

# Analysis of HYAL3 gene mutations in Chinese lung squamous cell carcinoma patients

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## ABSTRACT

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**Purpose.** In a previous study, we found a hyaluronidase 3 (HYAL3) gene mutation in exon 2 at position 188 by genome sequencing in a lung squamous cell carcinoma patient. The mutation results in substitution of serine for alanine. The aim of the study was to screen the HYAL3 gene mutation in Chinese lung squamous cell carcinoma patients and explore the correlation between mutation of HYAL3 with clinical and pathological characteristics in lung squamous cell carcinoma patients in China.

**Methods.** We applied polymerase chain reaction to examine the HYAL3 gene mutations in cancer tissues and their adjacent normal tissues from 39 cases of lung squamous cell carcinoma patients.

**Results.** 1) The incidence rate of HYAL3 mutation in 39 cases of lung squamous cell carcinoma was 10.26% (4/39) and none in adjacent normal lung tissues (0/39). 2) The mutations of HYAL3 in the 4 cases were all heterozygous: 3 of them were located in exon 1 (G-T) and one in exon 2 (G-T). 3) Mutations of the HYAL3 gene were not correlated with the distribution of patient gender, age, tumor size, histological grade, smoking history, TNM stage or distant metastasis ( $P > 0.05$ ). The gene mutation was correlated with lymph node status ( $P = 0.044$ ).

**Conclusion.** Mutations of the HYAL3 gene are rare in Chinese lung squamous cell carcinoma patients and might contribute to lymph node metastasis.

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**Key words:** hyaluronidase, hyaluronan, lung squamous cell carcinoma, mutation, polymerase chain reaction.

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