Principal Investigator: Takashi Yao (Professor)

The research in our department is cancer research encompassing a wide range of tumors from various organs primarily based on the tumor morphology. Gastrointestinal carcinoma is one of our major targets. In particular, we have recently established a new entity of gastric cancer named gastric adenocarcinoma of chief cell predominant type. We focus on the molecular pathogenesis of this special type of gastric adenocarcinoma. By using immunohistochemistry and PCR, we found frequent activation of the Wnt signaling pathway by the genetic alteration of Wnt component genes\textsuperscript{1}. Research on basaloid squamous cell carcinoma (BSSC) of the esophagus is another main project. This tumor is a poorly differentiated variant of SCC. We previously showed that esophageal BSSC is characterized by activation of the Wnt signaling pathway. More recently, we found that \textit{PTCH1} mutations frequently occur in this tumor, leading to constitutive activation of the Hedgehog (HH) signaling pathways in BSSC\textsuperscript{2}. We propose that possible pharmaceutical therapies targeting both the HH and the Wnt signaling pathways would be quite effective in treating this tumor.

Group Leaders and Research Topics

1) Tsuyoshi Saito (Associate Professor)

We are investigating the molecular pathogenesis of bone and soft tissue tumors to find biomarkers with prognostic impact or that are applicable for molecular diagnosis and molecular-targeted therapies\textsuperscript{3} in collaboration with the Department of Orthopaedic Surgery.

2) Yuki Fukumura (Associate Professor)

My group focuses on the molecular pathogenesis of pancreatic and biliary duct tumors to elucidate the impacts of genetic alterations on the clinicopathological factors\textsuperscript{4}.

3) Atsushi Arakawa (Associate Professor)

My group focuses on breast cancer research in collaboration with the Department of Breast Oncology. Identifying biomarkers for chemo-sensitivity is the major project\textsuperscript{5}.

Publications


