Interview: Hechmi Louzir – Director General, Institut Pasteur in Tunis, Tunisia



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11.10.2017

Tags: Tunisia, Institut Pasteur, Healthcare, Research, Vaccines, Biotech

Hechmi Louzir, general manager of the Institut Pasteur in Tunis (IPT), details the crucial role that the IPT plays in the development of the Tunisian health sector, his wide-ranging responsibilities as general manager, the increasing importance of building new partnerships between the private and public sectors, and the Institute's ambition to accelerate the development of biotechnology in Tunisia.

Could you introduce yourself to our readers as well as the Institut Pasteur in Tunisia?

I am a professor of medicine, specialist in immunology, and work at the Faculty of Medicine of Tunis / Tunis El Manar University. I am also general manager of the Institut Pasteur in Tunisia (IPT), and coordinator of the International Network of Institut Pasteur in Maghreb and Iran. Over the course of my career, I have had the opportunity to visit many foreign universities and research centers in the United States and Europe. These experiences have allowed me to gradually broaden the scope of my expertise, which now extends to health research, biotechnology and organizational development.

There are currently 33 Institut Pasteurs throughout the world. The first was founded in Paris in 1895 and the most recent was set up in 2016 in Guinea as a result of the Ebola crisis. The IPT was the third of its kind to be established. Historically, the Institut Pasteur is specialized in the development of vaccines, and the first of these was – of course – the rabies vaccine. The history of

the IPT was notably marked by the passage of Charles Nicolle, who made great discoveries in Tunis, especially the one relating to the transmission of typhus by the louse, which earned him the Nobel Prize in Medicine in 1928. Since its inception, the IPT has enjoyed an international reputation that greatly benefits the development of its activities.

What are IPT's missions?

Currently, our missions are of four types. First we have a public health mission, especially the diagnosis of communicable diseases, with the help of national and international reference centers. Second, we conduct research and development. Moreover, the IPT is the first research structure in the country and might be the largest research center of all disciplines. We have indeed, nine certified laboratories that benefit from the international collaboration network, including those of the Institut Pasteur.

Third, the IPT engages in the training of future scientists. In light of our ties with the University of Tunis El Manar, we collaborate on the supervision of over 250 students, either PhDs or Masters, in the fields of biology and organize multiple international courses. It must be highlighted the IPT was recently selected to host the Regional Training Center (RTC) for the regional world health organization EMRO.

Last, we focus on the production of vaccines and serums for the country. In Tunisia we produce two types of vaccines: one for tuberculosis, and the other used for treating bladder tumors. Additionally, we also produce three therapeutic serums, the antirabies serum, the antiscorpionic serum, and the antiviperine serum, which we have carefully adapted to the most common species in Tunisia. Generally speaking, these five vaccines are used in the Ministry of Health's national campaigns.

How does the IPT fit into the ecosystem of other institutes around the world?

Institut Pasteur can be of three different types. The first is that of a foundation recognized of public utility; this is the case, for example, with the Institut Pasteur in Paris. Some Pasteur Institutes, such as those in Madagascar, Guyana or Guadeloupe, depend directly on the Institut Pasteur in Paris.

Second, institutes can be joint-ventures between the Institut Pasteur in Paris and a local academy or university. This is the case of the Institut Pasteur of Shanghai (China).

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Last, independent institutes are the most widespread. They are usually under the tutelage of health ministries in their respective countries, such as the IPT. Other research iInstitutes are affiliated to the Institut Pasteur network but do not carry the name Pasteur. This is the case of the Armand Frappier Institute in Canada or the Oswaldo Cruz Institute in Brazil for example. All these institutes, despite their diversity, have decided to join the Institut Pasteur International Network. This network, of which the IPT is a part, shares a charter of values for the improvement of global health and develops international research and training programs.

What have been the major projects of IPT since you took office ten years ago?

The Institut Pasteur wishes to be one of the contributors to the development of Tunisia, particularly in the field of health. After a visit to the Institut Pasteur in Paris, I joined the Institut Pasteur in Tunis in 1988 and have been running it for more than ten years. I have continued to serve the Institut Pasteur's network in accordance with its values, which include knowledge sharing in order to foster the development of science.

In Tunisia, as in many countries in the region, the structure of our actions needs to be improved, especially valuation. With regards to this framework, a communication, valorization and technology transfer unit was created within the IPT. This unit is responsible for knowledge transfer, resource-sharing facilitation, fund raising at an international level and for the development of strategies to diversify research revenues. Additionally, this unit is also responsible for the contractual relationship we have with various academic and industrial partners. Convincing the governing bodies of the value of such an initiative for a research and development structure is difficult.

