RESEARCH REPORT - PROTEOMICS STUDY DECEMBER 2008

Ovarian cancer has a distinct predisposition to metastasize by the implantation of cells onto the mesothelium that lines the peritoneal cavity.

Once ovarian cancer cells adhere to those cells, they may migrate through the mesothelial layer and invade local organs. The local invasion of organs like the bowel eventually results in the death of the patient. It remains unclear which factors promote ovarian cancer metastasis and implantation.

This project funded by the OCRF at Adelaide University (Researchers: A/Prof Martin Oehler (Dept. of Gynaecological Oncology), Dr. Carmela Ricciardelli, Miranda Ween (Discipline of Obstetrics & Gynaecology) and Dr Peter Hoffmann (Proteomics Centre)) investigates the interaction between ovarian cancer cells and peritoneal cells using a proteomics approach. This novel strategy aims to identify important proteins likely to be mechanistically involved in implantation onto the peritoneum. Several proteins which are differentially expressed in co-culture experiments with ovarian and mesothelial cells have been identified using MALDI-TOF/TOF mass spectrometry.

Ongoing functional studies are investigating whether these candidate proteins play an important role in ovarian cancer implantation and invasion. If this is the case these proteins may serve as targets for the development of therapeutics inhibiting ovarian cancer metastasis and decreasing mortality. Assoc Prof Martin K. Oehler