



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Ain Shams University Information Network
جامعة عين شمس

شبكة المعلومات الجامعية

@ ASUNET



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغييرات



يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of
15-25- c and relative humidity 20-40%

بعض الوثائق الأصلية تالفة



بالرسالة صفحات نم ترد بالاصل

**PREVALENCE OF β -THALASSAEMIA
CARRIERS IN BENI-SUEF**

ΣΣΚ 908

Thesis
Submitted in Partial Fulfillment
Of the Requirement of M.D. Degree in
Paediatrics

By
Hassan Abd Al Mohsen Gumma

Supervised by

Prof. Dr. Hassan Fathy Naguib
*Prof. and Head of Paediatric Department
Faculty of Medicine,
Beni-Suef University*

Prof. Dr. Amal El Beshlawy
*Professor of Paediatrics
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Prof. Dr. Azza Mostafa
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Prof. Dr. Samira Zein
*Professor of Paediatrics
Faculty of Medicine,
El Menia University*

**FACULTY OF MEDICINE
EL-MENIA UNIVERSITY
2000**

[Handwritten signatures and scribbles]

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*Al-Fathiha, or the
Opening Chapter.*

1. In the name of Allah,
Most Gracious, Most
Merciful
2. Praise be to Allah
The Cherisher and
Sustainer of the
Worlds:
3. Most Gracious, Most
Merciful;
4. Master of the Day of
Judgment.
5. Thee do we worship,
And Thine aid we
seek.
6. Show us the straight
way,
7. The way of those on
whom Thou has
bestowed thy Grace,
Those whose
(portion) Is not wrath.
And who go not
astray.

﴿سورة الفاتحة﴾

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ^(١)

الْحَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ^(٢)

الرَّحْمَنِ الرَّحِيمِ^(٣)

مَلِكِ يَوْمِ الدِّينِ^(٤)

إِيَّاكَ نَعْبُدُ وَإِيَّاكَ نَسْتَعِينُ^(٥)

اهْدِنَا الصِّرَاطَ الْمُسْتَقِيمَ^(٦)

صِرَاطَ الَّذِينَ أَنْعَمْتَ عَلَيْهِمْ غَيْرِ

الْمَغضُوبِ عَلَيْهِمْ وَلَا الضَّالِّينَ^(٧)

صدق الله العظيم

Dedication

*To The Spirit of
My Mother and Father
For such the reward is
forgiveness from their lord*

The study of the blood has a long history. Human kind probably always has been interested in the blood because it is likely that even primitive peoples realized that loss of blood, if sufficiently great, was associated with death. In biblical references to shed blood meant to kill (Wintrobe, 1980).

Acknowledgement

In the name of **ALLAH**, most gracious, most merciful.

Praise be to **ALLAH**, the Cherisher and sustainer of the world, and may peace and blessings be upon the seal of the **Prophets** **Muhammad**. May peace and blessings of **ALLAH** be upon him, his family and all his companions.

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Finally, I like to thank the patients and their family members who participated in this work.

ABBREVIATIONS

| | |
|------------------|--|
| α | Alpha |
| β | Beta |
| δ | Delta |
| ϵ | Epsilon |
| γ | Gamma |
| ξ | Zeta |
| μ l | microliter |
| μ l | Ultraviolet |
| $\text{A}\gamma$ | Gamma chain with alanine at position (136 polypeptide chain) |
| aa | Amino acid |
| AG | Adenine-Guanine |
| AIDS | Acquired immune deficiency syndrome |
| ARMS | Amplification refractory mutation system |
| ASO | Alle specific oligonucleotide |
| ATA | Adenine-thymine adenine |
| BMT | Bone marrow transplantation. |
| BTT | Beta-thalassaemia trait. |
| bp | Base pair |
| C | Cytosine |
| CAP | Catabolite activator protein |
| CV-S | Chronic villus sampling |
| DF | Desferioxamine |
| DNA | Deoxy nucleic acid |
| EDTA | Ethyline diamine tetra acetate |
| Glu | Glutamine |
| Gly | Glycine |
| Gm/dl | gram/decilitre ($d=10^{-1}$) |
| Hb | Haemoglobin |
| HbA | Adult haemoglobin |

| | |
|------------------------|--|
| HbA₂ | Haemoglobin A ₂ |
| HbCS | Haemoglobin constant spring |
| HbF | Foetal haemoglobin |
| HCT | Haematocrit |
| HPFH | Hereditary persistence of foetal haemoglobin |
| IVS | Intervening segment |
| IDA | Iron deficiency anaemia |
| Kb | Kilobase |
| KD | Kilo Dalton |
| LCR | Locus control region |
| Leu | Leucine |
| Lys | Lysine |
| MCHC | Mean corpuscular haemoglobin concentration |
| MCV | Mean cell volume |
| MCH | Mean corpuscular haemoglobin |
| mRNA | messenger ribonucleic acid |
| PCR | Polymerase chain reaction |
| pg | Picogram (=10 ⁻⁹) |
| pg/ml | picogram/millilitre |
| RBCs | Red blood cells |
| RFLP | Restriction fragment length polymorphism |
| RNA | Ribonucleic acid |
| SI | Serum iron |
| SSCP | Single strand conformation polymorphism |
| thal. | Thalassaemia |
| TIBC | Total iron binding capacity |
| Transf. sat. | Transferrin saturation. |
| tRNA | Transfer ribonucleic acid |
| U | Unit |
| WHO | World Health Organization |