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## Personalized medicine approach for the selection of effective therapy of severe drug resistant tuberculosis

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Fully treatable tuberculosis with isoniazid and rifampicin has progressed to multi-drug resistant tuberculosis (MDR TB) and to increasingly more severe status of drug resistance extensively drug resistant (XDR). Most recently, totally drug resistant (TDR) tuberculosis has arisen in India in large numbers. Although the threat to global health is real and worrisome, the development of laboratory programs that fully characterize the infecting *Mycobacterium tuberculosis* strain for virulence, antibiotic susceptibility to first, second and promising drugs, over-expressed efflux pumps, the effectiveness of the patient's macrophage for enhanced ex vivo killing of the clinical isolate by adjuvant drugs and the determination of drug sensitive latency of the isolate are components of the recommender programme that will be discussed in detail.

### Biography

Leonard Amaral, MD, PhD is currently Professor Emeritus of the Department of Travel Medicine of the Center for Malaria & Tropical Diseases (CMDT), Institute of Hygiene & Tropical Medicine (IHMT) of the Universidade Nova de Lisboa (UNL), Lisbon, Portugal. Prior to this he was the Professor of Microbiology and Director of Mycobacteriology of the IHMT/UNL, Lisbon, Portugal (1999-2010); Director of Laboratories of the Bronx-Lebanon Hospital Center, Bronx New York (1977-1996); Assistant Director of Pathology, The Methodist Hospital of Brooklyn/School of Medicine of the State University of New York, Brooklyn, New York (1968-1977). He is the author of over 250 papers in microbiology, cancer and immunology and cited almost 5000 times by prominent research scientists in medical research. His current interests are in drug development for therapy of severely drug resistant tuberculosis and multi-drug resistant cancer. He is internationally recognized for his pioneering work on the control and regulation of efflux pumps of multi-drug resistant bacteria.

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