

Biologically Active Components (BAC) in Monazite Beach Sands - Radon Climatic Thalasso SPA Town, Guarapari/BRA.

W. De Prá

FAPES, Vitória, Brazil.

F. T. Lazzerini

OMTh, Levico Terme, Italy and UFES, Vitória, Brazil.

M. T. D. Orlando

UFES, Vitória, Brazil

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Introduction

The sands emit radiation and gases emanations, such as radon (^{222}Rn) and thoron (^{220}Rn) in various beaches sites, for example: India, China, Iran, Egypt and Brazil. Being the knowledge of their physical attributes and dimensions important set to the medical geography, like monitoring and enforcing their positive or negative biological activities to the human health.

This starting project seeks to precise measures: ^{222}Rn , ^{220}Rn , emitting α , β and γ radiations, as well as negative air ions from surrounding environments or aqueous solutions; either natural and artificially produced indoor medium. Such reasons, mainly focusing for future approaches in towards epidemiological research, drug testing laboratories, physiological observatories and clinical trials for various medicine indications.

Selected target places are Areia Preta Beach (Figure 1) and others nearby with black sand evidence. Were distinct sea level (2.0, 0.2; 0.0 and -0.2 m); on several sand coloring tracks, different day times, seasons, weathers (raining or sunny), site coast distances (10, 50, 100, 500 and 1000 m) or seawater deep (surface, 0.5 and 1.5 m). To the indoor places will be separated distinct pure monazite grain parts, put into sachets waterproof package for placement at the bottom of bathtubs, were are controlled water and air flows, temperature and physical chemistry conditions. To this case, applying equipment: thermometer, pHmeter, meteorological station-nexus 351075, portable meter negative air ions-tec-wp90, UV meter-011369, spray chamber-u8483220, real-time radioactivity-gamma scout and others consulting experts services.



Figure 1. Guarapari Areia Preta Beach - Monazite Sand views.

Resulting initial bibliographic meta-analysis indicate good correlation with the hormesis theory, where the Guarapari city epidemiological viewpoint has a population diseases incidences significantly below to this Brazilian province (Espírito Santo) and national total average statistic related to neoplasms (tumors at all ages), blood erythrocytes diseases, immune disorders, dermatitis, musculoskeletal and connective tissue problems (BRAZIL-SIH/SUS, 2010). Another relevant observation is the recent similar finding by other countries studies with such endowment events, targeting therapeutic applications also called like complementary and alternative medicine – CAM (SPA therapy, psammotherapy, crenotherapy, hydrotherapy, naturopathy).

Conclusions

At this initial moment, these activities demonstrate potential good scientific and technical issues to therapeutic applications of these natural resources; include assisting the local community well-being and Brazilian health coast tourism sector (tropical thalassotherapy). Expecting to promote the sustainable development across this rare natural heritage at the first radium climate ranch in Americas.