“Our office is strongly committed to translating new discoveries in cancer research for the benefit of patients and the health care system. To this end, we identify, protect and develop projects with commercial potential, always with the mindset of co-developing them with private and public entities to increase the value of potential products.”

At the CNIO, the best science and research efforts join in the desire to make a great impact for cancer patients and the health care system. The Technology Transfer and Valorisation Office (TTVO) contributes to this purpose by ensuring appropriate protection of intellectual property and by channeling the technologies that arise from our research to companies and entrepreneurs in order to develop them further and thereby impact society.

The TTVO proactively monitors the progress of the CNIO’s scientific activity to identify projects with high transfer potential. In 2019, 15 new ideas were incorporated into the technology transfer portfolio, of which 2 turned into priority patent applications and 9 are under patentability analysis. These cover a wide range of products, including a method for determining the presence or absence of minimal residual disease in patients treated for a proliferative disease, a combination of an antibody with activated and expanded natural killer cells for cancer immunotherapy, drug inhibitors, new biomarkers, a monoclonal therapeutic antibody, a cell therapy, and an approach to screening of molecules.

CNIO patents constitute an active portfolio of assets that are carefully prosecuted according to a patent strategy and licensing efforts. In coordination with national and international patent agents, TTVO manages a portfolio of 34 patent families, and provides advice and assistance during the drafting of the patent document, filing and prosecution process. Four PCT (Patent Cooperation Treaty) applications for international extension were filed in 2019, and 2 patents with proven commercial interest entered the national phase. Licensed patents make up a remarkable 37% of the CNIO portfolio. Among the licences signed in 2019, a license agreement with the company Alum Sequencing represents a milestone for the associated CNIO-H12O Clinical Research Units.

To ensure that scientific ideas and results are transferred to the private sector, a proof-of-concept phase is usually necessary to validate its potential application in the market. The TTVO supports the preparation, coordination and advice of CNIO scientists so that their ideas reach the point of development necessary for potential companies to decide to invest and co-develop.

This is the case of calls aimed at technological development projects such as CaixaImpulse and FET-OPEN, among others. Besides from the 2 CaixaImpulse projects launched in 2019, a new cell therapy project for type 1 diabetes was awarded a CaixaImpulse grant in 2019, and thereby benefits from funding and mentoring by experts of the national bio-ecosystem. A FET-Open grant was awarded to a Consortium in which CNIO researchers will focus on the use of probes for discriminating between different types of cancer and heat generation in order to increase the permeability of the blood-brain barrier.

The experience and financial support of the value chain’s actors, from specialised investors to large multinationals in the biopharmaceutical industry and start-up companies, are necessary to develop technologies. The TTVO identifies these partners, negotiates technology transfer agreements, and manages the relationship with licensees, including the payment of royalty fees. In 2019, the TTVO managed 281 technology transfer records related to industrial and intellectual property generated by CNIO’s researchers; 231 correspond to agreements (MTAs, CDAs, Research Collaborations, licenses, etc.). Among these industrial partnerships is worth noting the collaboration with Lilly, which has been extended for 3 more years to incorporate new scientific studies that include work on immuno-metabolism, oncogenic drivers, resistance, platforms, and knowledge of resistance in immuno-oncology. Other collaborations include: the IRONMAN-ES study funded by the Movember Foundation, in which 10 to 15 hospitals participate and in which the CNIO and the Institute of Oncological Research (VHIO) are co-promoters; the extension of the collaboration contract with the Spanish company Lipotrue; and a collaboration contract with the Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori.

The majority of these agreements (68%) 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 1.7 million euro were secured for research activities. Moreover, 4% of the agreements are licences to commercial partners. Patents and unpatented research tools are licensed. The net income derived from licences in 2019 increased to 674,900 euro. This income reverts back to CNIO research activities as well as to the inventors themselves. A total of 40 inventors and 10 research groups have contributed towards and benefited from this achievement.

Effective transfer of research results to the productive environment requires intensive networking and asset promotion. In addition to attending international forums on advanced therapies in cancer and regenerative medicine, in 2019 TTVO participated in the ASEBIO Investors Day in Madrid and the Milner Therapeutics Symposium in Cambridge. All the above-mentioned achievements stand testament to the excellence and hard work of the CNIO scientists and to the CNIO’s unwavering encouragement of innovation and technology transfer activities.