Ain Shams University
Faculty of Science

GENETIC STUDIES ON HEAT TOLERANCE IN YEAST FUNGI

In fulfillment of the requirments for the degree of

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in
Microbiology

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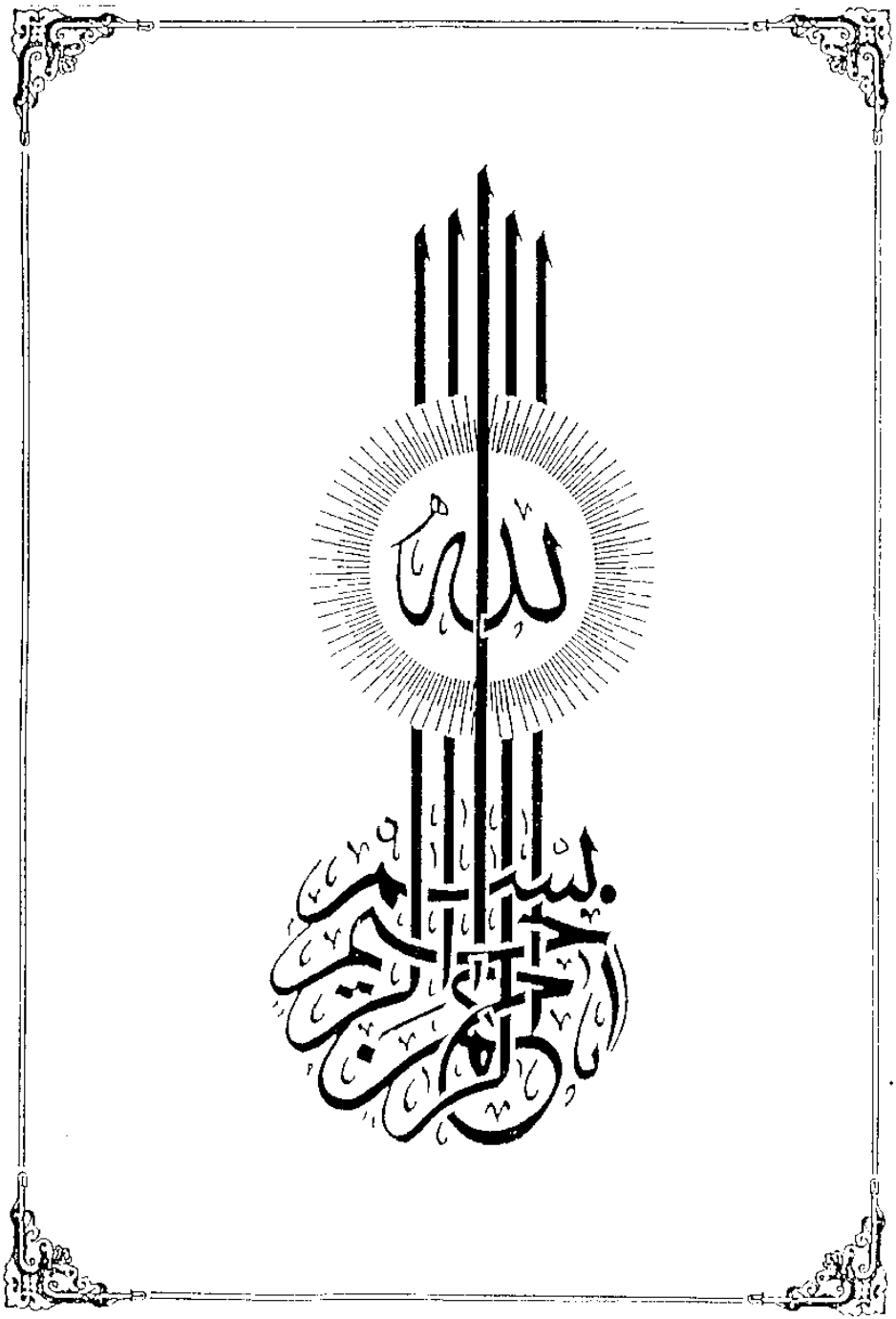

Approval Sheet

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Praise to be (Allah) sovereign to the universe , and blessing and peace upon " Mohammed" his kinsmen and companions all

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Key Words

DNA	**Deoxyribonucleic Acid.**
HA	**Hydroxylamine.**
UV	**UltraViolet.**
MNNG	**N-methyl-N-nitro-N-nitrosoguanidine.**
O.D.	**Optical density.**
S.D.S	**Sodium dodecyle sulphate.**
TM	**Tris - malic buffer.**
TE	**Tris-EDTA.**
EDTA	**Ethylene diaminetetra-acetic acid.**
HSP	**Heat Shock Protein.**
HSE	**Heat Shock Element.**
HSF	**Heat Shock Factor.**
CDC	**Cell Division Cycle .**

ABSTRACT

-Five wild type *S.cerevisiae* strains were used in this study to select the most heat tolerant one . Tetrad analysis was an effective tool to produce 54 viable spores from *S.cerevisiae* FA111 and *S.cerevisiae* Alex . 304 crosses were performed with all possible combinations between the 35 identified haploids of *S.cerevisiae* FA111 & *S.cerevisiae* Alex all crosses tolerated 41^0C for 72 hours but their heat resistance were variable at 42^0C for 1 day and 2 days

Mutation experiments were widely used to induce heat tolerant *S.cerevisiae* . MNNG was used throughout this thesis to induce thermotolerant yeast strain.

Also (HA+UV) combination was used to induce thermotolerant strains . But transformation using DNA isolated from *Streptomyces spp* failled to obtain any thermotolerant strains . Three mutants were obtained from the previous experiments 5a' , 5a" ,5a"' (spontaneous mutants) .

The growth rates of these mutants were measured at 42^0C and 42.5^0C and their heat stability was determined at 42^0C .

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