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EVALUATION OF THE IMMUNITY AND METABOLIC CHANGES IN THE MEMBERS OF THE ROMANIAN ANTARCTIC EXPEDITION, 2006

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The purpose of our project is to evaluate the metabolic and immunologic changes in the members of the Romanian expedition at Law-Racovita Base, Larsemann Hills, East Antarctica, during 31.12.2005-14.03.2006. This paper covers the metabolic results obtained during the team transport over the Indian Ocean on board of “Xue Long” Chinese ship and on the Antarctic continent (04.01.2005 – 05.02.2006).

The relevant immunologic and metabolic tests were performed on three subjects: Subject no.1 – 59 years old (man); Subject 2 – 51 years old and Subject 3 – 37 years old (both women). The values of blood pressure and heart beat were regularly measured during the transport over the ocean and the activities at the Law-Racovita Base, as well as at rest. The electro-cardiogram profiles were recorded. Blood samples were taken in various situations, on the ship and in Antarctica, in view of subsequent immunological analyses performed in Romania.

During the transport by sea, the blood pressure values increased: in subject 1, from 130/85 to 158/106 mm Hg in days 1-2 and 147/94 mm Hg in days 3-9; in subject 2, from 120/75 to 127-142/75-81 in days 2-5; in subject 3, from 120/80 to 170/103 in days 1-3 and 138/92 mm Hg in days 4-5. The heart beat values increased in subject 1 from 78 to 90/min in days 1-2 and in subject 3 from 76 to 93 in days 3-5. Subject 2 shown insignificant variations as against the initial value (60/min). Subjects 1 and 2 suffered during the ocean storms from vomiting, and subject 3 from frequent headaches since the embarkment.

During the activities at the Law-Racovita base, the blood pressure increased in the first days in subjects 1 and 2. In subject 3 the respective increases were minor until the 20^{th} day when the values anomalously increased from 120/82 to 168/111 mm Hg due to a maladaptation to isolation conditions. The heart beat values were in all subjects higher in Antarctica than on the ocean. In subject 3 they increased, at rest, from 76 to 100 in day 7 and to 136 in days 20-23, confirming a maladaptation state also put into evidence by the electro-cardiogram.

The metabolic results will be correlated with the immunological analyses.