

2017Joint Usage and Research Report

Title of Research Project		Roles of infection, inflammation and immunity in carcinogenesis and malignant progression.
Applicant	Institution	Hokkaido University, Sapporo, Japan
	Job title and name	Professor NOGUCHI Masayuki Division of Cancer Biology Institute for Genetic Medicine Hokkaido University
Visiting researcher	Name	STERN Marc-Henri
Purpose of the Research Project (approx. 250 words)		<p>The PI3K/AKT is the most important oncogenic pathway activated in human breast carcinoma. The mechanism of activation is strikingly different between luminal tumors (hormone receptor positive) in which the most common event is activating mutation of PI3KCA and triple negative (TNBC: hormone receptors negative and HER2 not amplified) in which the common events are down-regulation/inactivation of PTEN or INPP4B. TNBC are frequently inactivated for BRCA1 involved in homologous recombination (HR) pathway. Furthermore, autophagy could be involved in TNBC aggressiveness. A better understanding of the interplays between the specific mechanisms of PI3K/AKT activation, the proficiency or deficiency of the HR pathway and the autophagy / LC3B status should allow gaining insights in breast oncogenesis. The aim of this first visit to major Japanese research and clinical centers is to establish contacts and collaborations in order to answer these important questions.</p>
Development of the Research Project and Results (approx.. 850 words)		<p>Following my visit to Hokkaido University, we launched the development of a new technology to address the diagnosis of homologous recombination deficiency (HRD), based on shallow (low coverage) whole genome sequencing (sWGS). First sequencing were obtained and are suitable for HRD sequencing. However, the high throughput analysis of such data necessitates new bioinformatics pipeline and tools, which are ongoing. This first step should be completed before June 2018. This will then allow to correlating the PI3K/AKT</p>

	pathway status to the HR status in breast cancer cohorts.
Publication *Enter the names of conference or journal and its vol. No. where the above work was presented.	【Conference, symposium, workshop etc.】 None yet
	【Journals】 None yet