

DECLARATION

I declare that this research is my own work and it has not been submitted to any other University for any kind of degree.

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ABSTRACT

The ABO system was the first to be recognized and remain the most important. Kell is one of the important blood group system on human erythrocyte. This study was aimed at determining the frequency of Kell-1 and Kell-2 phenotypes in Arrakien population.

The study was carried out in 100 predetermined random samples; from Arrakien tribe and the grand father has one chance to be included in the study. Samples were tested for the presence of ABO using slide method and for K1 and K2 using ID- Gel Micro typing system which contain coated anti- K1 and anti-K2 antisera.

The samples were collected from Tyba Elshekh Abdalbagi and Abu Haraz areas. Result was showing that: The frequency of ABO , A blood group was found to be 30%, B was 27%, O was 39% and AB was found to be 4%. Kell-1 was found to be 2%, while Kell-2 was found to be 98%.

The conclusion of the study was that: The frequencies of ABO was found to be close to that found in people from African race(Nairobi and Nigerian populations) and far from that found in United states and Mexico populations. The frequency for Kell 1 in the Arrakien population was found to be close to that found in Blacks of United states populations and Negroes of Brazil ,and it was far away from that found in Arabian and English populations, and Kell-2 was found close to the studies that done to Pakistani and English populations.

الخلاصة

. نظام ABO هو اول نظام تم اكتشافه ومازال هو النظام الالهم .
تعتبر فصيلة الدم من النوع Kell واحدةً من فصائل الدم المهمة التي توجد داخل الكريات الحمراء في دم الإنسان .
هدفت هذه الدراسة إلى تحديد نسبة وجود انتجيزات هذه الفصيلة من النوع ABO و Kell-1 و Kell-2 في قبيلة العركيين .
تم جمع العينات من مائه شخص من قبيلة العركي من منطقة طيبة الشيخ عبد الباقي وأبو حراز بحيث يمثل الجد بفرصة واحدة في الدراسة .
وقد تم اختبار كل العينات , ABO بـ slide method و Kell بطريقة الجل (-ID- MICROTYPING SYSTEM) وهى تحتوى على الأجسام المضادة لكل من Kell-1 و Kell-2 .
وقد خلصت هذه الدراسة إلى أن نسبة فصيلة الدم من النوع ABO اقرب للدراسات التى اجريت للجنسيات الافريقية من نيروبي ونيجريا, وابعد من تلك الدراسات التى اجريت فى الولايات المتحدة والمكسيك. و نسبة فصيلة الدم من النوع Kell-1 فى قبيلة العركيين اقرب الى النسبة التى وجدت عند السود فى الولايات المتحدة الامريكية والزواج البرازيليون. وابعد من تلك الدراسات التى اجريت للعناصر العربية والانجليزية. و نسبة فصيلة الدم من النوع Kell-2 فى قبيلة العركيين اقرب لتلك الدراسات التى اجريت للباكستانيين والانجليز.

DEDICATION

To the heart of my life, my parents. To my brothers and sisters, to my teachers and colleagues. I dedicate this work.

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List of Abbreviations

Abbreviation	Meaning
HDN	Hemolytic disease of the newborn
KD	Kilo Dalton
K-1	Kell-1
Rh	Rhesus
USA	United State of America
EDTA	Ethyle diamine tetra acetic acid

SPSS	Statistical Package for Social Sciences
mRNA	messenger Ribo nucleic Acid
UK	United Kingdoms
IgM	Immunoglobulin M
Fuc	Fucose
Gal	Galactose
DNA	Deoxyribonucleic acid
WK	Weeks
NEP	Neutralendopeptidase
PCR	Polymerase chain reaction
cDNA	Cytoplasmic Deoxyribonucleic acid
K _o	Kell null
CGD	Chronic granulomatus disease
RBCs	Red blood cells
LISS	Low ionic strength solution
IAT	Indirect antiglobulin test
C	Cytosine
T	Thymine
ID	Immunodiffusion
HBsAg	Hepatitis B surface Antigen
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
CPD-A	Citrate phosphate dextrose- adenine