We are one of the major partners of the European Union's 'Horizon 2020' program with six projects ongoing correspond to the near entirety of the Health programs in Tunisia that are financed for the purposes of the 'Horizon 2020' program. This has led the European commissary for research, Carlos Moedas, to visit IPT's offices.

We have also intensified our collaboration with the University of Tunis El Manar. Furthermore, as we collaborate to train the university's students, we make sure they are also trained in skills that could be useful for them in the course of their professional career.

We have also focused our attention on the development of biotechnologies. We are aware and convinced that biotechnologies are one of the aspects that Tunisia can leverage upon to develop socially and economically. We have contributed to the creation of the Sidi Thabet Science Park dedicated to biotechnologies and health as well as in the case of partnerships with the industrial sector.

Finally, we have devoted tremendous efforts and progressed in mastering new genomic, transcriptomics, proteomics, bioinformatics and genome analysis technologies. All this is done within the framework of a strategy for strengthening “translational” research and clinical research, including therapeutic trials, so that our research can benefit patients as quickly as possible.

How has the IPT contributed to improvements in Tunisia’s epidemiological?

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Tunisia has been a pioneer in the generalization of its population’s vaccination coverage. Not all vaccines are necessarily part of the national plan, but these plans have allowed the eradication of many diseases within a few decades. For example, there is no more malaria. Trachoma, an eye disease that causes blindness, has been eradicated. The prevalence of tuberculosis in Tunisia is similar to that of developed countries, thanks to the BCG vaccine produced by IPT. Poliomyelitis has not existed in the country since the 1990s. The government’s efforts are contiguous, and it is not over: there are still campaigns to drastically reduce diseases such as measles or hepatitis. IPT has been, and continues to be, a key player in these public health programs.

How is Tunisia perceived in terms of research and development?

Until recently Tunisia was among the leading countries in Africa and the Middle East. Around one per cent of Tunisian GDP was bestowed to scientific research. With this in mind, I feel that things could have evolved more favorably. Unfortunately, as a result of the country’s unfavorable economic conditions, the budget allocated to research since 2016 only represents 0.6 percent of GDP. Nevertheless, compared to the population, the number of Tunisian scientific publications far exceeds that of all the other countries of the Middle East and Africa.

I believe that research could contribute more efficiently to economic development if the government supported financially researchers and new research professions. Particularly through the medium of accompanying measures that cover the aspects relating to projects tenders, valorization, technology transfer and communication. It is of the foremost importance our needs are supported by the government because our country has fundamental potential which should not be wasted. Quite the opposite, if nothing is set into place to support research our capabilities might find themselves seriously affected. Material investments are easy to replace provided on has the financial resources to cover it. On the contrary, if we came to lose our proficient scientists, it could take multiple generations to train them and we are on the brink of seeing this happen to us.

How does the IPT ensure this message is transmitted?

A number of my colleagues and I, regularly take part in the major works and strategies developed by our health and higher education and scientific research departments. We continuously strive to contribute, through our experiences and our vision, to strengthening systems and aiming for excellence.

The importance of the additional wealth created by scientific research in health can be demonstrated straightforwardly. More specifically, holistic analyses, measure the impact of a medical innovation on the country as a whole. In the case of medical innovation, all agents from the sector forecast biotechnologies such as monoclonal antibodies, growth factors and other similar bio, will constitute more than 50% of the turnover of medicines by 2025. Tunisia ability to control this sector is of paramount importance. It will favor access to these types of medication and help Tunisia create wealth. In fact, IPT is currently collaboration with international organizations in these regards. Additionally, our partnerships concern the development of products derived from biotechnologies. It is of the foremost importance public authorities understand that the health of citizens depends on the development of medical products and therefore it is a crucial topic.

What about the development of biotech products in Tunisia?

Almost all pharmaceutical companies in the country are involved in the production of generic chemicals, and only two or three companies are involved in the production of biotech products. In fact, this activity consists in importing the so-called “bulk”, the Tunisian companies then do the formulation and distribute. These activities constitute a preliminary stage to the mastery of biotechnologies. The plus-value is found in production (bio-production). Although the Sidi Thabet science park is also involved in a couple of bio production, The IPT is the only body advanced in this domain. Unfortunately, political will is not yet strong enough in this area. I hope that in a short time more investors will support biotechnology projects, especially since Tunisia has the necessary resources to succeed in high added-value sectors.

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