

## ANALYSIS OF SPORULATION ABNORMAL MUTANTS (SAM) IN FISSION YEAST

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**INTRODUCTION:** The life cycle of fission yeast *Schizosaccharomyces pombe* is nutritionally regulated, and it ordinarily undergoes sexual differentiation in response to nitrogen starvation. However, nine mutants termed *sam*, produced by Katayama\* are highly inclined to sexual development despite the presence of nitrogen sources. These mutants were produced by ethylmethane sulphonate mutagenesis, and the mutated genes have remained to be characterized. **OBJECTIVE:** To identify further the novel *sam* mutants, 75 protein kinase deletion mutants generated by Bimbó\*\* were tested for mating and sporulation assays. In addition, the expression of *ste11*, a key regulator in the control of mating and sporulation in fission yeast, was analyzed in *sam* mutants. **RESULTS:** We have measured the conjugation ability on YE/YES rich medium and only *csk1* (cyclin suppressing kinase) mutant was able to mate, leading to asci formation, as *sam* mutants. By Real Time RT-PCR *sam* 1, 3, 4, and 9 showed to highly express *ste11*. **CONCLUSIONS:** We have reported the possible involvement of a novel gene, *csk1*, in the regulation of sexual development of fission yeast. Our results also suggest that the *ste11* transcription factor is responsible for activation of genes involved in sexual differentiation in *sam* 1, 3, 4, and 9. **ACKNOWLEDGEMENT:** Shimane University and Shimane Prefecture. **KEY WORDS:** fission yeast, *sam*, *ste11*.  
\*Katayama et al. Biosci. Biotechnol. Biochem. 1996 \*\*Bimbo et al. Eukaryot. Cell 2005