Presentation (Site A) Date / Presenter / Lecture Title

Oct.15 (Thu.) 13:00~13:10

【 Division / Position 】Organization for Research Promotion & Collaboration / Vice Director, Professor
【 Title 】Overview of Okayama University
【 Lecture Abstract 】Okayama University is a comprehensive institution with approximately 1,300 faculty and 14,000 students. It is situated approximately three hours west of Tokyo by high-speed rail. It presents wide research activities from the basics to application. While, the Collaboration Relation Office promotes that the research results such as medical care, innovative drug development, medical technology, medical equipment and agriculture will be used in practice. The Intellectual Property Office acquires many high grade patents and develops intellectual property activity in world wide.

Tetsuro Omoto

Oct.15 (Thu.) 13:10~13:30

【 Division / Position 】Department of Microbiology, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences / Associate Professor
【 Title 】Dual roles of Compound K
【 Lecture Abstract 】We showed that Compound K from Nuphar japonicum has antibiotic activity for MRSA and VRE. Its action mechanism was the inhibition of DNA topoisomerase IV. Synergy effects with several antibiotics were also observed. When Compound K was added with vancomycin, the MIC of vancomycin for VRE was significantly reduced (1/256). These results suggested that Compound K has dual roles as an antimicrobial agent and as a potentiator of conventional antibiotics.

Teruo Kuroda

Oct.15 (Thu.) 13:30~13:50

【 Division / Position 】Department of Anesthesiology and Resuscitology, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences / Professor
【 Title 】Histidine Rich Glycoprotein as a novel prognostic marker in sepsis
【 Lecture Abstract 】Even after recent developments of sepsis research, sepsis is still resulting in a high mortality. We still did not have any specific and reliable markers of sepsis. Traditionally, White cell count and C reactive protein were markers of inflammation. However, their reliability is low. More recently, procalcitonin and precepsion has been recognized as newly developed sepsis biomarkers. Histidine Rich Glycoprotein (HRG) exists in human body. Until now, we did not pay any attention to HRG as a novel biomarker for sepsis. We recently found that HRG has an important role in sepsis induced organ failure and its related mortality. We believe HRG could be a novel biomarker in sepsis.

Hiroshi Morimatsu

Oct.15 (Thu.) 13:50~14:10

【 Division / Position 】Collaborative Research Center for OMIC, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences / Assistant Professor
【 Title 】Okayama Medical Innovation Center (OMIC) and Frontier Studies of Molecular Imaging
【 Lecture Abstract 】Okayama Medical Innovation Center (OMIC) has fully equipped molecular imaging research facilities at Okayama University and promote the facilities available to the industry, academia and government researchers to support the drug discovery and drug development. A wide variety of PET-nuclides (11C, 13N, 15O, 18F, 64Cu, 89Zr) can be produced at OMIC. We will introduce molecular imaging facilities, synthesizable PET probes, and research suppoting systems for promoting the use of external organizations. In addition, we would introduce the update of molecular imaging studies which has been performed at OMIC.

Akiya Akahoshi

Continued on back
**Lecture Abstract**

Most patients with cancer are treated by combinations of surgery, chemotherapy and radiotherapy, though the some patients are provided poor prognosis. On the other hand, some patients with malignant cancer are provided good prognosis by immunotherapies. However, change in systemic immunities on patients with cancer still unknown enough. We have established both an animal model with primary tumor and an animal model with metastatic tumor, on mice. And we show changes in systemic immunities on the model animals with malignant cancer. Our established animal models are useful to develop various therapies while assessing changes in systemic immunities.

**Lecture Abstract**

Metformin is the most prescribed drug for type 2 diabetes, and recently scientists pay much attention to its anti-cancer effect, although the mechanism has been poorly understood. We have found that metformin administration converts tumor infiltrating CD8 T lymphocytes (CD8 TIL) from central memory (TCM) to effector memory T cells (TEM) capable of fighting against tumors. Metformin-induced TEM restores ability to produce multiple cytokines (multi-functionality) and is protected from apoptosis.

**Lecture Abstract**

Taking the pluripotency of stem cells into consideration, we hypothesized that malignant neoplasm is one of the tissue types differentiated from stem cells. In this context, a cancer stem cell (CSC) could be described as a progenitor cell that is destined to differentiate into a cancer cell. This might be called ‘canceration’ rather than tumor initiation. We have demonstrated that mouse iPSCs (miPSCs) acquire characters of CSCs when miPSCs were cultured in the presence of conditioned medium prepared from various cancer cell lines. Moreover, we were successful in the generation of CSCs from human iPSCs also. Our methodology shows good prospects for the generation of new models of cancer and cancer stem cells. Utilizing our approach, we plan to establish a consortium for the collection that covers the whole aspects behind the cancer developmental stages. We believe that this platform will be an invaluable tool for cancer research.