration-ready drafts (rationale + endpoint strategy).
- Rigorous interpretation for cell-based evaluation of functional biomaterials/inhibitory constructs.
- Pathway-level prioritization to reduce experimental uncertainty.

Selected Publications

1. **Gallardo-Blanco HL.** (2026) Post-GWAS functional annotation of the RPTOR locus identifies rs12950541 as a candidate regulatory variant for type 2 diabetes and metabolic traits. *bioRxiv* (preprint). DOI: 10.64898/2026.04.26.720864
2. Garza-Rodríguez ML, Vargas-Márquez EAA, Aguilar D, Trujillo-Bornios S, **Gallardo-Blanco HL**, Vidal-Gutiérrez O, Pérez-Ibave DC, Burciaga-Flores CH. (2026) Possible founder effect of the CDKN2A c.146T>C variant in the Mexican population: phenotypic characterization. *Genes* 17(5):532. DOI: 10.3390/genes17050532
3. **Gallardo-Blanco HL**, Garza-Rodríguez ML, Pérez-Ibave DC, et al. (2025) Genetic insights into breast cancer in Northeastern Mexico: unveiling gene–environment interactions and their links to obesity and metabolic diseases. *Cancers* 17(6):982. DOI: 10.3390/cancers17060982
4. Herrera-Alonso AE, Rodríguez-Chávez DF, Toxqui-Terán A, et al., **Gallardo-Blanco HL**, Sánchez-Domínguez CN, Sánchez-Domínguez M. (2025) pH-sensitive chitosan-based hydrogels trap poloxamer micelles as a dual-encapsulating responsive system for the loading and delivery of curcumin. *Polymers* 17(10):1335. DOI: 10.3390/polym17101335
5. Herrera-Alonso AE, Longoria-García S, **Gallardo-Blanco HL**, Sánchez-Domínguez CN, Sánchez-Domínguez M. (2025) Development of a chitosan–poloxamer 407 copolymer as a curcumin carrier system. *Springer Proc. Mater.* DOI: 10.1007/978-3-031-99987-1_25
6. Rodríguez-Chávez DF, Sánchez-Domínguez CN, **Gallardo-Blanco HL**, Sánchez-Domínguez M. (2025) Mixed poloxamer–TPGS micelles: an innovative strategy for encapsulation of liposoluble drugs. *Springer Proc. Mater.* DOI: 10.1007/978-3-031-99987-1_2
7. Martínez-Saráo JV, Longoria-García S, **Gallardo-Blanco HL**, Sánchez-Domínguez CN, Sánchez-Domínguez M. (2025) Impact of methodological variations on MTT assay for gold nanoparticle toxicity evaluation. *Springer Proc. Mater.* DOI: 10.1007/978-3-031-99987-1_1

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Educational software (open access): Gallardo BioTools — gallardo-lab.github.io/gallardo-biotools • Zenodo DOI: 10.5281/zenodo.20723202 • Bibliometrics as of July 2026. Last updated: 30 July 2026.