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Distribution of AMY2 Polymorphism in S. Tomé and Príncipe (West Africa)

The genetic polymorphism of AMY2 was studied in the population of S. Tomé and Príncipe (West Africa) using agarose gel electrophoresis. AMY2 frequencies are reported for the first time in a subSaharian population. The gene frequencies found were: AMY2*1=0.948, AMY2*3=0.052 (N=173).

Key Words: Pancreatic Amylase. AMY2. Population study. S. Tomé and Príncipe.

Introduction

The genetic polymorphism of pancreatic amylase (AMY2; μ-1-4-glucan 4-glucano hydrolase; EC 3.2.1.1) was first described by Kamarýt and Laxová (1965). Heterogeneity of AMY2 phenotypes has been reported in various populations using electrophoretic techniques (Harris and Hopkinson, 1976; Merrit et al. 1973; Carfagna et al. 1976; Rosemblum and Merrit, 1978).

Kömpf et al. (1979) described two common alleles (AMY2*1 and AMY2*2) and two rare alleles (AMY2*3 and AMY2*4) at an autosomal locus (AMY2) using human serum and plasma from individuals of Southwestern Germany. Since then, little data concerning AMY2 polymorphism have been reported (Amorim, 1983; Zarinah et al. 1984; Caeiro, 1987; Manco et al. 1993; Goedde et al. 1995).

S. Tomé and Príncipe is a small country in the Guine Golf (West Africa) including two main islands. The origin of population is on West Africa since the occupation of the Archipelago by Portugal in the XVth century. In this study, we report the occurrence of electrophoretic polymorphism of AMY2 in the population of S. Tomé and Príncipe.

Materials and Methods

EDTA-plasma was obtained from venous blood from 173 unrelated healthy adults of both sexes. Samples were stored at -20°C until analysis.

AMY2 phenotyping was performed by agarose gel electrophoresis using a continuous Tris-HCl buffer system at a pH=7.6 according to Kömpf et al. (1979) with minor modifications. Bridge buffer was Tris 0.083M and HCl 0.05M, pH=7.6; the gel buffer was 1:1 dilution of the bridge buffer. Electrophoresis was performed at 10°C in a agarose gel