

TECHNOLOGY TRANSFER AND VALORISATION OFFICE

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Discoveries made by CNIO scientists result in the development of useful novel biomedical solutions, including diagnostic and therapeutic applications, all for the benefit of cancer patients and the health system in general. The Technology Transfer and Valorisation Office (TTVO) plays an integral part of the conversion of discoveries into technologies that are ready to be taken up by companies and entrepreneurs.

The TTVO carries out the all-round management of all aspects needed to ensure the appropriate intellectual property protection and commercial viability of the research results generated by CNIO's scientist. Additionally, the TTVO Office provides advice and guidance to CNIO scientists regarding the development of research projects that have the potential to create social and economic value and, thereby, also helps to valorise their research.

To this end, the TTVO Office proactively monitors the progress of scientific activity at the CNIO in order to identify projects with high transfer potential. In 2018, a total of 13 new ideas were incorporated to the Technology Transfer portfolio, of which 7 turned into patent applications. These cover a wide range of products, including novel TRF1 inhibitors and their use to treat brain tumours, oligonucleotides for the treatment of lung cancer and other proliferative diseases, combined therapies for the treatment of pancreatic tumours driven by *Kras/Trp53* mutations, gene editing based therapies to treat tumours driven by genomic rearrangements, biomarkers for predicting resistance to immunotherapy, and biomarkers for the prediction of residual disease and relapse in melanoma.

Several new valorisation projects have been launched in 2018. To highlight some of them: a project, in collaboration with a national company, was developed for the screening of compounds of natural origin useful in ageing and cancer treatment; a senescence project based on a CNIO patent aims at the characterisation of antagonists of a novel modulator of cellular senescence; the FuGe project is directed towards the development of a cancer therapy based on CRISPR; and a drug discovery project aims at the characterisation and development of TRF1 inhibitors as a means to modulate telomere activity. The latter 2 projects have been awarded a grant under the *CaixaImpulse* initiative and thereby benefit from funding and mentoring by experts of the national bio-ecosystem.

Additionally, the TTVO identifies appropriate commercial partners for a timely development of technologies, negotiates technology transfer agreements, and manages the relationship with licensees including the payment of royalty fees. In 2018,

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the TTVO managed 291 technology transfer records related to industrial and intellectual property generated by CNIO's researchers; 171 correspond to agreements (MTAs, CDAs, Research Collaborations, licences, etc.). The majority of these agreements (65%) were established with international entities, which is an indicator of the internationalisation of the CNIO's research activity. Through research collaborations with industry, up to 2.9M euros were secured for research activities. Moreover, 5% of the agreements are licences to commercial partners. Patents and unpatented research tools are licensed in order to increase their availability to the scientific community, as well as to create opportunities for our business partners and to provide a financial return on public investment. The net income derived from licences in 2018 increased to 582,500 euros. Altogether, the net royalty income obtained from the exploitation of industrial and intellectual property assets in the last 5 years has exceeded 17M. This income reverts back to CNIO research activities as well as to the inventors themselves. A total of 36 inventors have contributed towards and benefited from this achievement.

Fostering an innovation culture among our scientists is one of our priorities. With the support of the *Fundación Banco Santander*, we uphold our collaboration with the prestigious IE Business School, through which many of our investigators – 2 new ones in 2018 – have already obtained training in market-oriented innovation strategies. Additionally, the TTVO organised events and seminars directed towards the promotion of the innovation culture among CNIO's scientist.

All the above mentioned achievements stand testament to the excellence and hard work of the CNIO scientists and to CNIO's unwavering encouragement of innovation and technology transfer activities. ■