

Dissertation Abstract

Report no.	(Course-based) No.1023	Name	SUBEDI AMIT
Dissertation title	Identification of small molecule inhibitors of cancer stem cells by target-based and cell-based screenings (標的ベースおよび細胞ベースの探索によるがん幹細胞の小分子阻害剤の同定)		
<p>Cancer treatment has been a difficult task due to presence of cancer stem cells (CSCs) and most of current anti-cancer drugs are ineffective against CSCs. Thus, there is urgent need of small molecules that could selectively inhibit CSCs. To identify small molecules inhibitors for CSCs, we applied target-based approach and cell-based approach to find such selective inhibitors.</p> <p>As described in Chapter 2, we developed a novel target-based method to screen Pin1 protein inhibitors and found a novel small molecules inhibitor of Pin1. We further synthesized more potent Pin1 inhibitors which was active against cancer cells and CSCs.</p> <p>As described in Chapter 3, we utilized a novel cell-based approach by using induced cancer stem cell-like cells as CSC model and found that artesunate, an antimalarial drugs, and new small molecule NPD2381 could selectively inhibit OXPHOS-dependent CSCs by inducing mitochondrial dysfunction.</p> <p>These method to identify inhibitors for CSCs, and small molecules identified as CSC inhibitors should be valuable for treatment against cancer.</p>			