Abstract

ONCODAILY MEDICAL JOURNAL

From Resistance to Sensitivity: Targeted Therapies Enhance Taxol Efficacy in Ovarian Cancer Cell Lines

Authors: Laurence Malsom[1],✉

Corresponding Author:
laurence.malsom@student.manchester.ac.uk

Affiliation: [1]School of Medical Sciences, University of Manchester, Manchester, United Kingdom

DOI:10.69690/ODMJ-018-0826-7924

2nd Annual National Undergraduate Oncology Conference Northwest (NUOC Northwest 2026)

Published: August 25, 2026

DOI:10.69690/ODMJ-018-0826-7924

Abstract

From Resistance to Sensitivity: Targeted Therapies Enhance Taxol Efficacy in Ovarian Cancer Cell Lines

Authors: Laurence Malsom[1],✉

Corresponding Author:
laurence.malsom@student.manchester.ac.uk

Affiliation: [1]School of Medical Sciences, University of Manchester, Manchester, United Kingdom

ABSTRACT

Introduction: Ovarian cancer is a cancer characterised by late presentation and high disease recurrence, with aggressive chemotherapy being the backbone of treatment. This in vitro study aims to explore the efficacy of Taxol, Palbociclib and Olaparib in the ovarian cancer cell lines OAW42, OVCAR3, OVCAR8 and COV362 to evaluate the potential use of combination therapies to optimise treatment outcomes.

Methodology: Immunofluorescent staining for common mutation markers of ovarian cancer was carried out and allowed the histological subtype of each cell line to be identified. Cells were then plated and dosed against each anti-cancer therapy. Absorbance assays of stained cells was then used to determine IC50 values of each drug on each cell line.

Results: The most exciting responses were to Palbociclib and Olaparib by OAW42 and OVCAR3, respectively. These drugs were then combined with Taxol and administered to both cell lines. Both OAW42 and OVCAR3 showed a reduction in the IC50 of Taxol compared to control, a percentage decrease of 99.1% and 99.91% respectively. Showing that added doses of targeted therapies can improve efficacy of Taxol, and in the case of OAW42 reduce the dose of Taxol by 1/16th to achieve a similar cytotoxic effect.

Conclusion: The response to each drug varied widely across cell lines, caused by the variation in mutations expressed by individual tumours. However, results for selected cell lines were promising and wider in vitro study of ovarian cancers cell lines is indicated to further assess susceptibility to targeted- and chemo-therapeutics.

License