OTRI or how to capitalize the investment of talent and resources of the academic centers

21/03/2018

The OTRIs are intermediaries in the science-technology-enterprise system, and their mission is to boost relations among the agents of the system

The Office of **Transfer of Results and Research** (OTRI) of the CNIC is responsible for ensuring the diffusion of scientific and technological advances generated by the center to a greater number of users who can evaluate their interest in developing these technological advances to generate new products, processes, applications and services. The OTRIs are intermediaries in the science-technology-enterprise system, and their mission is to boost relations among the agents of the system, explains Noelia López Martín, in charge of the office at the CNIC. For this, "the OTRI are in charge of identifying the technological needs of the socioeconomic sectors and to improve the transfer of knowledge between the public and private sectors, thus contributing to the application and commercialization of the results of the R & D generated in the universities and public research centers." The OTRI concept is not something new. The OTRI originated at the end of 1988 as structures to encourage and facilitate cooperation in R & D activities between researchers and companies, both in the national and European framework. The first offices designed to bring research results together emerged in Spain 30 years ago, although originally they were in charge of national and international calls to finance projects.

With the passage of time, the Public Administration "understands that the resources invested in research - public financing - can have an economic 'return' that allows for the continuation of investing in projects, hiring people and mobilizing the surrounding economy. In the end, it is about 'giving value' to the results obtained in the research and marketing them, "says Noelia López. **The main function of the public sector is knowledge in R & D, while the marketing of such knowledge is, to a large extent, the responsibility of the companies**. The paradox is that the main source of knowledge is the academic world. The question is how you can capitalize the investment in talent and resources that is done in the academic centers and use those results for the benefit of society. **The answer is the OTRI.**

Duties of the OTRI:

- Detection and evaluation of innovative technologies that can be exploited commercially. "It's about identifying ideas in the CNIC that have the potential to be commercialized and be used to treat and diagnose any disease," clarifies Noelia López. In the case of the CNIC, she explains, it is important to know all the laboratories and technical units of the CNIC and their research areas to identify which lines of work could be susceptible to transfer. Also through internal training at the CNIC we make it so that it is the researchers themselves who come to the OTRI with ideas that can be transferred.
- Assessment of the maturity of the technology and the potential industrial interest.
- Fiinancing, management and protection of the intellectual property of the CNIC through patents and other intellectual property rights. The objective is to study the idea from a technical, economic viability point of view (if there is financing), if it can be protected by intellectual property right, to study the market.
- Searching for the status of the technique in scientific article databases and patents.
- Promotion and dissemination of the research activities and results of the CNIC, through platforms of offer/demand and attending the partnering / brokerage events.
- Identify commercial license opportunities for the CNIC's Technological Offers portfolio.
- Negotiate terms and conditions of licensing contracts.
- Transfer of technology through entrepreneurship: creation of spin-offs.
- Promotion of collaboration agreements between researchers and local, national and international industry, and, follow-up of private R & D projects.
- Negotiation, management and follow-up of material transfer agreements (MTA) and Confidentiality Agreements (CDA).

The OTRI of the CNIC, directed by **Enrique Lara**, works closely with a prestigious patent agency for advice on intellectual property rights and counts on the legal advice of an international firm specialized in this field. Noelia explains that a patent application is "a very good negotiation tool.

Having a patent gives value to the results.” The patent is a title granted by the State to have territorial market exclusivity, depending on where the application is filed. But to be able to present a patent application the object that is protected has to be 'new' - nobody in the world must have done something like it - and taking into account the status of the technique, "it does not have to be obvious for an expert in the matter to have come up with this invention.”

What benefits does it provide for the CNIC?

The R & D results obtained by the researchers are property of the CNIC, since it is the center that provides the resources to achieve these ideas. The CNIC can then license your product to a company to market it. But we must not forget that many of the ideas are unable to be licensed, despite the fact that they many years have been invested in their research and development.

Another form of knowledge transfer is through scientific collaboration or contracting services. In this way, the CNIC can exploit its great potential in scientific and technical capacities. For example, the CNIC has state-of-the-art equipment and infrastructures and both laboratories and technical units generate new animal models and research materials in-house. All this allows us to address unique R & D projects and makes the CNIC a center of reference.

