Introduction: SKOV-3 ovarian cancer cell line expresses galectin-3 and is Paclitaxel (Pac.) resistant. Galectin-3 (Gal-3) a carbohydrate-binding protein which is involved in cancer cell growth, adhesion and invasion. The aim of present study is to assess combined cytotoxic effect of Pac and Pectasol (inhibitor of Gal-3) on SKOV-3 cell line.

Methods: Cells were treated with Pac (10, 50, 100, 250, 500 and 1000nM) and/or Pectasol (0.025, 0.05 and 0.1%) for 24 and 48 hours. Cell viability was determined by using MTT assay, apoptosis was revealed with caspase-3 colorimetric assay and cell cycle was analysed by flowcytometry method. For combination study 100 nM Pac and 0.1% Pectasol were used.

Results: Pectasol alone led to 19% decrease of cell survival regardless of its concentration. The maximum effect of Pac was observed at 1uM which showed 35% decreased cell survival. However when combined with Pectasol there was a significant reduced cell viability by 60% and 75% compared to control after 24h and 48h, respectively (P<0.001). Pectasol alone did not affect apoptosis but induced G1 arrest. Pac alone led to maximum 5% cells in subG1 after 48h. However combination of Pectasol and Pac showed significant increase of apoptotic cells (15% versus 1% in control 24h, P<0.05 and 35.67% versus 0.82% in control, P<0.001 after 24h and 48h, respectively) In parallel, caspase-3 activity was significantly increased by 1.9-fold and 3.8 fold compared to control (P<0.001).

Conclusion: Our results suggest that inhibition of Gal-3 could be a useful therapeutic tool for combination therapy in ovarian cancer.