2nd GLOBAL CONFERENCE ON REPRODUCTION, FERTILITY AND GYNECOLOGY

April 29-30, 2025 | VIENNA, AUSTRIA

Ana Alfano[1], Eduardo GA Cafferata[1], Mariela Gangemi[1], Alejandro N Candia[1], Cecilia Rotondaro[1], Nicasio Cuneo[3], Mauricio Vargas Lopez[1], David T Curiel[4] Osvaldo L Podhajcer[1], and **Maria Veronica Lopez[1]**

[1]Laboratory of Molecular and Cellular Therapy, Instituto Leloir, IIBBA-CONICET, Avenida Patricias Argentinas 435, C1405BWE, Ciudad Autónoma de Buenos Aires, Argentina

[2]Facultad de Ingeniería, Universidad Argentina de la Empresa. Lima 775, C1073AAO, Ciudad Autónoma de Buenos Aires, Argentina

[3]Hospital Municipal de Oncología Maria Curie. Servicio de Ginecología-Departamento de Cirugía. Avenida Patricias Argentinas 750, C1405BWE, Ciudad Autónoma de Buenos Aires, Argentina.

[4]Division of Cancer Biology, Department of Radiation Oncology, School of Medicine, Washington University in St. Louis, St. Louis, MO 63110, USA

Efficacy of a Tumor Microenvironment-Responsive Oncolytic Adenovirus in Various Gynecological Preclinical Cancer Models

Abstract:

More than one million women worldwide are diagnosed with gynecological cancer each year. Most cases are detected at a late stage, either due to a lack of symptoms, as seen in ovarian cancer, or limited access to primary prevention in low-resource countries, as in cervical cancer.

In this study, we further investigate AR2011, a stroma-targeted, tumor microenvironment-responsive oncolytic adenovirus (OAdV) driven by a triple-hybrid promoter. We demonstrate that AR2011 effectively replicates and induces lysis in fresh in vitro explants derived from human ovarian, uterine, and cervical cancers. Additionally, AR2011 significantly inhibits the in vitro growth of malignant ovarian cells obtained from human ascites fluid.

The virus also synergizes with cisplatin in vitro, even in ascites-derived cells from patients heavily pretreated with neoadjuvant chemotherapy. AR2011(h404), a dual transcriptionally targeted variant armed with hCD40L and h41BBL under the control of the hTERT promoter, exhibits strong efficacy in vivo in both subcutaneous and intraperitoneal models of human ovarian cancer in nude mice.

Preliminary studies in an immunocompetent murine tumor model further suggest that AR2011(m404), expressing murine cytokines, can induce an abscopal effect. These findings indicate that AR2011(h404) is a promising candidate for the treatment of intraperitoneally disseminated ovarian cancer.

doi.org/10.51219/URForum.2025.Maria-Veronica-Lopez

ISBN: 978-1-917892-03-2

Keywords: Adenovirus, Cancer, Stroma, Gynecological cancer, murine model

Biography:

Maria Verónica Lopez is a researcher at the Leloir Institute- CONICET in Argentina. She holds degrees in Biochemistry (1995) and Chemistry (1996) from the National University of La Plata, and completed her medical degree at the University of Buenos Aires (2012 -2016). Verónica earned her PhD from the National University of La Plata (1997-2001) and completed postdoctoral research (2002-2005) at the Leloir Institute under the mentorship of Dr. Podhajcer, as well as at the University of Alabama at Birmingham in Dr. David Curiel's laboratory, with support from a CONICET fellowship. For over 23 years, Verónica has focused on cancer gene therapy, specializing in oncolytic adenoviruses and CAR-T cell therapies.

doi.org/10.51219/URForum.2025.Maria-Veronica-Lopez

ISBN: 978-1-917892-03-2