

METASTATIC OVARIAN CANCER MOUSE MODELS AND CELL LINES FOR PRECLINICAL STUDIES

SUMMARY

NCI's Center for Advanced Preclinical Research (CAPR) has developed a Serous Epithelial Ovarian Cancer (SEOC) genetically engineered mouse model (GEM), GEM-derived SEOC orthotopic mouse model, and biological materials derived therefrom, with several key histopathologic, immunophenotypic, and genetic features of human SEOC. NCI CAPR seeks licensees for this technology.

REFERENCE NUMBER

E-069-2012

PRODUCT TYPE

- Research Materials

KEYWORDS

- Genetically Engineered Mouse (GEM) Model
- GEM Derived Allograft Mouse Model, GDA
- Serous Epithelial Ovarian Cancer, SEOC
- ovarian cancer

COLLABORATION OPPORTUNITY

This invention is available for licensing.

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DESCRIPTION OF TECHNOLOGY

The high mortality rate from ovarian cancers can be attributed to late-stage diagnosis and lack of effective treatment. Despite enormous effort to develop better targeted therapies, platinum-based chemotherapy still remains the standard of care for ovarian cancer patients, and resistance occurs at a high rate. One of the rate limiting factors for translation of new drug discoveries into clinical treatments has been the lack of suitable preclinical cancer models with high predictive value.

Researchers at [NCI's Center for Advanced Preclinical Research \(CAPR\)](#) developed Tri-allelic K18-

T121^{tg/+}/Brca1^{fl/fl}/p53^{fl/fl} SEOC GEM Model, GEM-derived SEOC orthotopic mouse model, and biological materials derived therefrom, with several key histopathologic, immunophenotypical, and genetic features of human SEOC. SEOC GEMs were utilized to create orthotopic immunocompetent transplant models, and to generate synchronized cohorts of mice suitable for preclinical studies. NCI CAPR conducted studies that determine these models are tractable for use in routine efficacy studies and demonstrate the utility of these models in evaluating the potential efficacy of novel therapeutics for ovarian cancer.

POTENTIAL COMMERCIAL APPLICATIONS

- Foundation for preclinical research and evaluation of efficacy of novel therapeutics for ovarian cancer;
- Can be used to develop cell lines and allograft models for evaluating drug potency relative to Brca1 mutation status;
- Opportunity to evaluate therapeutic efficacy, including prediction of differential responses in Brca1-wild type and Brca1-deficient tumors and development of relevant biomarkers.

COMPETITIVE ADVANTAGES

- Novel resource for evaluating disease etiology and biomarkers, therapeutic evaluation, and improved imaging strategies in epithelial ovarian cancer;
- Similarity to human ovarian cancer based on transcriptional profiling;
- Suitable preclinical cancer models with high predictive value.

INVENTOR(S)

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DEVELOPMENT STAGE

- Pre-clinical (in vivo)

PATENT STATUS

- **Not Patented:** Research use--no patent protection will be sought

RELATED TECHNOLOGIES

- E-182-2012

THERAPEUTIC AREA

- Cancer/Neoplasm