

【Grant-in-Aid for Scientific Research(S)】

Biological Sciences (Medicine, dentistry, and pharmacy II)



Title of Project : Comprehensive Molecular Genetics of Esophagus Cancer Study for Development of State-of-art Therapy.

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Research Area : Medicine

Keyword : Surgery, Molecular genetics, OMICS Medicine

【Purpose and Background of the Research】

Considering the status and trends of population aging in many developed countries including Japan, cancer is one of the most emphasized disorders for public welfare and health state measures. Indeed, although in comparison with the other developed countries, Japan had ranked low in the percentage of the elderly until the 1980s, ranked medium in the 1990s, and the country is expected to rank the first in the early 21st century. Eventually one-thirds populations die from cancer, of which 70% are resultant from gastrointestinal tumors, such as those of colon, stomach, esophagus, liver and pancreas. To overcome the esophageal cancer, the most efficient strategy for the treatment of esophageal cancer by utilizing the state-of-art technology will be developed in this study, with the collaboration of sophisticated research group and core hospitals in Japan.

【Research Methods】

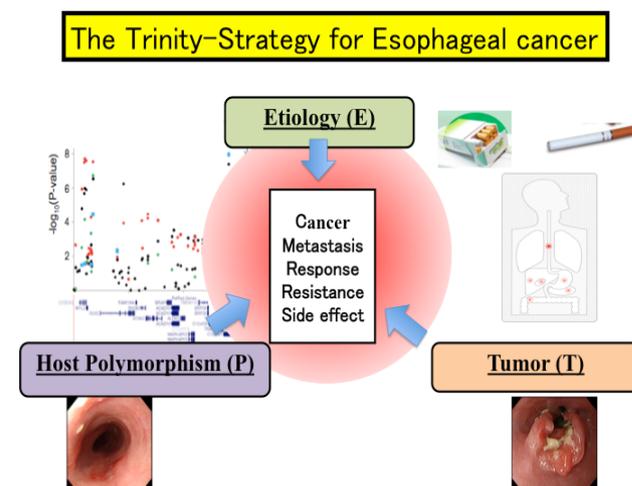
The global strategy will be applied by combination of three studies, tumor, host, and etiology. The most efficient state-of-art technology will be applied.

- 1) High performance SNP analysis (host factor)
- 2) CGH analysis (tumor factor)
- 3) OMICS analysis (host and tumor factors)
- 4) Non-coding RNA analysis (host and tumor factors)
- 5) Application from excellent core hospitals (Etiology)
- 6) Prediction of therapy response and side effect (host and tumor factors)

【Expected Research Achievements and Scientific Significance】

The substantial improvement of survival and quality-of-life of cancer patients is expected. Beyond the conventional total-kill chemotherapy, targeting cancer considering host, tumor and etiology factors will minimize the toxic effect on body, and maximize the efficacy of anti-cancer therapy, undoubtedly

contributing to saving social medical expenses.



【Publications Relevant to the Project】

- Cancer Res 69(9):3788-3794, 2009.
- Clin Cancer Res 14(9):2609-2616, 2008.
- Cancer Res 68(4):1074-1082, 2008.
- Cancer Sci 99(10): 1871-1877, 2008.
- Ann Surg Oncol 15(10): 2927-2933, 2008.
- Oncologist 12(4):406-417, 2007.
- Stem Cells 24(3):506-513, 2006.
- N Engl J Med 352:1667-1676, 2005.
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【Term of Project】 FY2009-2013

【Budget Allocation】 162,700 Thousand Yen