1ST EUROPEAN CONFERENCE
ON FUNGAL GENETICS

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PROGRAMME AND ABSTRACTS
Yeast flocculation is of fundamental importance in industrial fermentations, such as brewing, SCP production and alcoholic fermentation. This characteristic permits an efficient separation of yeast cells from the fermenting wort. In addition, ethanol tolerance is a desirable characteristic for yeast used in ethanol production. *S. cerevisiae sake* shows a good tolerance to exogenous ethanol but does not have neither flocculating nor mating ability. To overcome this situation, protoplast fusion was used to combine ethanol tolerance with flocculation. *S. cerevisiae NCYC 869*, genotype MATa FLO1 was used to construct an ura3 auxotrophic marker utilizing UV radiation and selective 5-FOA plates. *S. cerevisiae sake IAM*, unknown genotype, Japanese sake yeast, prototrophic, was used to construct respiratory deficient mutants (ρ-) using acriflavine and selective TTC and glycerol media plates. Protoplast fusion of these mutants was carried out with 35% PEG, MW 6000, 15% DMSO and Ca++ ions. The fusants were selected as prototrophic and respiratory competent colonies. For this purpose minimal glycerol medium was used. Only flocculants and ethanol tolerant hybrids were submitted to nuclear staining and DNA dosage. The frequency of appearance of hybrids was 5x10⁻⁵. Back mutation frequencies of *S. cerevisiae ura3* and *S. cerevisiae sake ρ-* were <6.5x10⁻¹⁰ and 4.2x10⁻⁷, respectively.