

(様式 4)

学 位 論 文 の 内 容 の 要 旨

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(学位論文のタイトル)

High STMN1 expression is associated with cancer progression and chemo-sensitivity in lung squamous cell carcinoma

(肺扁平上皮癌における STMN1 の高発現は予後不良と抗癌剤耐性に関連する)

1) Background and purpose

Stathmin1 (STMN1) is known to regulate the dynamics of the microtubules, cell cycle progress and chemo-resistance against taxane agents. The high expression was reported in several human cancers and involved in cancer proliferation, chemo-resistance and poor prognosis. However, few studies investigated the significance of STMN1 in lung squamous cell carcinoma (LSCC). In this study, we aimed to examine the expression and function of STMN1 in LSCC.

2) Materials and method

STMN1 expression was examined by immunohistochemistry using FFPE tissue sections from 186 LSCC patients. All patients were classified in to discovery cohort whose sample obtained from General Surgical Science and validation cohort whose samples obtained from Thoracic Visceral Organ Surgery. STMN1 suppression analysis was performed for *STMN1* siRNA transfected LSCC cell lines EBC1 and H520 to determine the change of proliferating, invasive, and paclitaxel-sensitivity.

3) Results

The cytoplasmic STMN1 expression in LSCC was higher than that of normal tissues. High STMN1 expression group (n=114) was significantly associated with vascular invasion and poor prognosis compared to the low group (n=72). In addition, the proliferating and

invasive abilities were decreased and the apoptosis ability and paclitaxel-sensitivity were increased in STMN1 suppressed LSCC cells compared with the control cells.

4) Discussion

In this study, we demonstrated that high expression of STMN1 was associated with cancer progression and poor prognosis in LSCC patients. Consist with clinical out come, *in vitro* silencing of *STMN1* using siRNA inhibited the invasion and proliferation of LSCC cell lines compared to control cells.

5) Conclusion

STMN1 could be a predictor for poor prognosis and potential therapeutic target in LSCC. In the further studies, we want to clarify the possibility of STMN1 as a taxane sensitivity marker and blood biomarker in clinical LSCC patients who treated with taxane agents.