

[Inter-institutional cooperative laboratory]

Laboratory of Cancer Biology

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(Exploratory Oncology Research and Clinical Trial Center, National Cancer Center)

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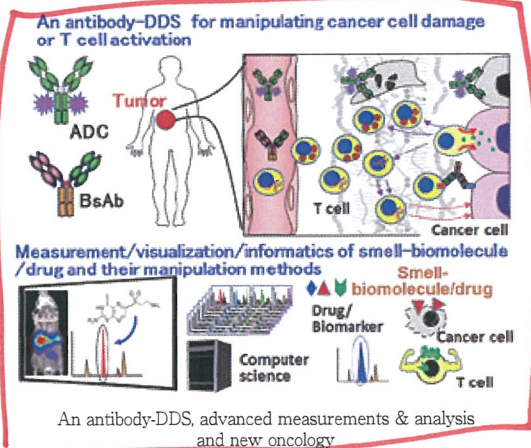


The main goal of the research in this laboratory is to develop innovative strategies for cancer diagnosis and treatment based on the better understanding of the physiology and biology of tumor microenvironments and cancer-host interaction.

Research focus;

1) Antibody-drug delivery system (DDS), advanced measurements & analysis, and new oncology (Yasunaga Laboratory)

- Development of an innovative cancer treatment / novel immunoregulatory therapeutics through an antibody-DDS; Antibody-drug conjugate (ADC), Bispecific antibody (BsAb) or DDS-drug.
- Applied research of advanced chemical and biological measurements & analysis using molecular imaging, mass spectrometry and computer science.
- Creation of new oncology targeting smell-biomolecules and drugs (Figure).

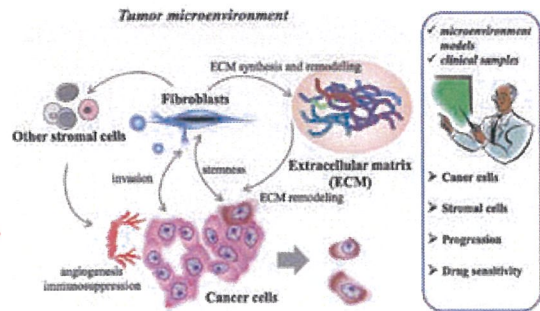


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2) Cancer biology based on the microenvironment context (Ishii Laboratory)

- Generation of in vivo and in vitro models mimicking the cancer microenvironment by using fluorescence imaging and time-lapse imaging.
- Clarification of the novel biological mechanisms of cancer progression and drug sensitivity based on the microenvironment context.
- Validation of the obtained results by using human samples.

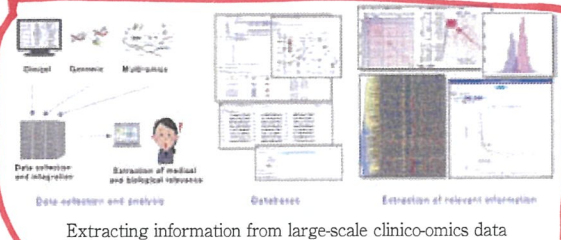


3) Development of therapeutics and diagnostics by integrated analysis of clinical omics data, and overcoming resistance to cancer therapy (Tsuchihara and Ohashi Lab)

To develop cancer therapeutics and diagnostics, integration of clinical information and multi-omics analysis data is necessary. We are engaged in research and development of data processing pipelines, database construction, optimization techniques for efficient extraction of relevant information, and visualization.

Aiming to novel drug discovery based on cancer hallmarks and vulnerabilities, we are conducting basic and translational research programs with multiple experimental approaches: molecular and cellular biology, chemical biology, pharmacology, bioinformatics, and AI technologies. We are also driving collaboration programs with academia, biotech, and pharmaceuticals in Japan and overseas.

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図追加



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6番目 = 新規追加