Patents

- Fuster Polypill: The first polypill approved in Europe for secondary cardiovascular prevention was developed by CNIC researchers in collaboration with the pharmaceutical company Ferrer. It is approved for commercialization in 55 markets in Europe and America, thanks to having received the approval of the European Medicines Agency, as well as the national agencies. Since September 2017, in Spain a 40 milligram dose of atorvastatin is available, an option with a higher dosage than the previous one, of only 20 milligrams of atorvastatin which has been available since January 2015. It is indicated for patients who have overcome a cardiovascular incident and require treatment to reduce the risk of a second incident. The medication, fruit of public-private collaboration and marketed under the name of Trinomia, includes three active ingredients: an antiplatelet drug to prevent the formation of thrombi, acetylsalicylic acid, a statin to control cholesterol levels and to stabilize atherosclerotic plaque, atorvastatin and an ACE inhibitor, and Ramipril, an antihypertensive that prevents remodeling of the heart that occurs after a heart attack. The fact that Trinomia has been developed by the CNIC and Ferrer makes it an example of how Spanish innovation can be a leader even worldwide..

The first polypill approved in Europe for secondary cardiovascular prevention was developed by CNIC researchers in collaboration with the pharmaceutical company Ferrer

- Ultrafast Magnetic Resonance: The collaboration agreement between the CNIC and its technological partner, Philips, allows the CNIC to have the most advanced cardiovascular imaging technology in the entire spectrum, from ultrasound to hybrid equipment, through CAT scans to Magnetic Resonance (MRI). The aim is to advance in the prevention, diagnosis and more effective treatment of cardiovascular disease thanks to the technology that Philips will update as advances in this field are made, and according to the signed research program. Thanks to this collaboration agreement, the Philips-CNIC VF-3DESSOS joint patent has been developed. MRI is the best technique to see the function and anatomy of the heart, but it is a technically complicated test with examination times of over 30 minutes. The new Philips-CNIC VF-3DESSOS joint patent has shortened scan times to less than 1 minute. This joint technological development represents a milestone in the field of cardiac imaging..
- New generation of vectors: In 2016 the CNIC formalized a license agreement with the Spanish company VIVEBiotech for the development of a new generation of non-integrative viral vectors that can be used for genetic transfer and in this way modify tissues and cells. It is expected that this technology will be available for marketing during 2018.
- Atrial Fibrillation: The CNIC also has a collaboration agreement with Correvio International Sàrl for the study, both in animal models and patients, of mechanisms involved in atrial

fibrillation in order to transfer the results to clinical practice. It involves a drug that has already come out and does not work the same way in all patients. The company wants to determine the mechanism of action in order to achieve a better selection of patients.
- Biomarker in myocarditis: After more than 10 years of work, Pilar Martín Fernández's group has discovered and validated a biomarker that has already been patented for the diagnosis of acute myocarditis. Currently, a negotiation is underway for the joint development and license of the CNIC patent to the venture capital company to develop a biosensor able to detect the biomarker in patient blood samples in 30 minutes, which would be an essential tool in clinical practice for the differential diagnosis of acute myocarditis and myocardial infarction, since acute myocarditis sometimes mimics a myocardial infarction and the differential diagnosis can be very complicated. At the moment the results are positive.

The collaboration agreement between CNIC and its technological partner, Philips, allows the CNIC to have the most advanced cardiovascular imaging technology in the entire spectrum

- Among others, other patents in development are: New radiopharmaceuticals for in vivo diagnosis; Treatment and Diagnosis of Thoracic Aortic Aneurysm; P38 inhibitors for the treatment and prophylaxis of liver cancer; New therapeutic agent for the treatment of lymphoid neoplasms; Use of selective agonists of Beta-3 adrenergic receptors for the treatment of pulmonary hypertension, and New therapy for the treatment of myeloproliferative diseases.

Source URL:https://www.cnic.es/en/noticias/otri-or-how-capitalize-investment-talent-and-resources-academic-centers