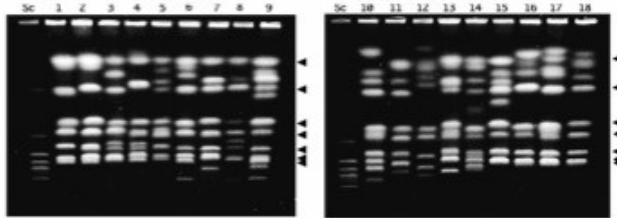


Molecular and Cellular Biology of Fungi

Shin-Ichi IWAGUCHI [Biological Sciences Course]

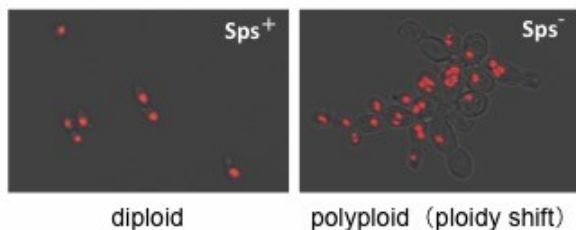
A. Chromosome aberration in *Candida* sp.

Electrophoretic karyotype



Chromosome translocation among clinical isolates

B. Analysis of ploidy shift in *Candida* sp.

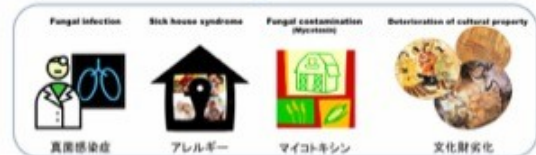
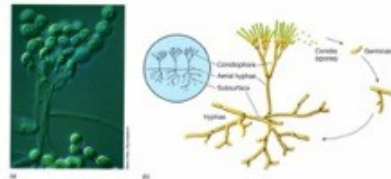


diploid

polyploid (ploidy shift)

SPS (Suppressor of ploidy shift) regulates ploidy state

C. Microbial volatile organic compounds



Early diagnosis of fungal infection with MVOCs

D. Fermentation microbiology



(A) chromosome aberration observed in *Candida albicans*, (B) ploidy shift caused by mutation of SPS genes,

(C) Microbial Volatile Organic Compounds (MVOCs), (D) Fermentation microbiology with flower yeasts

The fungi are known as yeast and mold. Some fungi are damaging for human as the pathogen causing infectious disease, others are benefit for us providing fermented foods and materials. The Iwaguchi laboratory focuses on human pathogenic fungi and fungal fermentation for producing foods and cosmetic materials. Four major projects are (1) Chromosome aberration in *Candida* species, (2) The regulation of ploidy in imperfect fungi, (3) Early diagnosis in fungal infection with microbial volatile organic compounds (MVOCs) emitted by filamentous fungi, and (4) fermentation microbiology with yeasts isolated from flower.

Keywords : Fungi, Chromosoma aberration, Ploidy shift, Microbial volatile organic compounds, Fermentation Microbiology