3-I-3.

A compound mutation of epidermal growth factor receptor in tyrosine kinase inhibitor therapy of non-small cell lung cancer

（社会人大学院博士課程 2 年呼吸器・甲状腺外科学分野）
○松原　泰輔、池田　徳彦
（東京医科大学茨城医療センター：呼吸器外科）
中嶋　英治、並川　晴佳、小野祥太郎
古川　欣也
（東京医科大学茨城医療センター：共同研究センター）
宮﨑　照雄
（東京医科大学茨城医療センター：病理診断科）
森下　由紀

Background : Epidermal growth factor receptor（EGFR）mutations lead to EGFR-tyrosine kinase inhibitor（EGFR-TKI）therapy of non-small cell lung cancer（NSCLC）. EGFR mutations have over 400 types in the catalog of somatic mutations in cancer（COSMIC）database, which include substitutions, deletions, insertions and compound mutations. Cobas version 2.0 as companion diagnostic targets the detection of the mutation on a single site regarding frequent 42 EGFR mutations. We investigated the detection of the compound mutation on double sites and the response of EGFR-TKI therapy.

Method : A series of 24 NSCLC patients had examination of cobas version 2.0 to detect EGFR mutations from 2016 to 2017, after they had undergone surgery. EGFR mutations were detected by cobas version 2.0 in 10 patients（41.7%）. In 14 patients with the result of wild type on cobas version 2.0, direct sequencing was performed using a primer set flanking exon 18 to 21 with surgical samples.

Result : A compound mutation was detected by direct sequencing among the patients with the result of wild type on cobas version 2.0. It was L858R and G863D in exon 21, and G863D was not selected by cobas version 2.0. The patient with L858R and G863D had the recurrence after the surgery, and then the response of EGFR-TKI therapy.

Discussion : Companion diagnostics including cobas version 2.0 are clinically useful to detect EGFR mutations for EGFR-TKI therapy of NSCLC. In the present study, the result suggests that the compound mutation undetectable by companion diagnostics has the possibility of the response in EGFR-TKI therapy.

3-I-4.

Search for therapeutic agents for tongue cancer targeting choline transporter-like protein 1（CTL1）

（大学院博士課程 3 年口腔外科学分野）
○柴田　　薫
（医学総合研究所）
西島　　希、平井　花歩、渡邊才一郎
（分子予防医学）
山中　　力
（口腔外科学分野）
近津　大地
（医学総合研究所、分子予防医学）
稲津　正人

Tongue cancer is the most common type of oral cancer, and its number is increasing every year. The relationship between choline metabolism and cell proliferation receive attention in recent years. Choline transporter-like proteins（CTLs）are highly expressed in cancer cells, and it has been revealed that inhibiting choline transport causes cell growth suppression and apoptosis.

Previous studies have elucidated the characteristics of choline uptake function and the molecular entity of choline transporter using human tongue carcinoma cell line HSC-3 and confirmed that choline transporter-like protein 1（CTL1）is highly expressed. CTL1- mediated choline transport system provides a potential new target for tongue cancer therapy.

Therefore, we searched for organic compounds having CTL1 inhibitory activity and conducted research toward the development of new therapeutic agents for tongue cancer.

We found the compound X from 500 plant-derived natural organic compounds in HSC-3 cells that inhibited choline uptake and cell viability in a concentration