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REPORT ON SCIENTIFIC VISIT.

Introduction

I wish to thank you for awarding me the prestigious IFCC Professional Scientific Exchange Programme Fellowship for the duration of two months. I visited the Department of Clinical Chemistry, Ghent University, Gent, Belgium. My host was Prof Dr JR. Delanghe. I worked in his laboratory during the period Dec 5, 1999 to Jan 28, 2000. Prof Delanghe was very supportive and his staff was very helpful. I received practical and theoretical training in the following plasma protein separation techniques:

- starch gel electrophoresis
- polyacrylamide gel electrophoresis, PAGE
- high performance gel permeation chromatography
- capillary zone electrophoresis
- isoelectric focussing, IEF

After learning these techniques I was able to analyse 700 serum samples for transferrin and hemopexin polymorphism. These serum samples were obtained from subjects enrolled in an ongoing study on African iron overload, by the Iron Metabolism Unit, Department of Medicine, University of Zimbabwe, Harare, Zimbabwe. Through Prof Delanghe's efforts, I was able to secure a student's room near the university campus. The subsistence allowance I received was adequate. As per requirements of the Programme, I have enclosed, a summary of my activities for publication in JIFCC and on the IFCC home-page.

I feel greatly honoured to have been awarded the IFCC Professional Scientific Exchange Programme Fellowship. I visited the Department of Clinical Chemistry, Ghent University, Gent, Belgium for two months (Dec 1999 - Jan 2000). The purpose of my visit was to learn newer separation techniques of plasma proteins, mainly

electrophoresis and chromatography. Knowledge of these techniques is essential for the preparation of my PhD. thesis and more importantly, in the ongoing investigation on possible genetic aetiology of African iron overload.

African iron overload, distinct from the HLA-linked hemochromatosis described in Caucasians, has been recognised in the Bantu population of sub-Saharan Africa for 70 years. The prevalence of iron overload in this region is the highest in the world, with reports that up to 10% of some rural populations are affected. Clinical manifestations of the African iron overload are a result of organ damage due to iron toxicity in several organs mainly the liver, the pancreas and the mononuclear phagocytic system. This entity results in (1) liver cirrhosis and hepatocellular carcinoma; (2) diabetes and (3) increased incidence and worse outcome of several infections, such as tuberculosis and HIV.

African iron overload has been attributed to excessive dietary iron intake due to the consumption of a traditional alcoholic beverage rich in bioavailable iron. Recently, evidence of possible genetic aetiology has been published. In the black population, plasma glycoproteins involved in iron metabolism (haptoglobin, transferrin and hemopexin) are characterised by real genetic polymorphism. My research interest is the significance of haptoglobin, transferrin and hemopexin polymorphisms on iron status in an African population at risk of African iron overload.

The immediate benefit of my training is the preparation of my PhD thesis. I have completed writing a manuscript and have started on a second one. The benefits to my country is the long-lasting skills development. I can use the skills I have acquired on the ongoing research on the pathogenesis of African iron overload.

As a beneficiary of the IFCC Scientific Exchange Programme, I believe the programme has noble objectives. The programme provided me with an

excellent opportunity to learn new technologies in the study of plasma proteins. It also provided me with the opportunity to interact at an international level with other scientists working in the field of clinical significance of genetic variation of plasma proteins. As a result, future collaborative research projects are envisaged.

I hope the programme will continue to be extended to other young scientists working in less-privileged laboratories in developing countries.

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