J5 [J] ／ がん細胞のシグナルトランスダクション (1)／Signal transduction of cancer cells (1)

[座長]

村上 善則 (東京大・医科研・人癌病因道遺伝子分野)

2019/09/26 09:00〜10:15 Room 12 (2F Room J)

印 刷

[J-1020] 09:00〜10:15
分泌性タンパク質p53PAD7とHippoシグナル経路による増殖抑制機構の解明Secreting protein p53PAD7 inhibits cell proliferation via the Hippo signaling pathway

[演者]滝川 雅大 (国立がん研セ・研・基礎腫瘍学ユニット)

[共著者]

岡部 篤史 (千葉大・院医・分子腫瘍学)

金田 篤志 (千葉大・院医・分子腫瘍学)

石川 冬木 (京都大・院生命)

大木 理恵子 (国立がん研セ・研・基礎腫瘍学ユニット)

The *p53PAD7* gene is frequently methylated in a part of cancers. The *p53PAD7* gene is known as a target gene of p53 that suppresses cell proliferation, however, the molecular function of p53PAD7 is totally unknown. Here, we found that p53PAD7 is secreted to the cell culture medium and that cell proliferation is strongly suppressed in the presence of p53PAD7 protein. We hypothesized that p53PAD7 acts as a ligand that is received by specific receptors. To identify the candidate receptors, we performed immunoprecipitation and mass spectrometric analysis together with a heterobifunctional crosslinker, and successfully identified protocadherin FAT1 and FAT4 as p53PAD7 receptors. Human FAT1 and FAT4 are homologs of *Drosophila melanogaster* Fat, which is a receptor of the Hippo signaling pathway that regulates cell proliferation. Consistently, we observed activation of the Hippo signaling pathway when cells were treated with purified p53PAD7. Taken together, our results suggest that cell proliferation is regulated by p53PAD7 via the Hippo signaling pathway.