# DETERMINATION OF SYNTENIC GROUPS IN THE EGYPTIAN WATER BUFFALO USING DNA PROBES

Thesis
Submitted to
Faculty of Science
Ain Shams University

In Partial Fulfillment of
the requirements for the degree of
Master of Science


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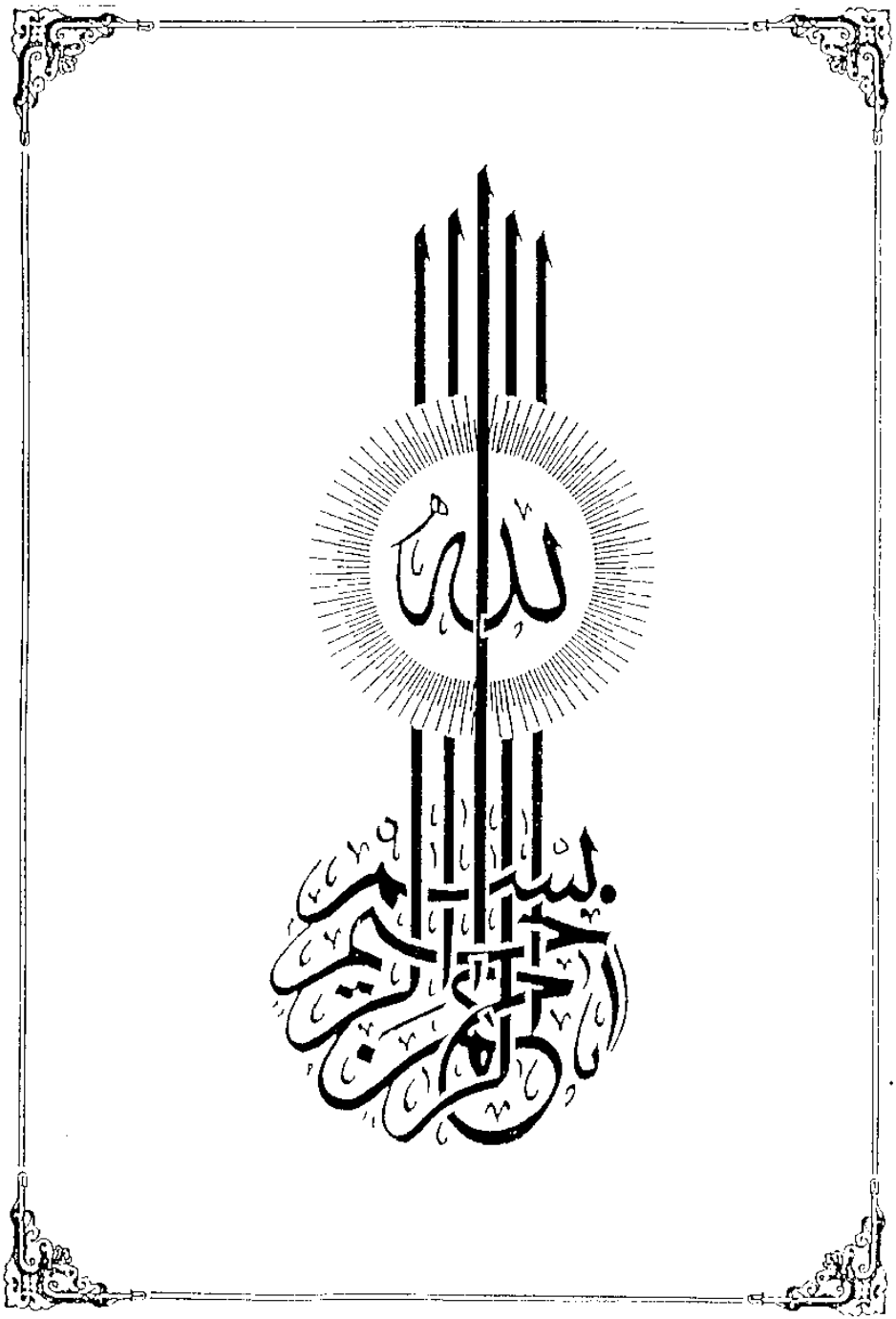
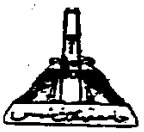
**1996**





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بسم الله الرحمن الرحيم

" يَمَعْشَرَ الجِنِّ والإنسِ إنِ إستطعتم أن تنفذوا من أقطار السموات والأرضِ فَانفُذُوا لا تَنفُذُونَ إلا بسُلطانٍ . فبأىِّ ءَالاء رَبِّكُمَا تُكَذِّبَان. "

صدق الله العظيم

( سورة الرحمن الآية ٣٢ - ٣٤ )

I declare that this thesis has been composed by my self and the work of which it is a record has been done by my self. It has not been submitted for at this or any other university.

**Eman Roshdy Mahfouz ABD-EL Rahman**

# *DEDICATION*

***TO***
***MY PARENTS***
*TO WHOM ALL THE CREDIT RIGHTLY GOES*
***AND TO MY BROTHER***

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Arabic Summary
Arabic Abstract

# ABSTRACT

**Eman Roshdy Mahfouz**. On Determination of syntenic Groups in the Egyptian Water Buffalo Using DNA Probes. Unpublished Master Thesis. Ain Shams University, Faculty of Science, Biochemistry Department, 1996.

The cosegregation of ten structural gene loci was investigated in a panel of 37 somatic cell hybrids, obtained from the fusion of Egyptian water buffalo (river buffalo) blood lymphocytes and cells from Chinese hamster cell line (wg3h) deficient in hypoxanthine phosphoribosyl transferase (HPRT). DNA probes, representing the genes under study, were used to screen the hybrid clones for hybridization using the Southern method. Five syntenic groups, TCRB-PGY3; ASS-ABL; FUCA1P-CRYG; MBP-YES1 and CGN1-ACTA1, previously assigned to cattle syntenic groups U13, U16, U17, U28 and U29 respectively, were also found to be syntenic in buffalo. Based on the extensive syntenic conservation and banding homology between cattle and river buffalo, comparative mapping predicts the localization of these syntenic groups on buffalo chromosomes BBU7, BBU12, BBU2q, BBU22 & BBU4p respectively as they have been previously localized on cattle chromosomes BTA4, BTA11, BTA2, BTA24 & BTA28.

**Key Words**: River buffalo - Cattle - Syntenic Conservation- DNA Probes - Hybridization.