RED BLOOD CELL SUBSTITUTES

ESSAY
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By

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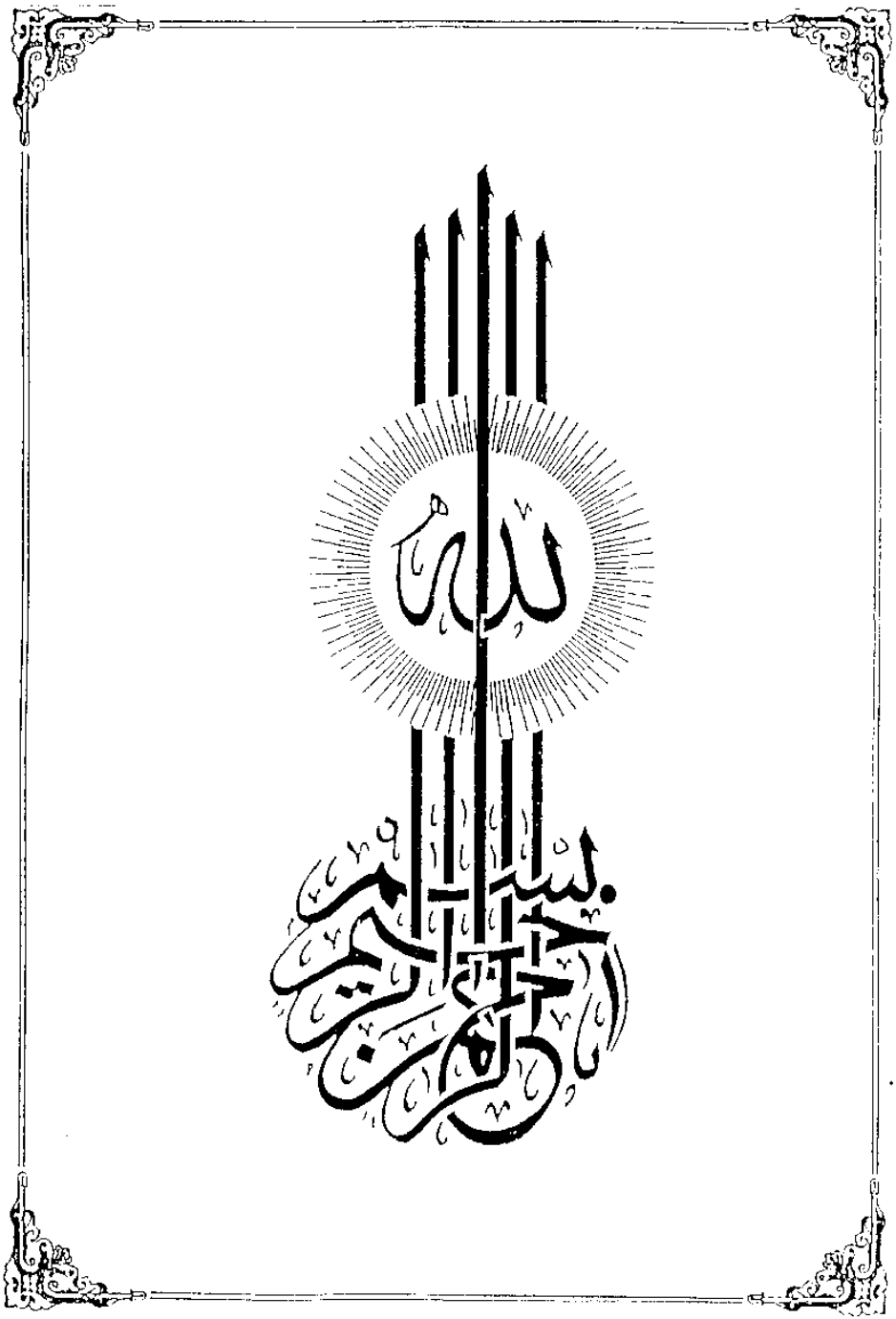

بسم الله الرحمن الرحيم

﴿قالوا سبحانك لا علم لنا الا ما
علمتنا إنك انت العليم الحكيم﴾

صدق الله العظيم

(سورة البقرة آيه ٣٢)

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Ghada Ali Hassan

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LIST OF ABBREVIATIONS

Abbreviation	*Item*
AIDS	Acquired Immune Deficiency Syndrome
AIHA	Autoimmune Hemolytic Anemias
A^o	Angstrom
ARDS	Adult Respiratory Distress Syndrome
Arg	Arginine
Asn	Aspargin
ATP	Adenosine Triphosphate
BP	Barometric Pressure
2,3 BPG	2,3 Biphosphoglycerate
$CaCO_2$	Arterial Carbon Dioxide Tension
CaO_2	Arterial Oxygen Content
CMV	Cytomegalo Virus
CvO_2	Venous Oxygen Content
DBBF	bis-3,5 Dibromosalicyl Fumarate
DHTR	Delayed Hemolytic Transfusion Reaction
DIC	Disseminated Intravascular Coagulation
DMB	Diffuse Microvascular Bleeding
DNA	Deoxyribonucleic Acid
2,3 DPG	2,3 Diphosphoglycerate
FDA	Food and Drug Administration
FIO_2	Fraction Inspired Oxygen
FL-DA	Flusol-DA
GvHD	Graft versus Host Disease
Hb	Hemoglobin
HbA	Adult Hemoglobin
HbF	Fetal Hemoglobin
HBV	Hepatitis B Virus

The development of artificial sources for blood has b subject of scientific research for many decades. The r advantages being sought are increased safety (no infec disease transmission), increased availability of the produc blood shortages or public appeals for donors), stable and oxygen - carrying capacity, and no need to perform compati testing or even ABO / Rh typing prior to transfusion ***(Wins 1995).***

Work is being done using two different approache solve this problem. Hemoglobin solutions and perfluorocher emulsions are the two products that have been most extensi evaluated ***(Gould et al., 1996).***

The most important functions of a red blood cell subst are to transport oxygen and carbon dioxide effectively an support circulatory dynamics ***(Gould et al., 1996).***

More recently, recombinant-DNA techniques have enal production of human hemoglobin in host expression systems, progress is being made towards the creation of a genetic engineered molecule incorporating the properties required blood substitute ***(Ogden, 1992).***

A recombinant - based hemoglobin product that cont the best features found in these research focus may be the answer at some time in the FUTURE. Clearly the advantage an artificial product make the search well worthwhile ***(Winsl 1995).***

PHYSIOLOGY OF OXYGEN CARRIAGE