#838   Identification of Immunoreactive Antigens in Ovarian and Breast Carcinoma. Liu-Ying Luo, Antoninus Soosaipillai, and Eleftherios Diamandis. *Mount Sinai Hospital, Toronto, ON, Canada, and University of Toronto, Dept. of Lab Medicine and Pathobiology, Toronto, Canada.*

During tumor initiation and progression, expression of mutated genes leads to accumulation of mutated proteins in the tumor cells. We hypothesized that these mutated proteins act as immunogens and trigger host immune response, resulting in production of anti-mutant protein antibodies. These autoantibodies circulate in the blood of cancer patients. These immunogens are potential targets for cancer vaccination. In this study, we used ovarian and breast cancer as models to examine this hypothesis. We first screened a recombinant ovarian carcinoma cDNA expression library with ascites from ovarian cancer patients to identify cellular proteins that trigger autoantibody production. Totally, 13 proteins were found to have immunoreactivities. Among these proteins, twelve are known proteins, including ribosomal protein S18, heat shock protein (90kda), JK-recombination signal binding protein, ribonucleoprotein H1, RAN binding protein 7, TG-interacting factor, eukaryotic translation initiation factor 3 (p40), human amyloid precursor protein-binding protein 1, ribosomal protein L8, CDC23 (cell division 23), IQ motif containing GTPase activating protein 1(IQGAP1), and ribosomal protein L3. One protein is unknown, which is encoded by a novel gene. We also screened a breast cancer recombinant expression library with serum from breast cancer patient. We found that seven proteins had immunoreactivities. Three proteins are known, including protein phosphatase 4 regulatory subunit, MIL1 protein (nuclear gene encoding mitochondrial protein), and MacMarks protein. Two proteins are hypothetical proteins with unknown function, including putative translation initiation factor and hypothetical RNA helicase. The other two proteins are unknown proteins encoded by novel genes. Our study demonstrates that it is feasible to identify immunoreactive antigens by immunoscreening of recombinant expression libraries. These identified proteins are potential targets for ovarian and breast cancer vaccination. Furthermore, the role of these proteins in ovarian and breast carcinogenesis worth further investigation.