



# ISGRS 2018

1<sup>st</sup> INTERNATIONAL SYMPOSIUM ON GRADUATE RESEARCH IN SCIENCE  
FOCUS ON ENTREPRENEURSHIP AND INNOVATION



## ABSTRACTS BOOK

# ISGRS 2018

*1<sup>st</sup> International Symposium on Graduate  
Research in Science  
Focus on Entrepreneurship and Innovation*

*4-6 October Istanbul/TURKEY*

ISGRS 2018

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1<sup>st</sup> International Symposium on Graduate Research in Science Focus on  
Entrepreneurship and Innovation (ISGRS 2018)

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**Topic: Molecular Biology and Genetics**

**RECOMBINANT PRODUCTION OF POTENTIAL ALLERGEN METHIONINE SYNTHASE**

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**EXTENDED ABSTRACT**

**Introduction**

Pollens are the most important aeroallergens that cause allergy. The allergenic properties, chemical constituents and atmospheric concentrations of pollens change by climate, geographic location and environmental conditions. These factors lead to ambiguity in the diagnosis and treatment of pollen allergy. Today, recombinant allergens are being produced to cope with these problems. The main purpose of this study is to produce recombinant methionine synthase, a potential allergen found in local *Morus alba* (white mulberry) pollen, using fission yeast, *Schizosaccharomyces pombe* as host organism.

**Materials and Methods**

Total RNA was isolated from the pollens of *M. alba*, and cDNA library was constructed. The verification of the methionine synthase gene (*metE*) amplified by the polymerase chain reaction (PCR) from this cDNA library was conducted by the nucleotide sequencing. *metE* gene was ligated with a shuttle type vector, pSLF1073. Then this ligation product was transformed into *S. pombe*. After protein isolation from transformant colonies, recombinant protein was detected using Coomassie staining and Western blot methods.

**Results**

A protein band indicating metE protein of 85 kDa was observed in transformed cells both in Coomassie staining and Western blotting assays, while no band was detected in nontransformed cells. Thus, *M. alba metE* gene was successfully cloned in *S. pombe* for the first time in this study. It has been demonstrated that *S. pombe* can be used effectively in the production of recombinant allergens.

**Innovation**

Diagnostic kit and vaccine production studies can be carried out from the available data, and the experiences gained in this study will contribute to the development of national diagnosis kits for pollen allergies. Such efforts are expected to reduce cost and external dependency to the related pharmaceuticals, which are currently imported.

**Keywords:** *Morus alba*, methionine synthase, recombinant allergen.

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