

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 6-K

**Report of Foreign Private Issuer
Pursuant to Rule 13a-16 or 15d-16
of the Securities Exchange Act of 1934**

Date of Report: 11/09/2021

Commission File Number: 001-39777

Nanobiotix S.A.

(Exact Name of Registrant as Specified in its Charter)

**60 Rue de Wattignies
75012 Paris, France**
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

Form 20-F Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

EXHIBIT INDEX

Exhibit Title

[99.1](#) [Press Release, dated November 09, 2021](#)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

PORTER NOVELLI
(Agency)

By: /s/ Emily Papp

Emily Papp
Senior Account Executive

NANOBIOTIX S.A.
(Registrant)

By: /s/ Bart Van Rhijn

Bart Van Rhijn
Chief Financial Officer

NANOBIOTIX Announces New Preclinical Data Highlighting NBTXR3 Immune Priming and Checkpoint Inhibitor Combination

Data to be presented at the 36th Annual Meeting of the Society for the Immunotherapy of Cancer (SITC)

- **Data show radiotherapy-activated NBTXR3 increased CD8+ T cell infiltration and modulated the T cell receptor repertoire in a mouse model, suggesting stronger immune priming triggered by the therapy compared to radiotherapy alone**
- **Data show the combination of radiotherapy-activated NBTXR3, anti-PD-1, anti-LAG3, and anti-TIGIT significantly elevated the activities of anti-tumor immune response**

PARIS & CAMBRIDGE, Mass.--(BUSINESS WIRE)--November 9, 2021--Regulatory News:

NANOBIOTIX (Euronext: NANO – NASDAQ: NBTX – the "**Company**"), a late-stage clinical biotechnology company pioneering physics-based approaches to expand treatment possibilities for patients with cancer, today announced new preclinical immunotherapy data for novel, potentially solid tumor- and therapeutic combination-agnostic radioenhancer NBTXR3 that will be presented at the 2021 Annual Meeting of the Society for the Immunotherapy of Cancer (SITC). The Company believes that these data are consistent with recently presented clinical immunotherapy data and support advancement of development with anti-PD-1 and emerging immune checkpoint inhibitors.

“Our view is that the potential immune priming effect we have observed with NBTXR3 could make our product candidate an important combination therapy with immune checkpoint inhibitors to improve treatment outcomes for patients,” said Laurent Levy, co-founder and chief executive officer of Nanobiotix. “The new preclinical data at SITC, along with data we have evaluated in the clinical setting, present a promising path forward in immunotherapy.”

Preclinical data to be presented at the meeting by Nanobiotix (Abstract #740) show that radiotherapy-activated NBTXR3 increases CD8+ T cell infiltration and modulates the T cell receptor (“TCR”) repertoire, as well as marked modulation of immunopeptidome in treated tumor cells in a mouse model. Taken together, these variations could indicate that radiotherapy-activated NBTXR3 triggers more robust immune priming than radiotherapy alone and merits further evaluation of CD8+ response and abscopal effect.

The Company’s perspective is that these data further support the mechanistic rationale of combining NBTXR3 with immune checkpoint inhibitors. The preclinical data follows preliminary clinical data presented earlier in the fourth quarter of 2021 from the phase I trial (“Study 1100”) evaluating NBTXR3 in combination with the anti-PD-1 checkpoint inhibitors nivolumab (Opdivo®) or pembrolizumab (Keytruda®) in patients with locoregional recurrent (“LRR”) or recurrent and metastatic (“R/M”) head and neck squamous cell carcinoma (“HNSCC”) or with lung or liver metastases from any primary cancer that is eligible for anti-PD-1 therapy. This preliminary data for Study 1100 showed an overall AE profile consistent with radiotherapy or anti-PD-1 monotherapies. A 56% target lesion objective response rate (80% in anti-PD-1 naïve patients; 45% in prior non-responders) was observed in evaluable patients (n=16). A 50% overall objective response rate (% response in target and non-target lesions) was observed (80% in anti-PD-1 naïve patients; 36% for prior non-responders) in evaluable patients. The potential immune priming effect of radiotherapy-activated NBTXR3 was observed in non-responders as well as anti-PD-1 naïve patients, suggesting that NBTXR3 may reverse or circumvent resistance to prior anti-PD-1 treatment.

Evaluation of novel combination approaches to immunotherapy continues to be a priority for Nanobiotix, as investigators seek to expand the impact of I/O agents for the 80-85% of patients that receive limited benefits, or no benefit at all, by improving response rates and overcoming resistance to anti-PD-1. TIGIT and LAG3, members of the same receptor class as CTLA-4 and PD-1, could be the next generation of immunotherapy targets and are being investigated alone and in combination with existing anti-PD-1 agents aiming to improve patient outcomes in clinical trials.

The preclinical data to be presented at SITC by The University of Texas MD Anderson Cancer Center (Abstract #575) show that radiotherapy-activated NBTXR3 plus anti-PD-1, anti-TIGIT, and anti-LAG3 (“Combo therapy”) significantly promotes the proliferation activity of CD8+ T cells, improves local and distant tumor control, and increases survival rate in mice. Only the group of mice treated with the Combo therapy had survivors and those cured mice were immune to re-injection of tumor cells, maintained a significantly higher percentage of memory CD4+ and CD8+ memory T cells, and had stronger anti-tumor immune activities than the control, suggesting the induction of long-term anti-tumor memory by the Combo therapy.

“We have long believed that radiotherapy has a critical role to play in immunotherapy and that innovation in the practice is key to achieving this ambition,” said James Welsh, MD, Associate Professor of Radiation Oncology at MD Anderson. “Our preclinical research on NBTXR3 has consistently supported the potential of this new agent in combination with radiotherapy and immune checkpoint inhibitors in order to enhance immunogenic cell death. We look forward to continuing our evaluation, both in the lab and in the clinic, with the ultimate goal of improving treatment outcomes for patients.”

About NBTXR3

NBTXR3 is a novel, potentially first-in-class oncology product composed of functionalized hafnium oxide nanoparticles that is administered via one-time intratumoral injection and activated by radiotherapy. The product candidate’s physical mechanism of action (MoA) is designed to induce significant tumor cell death in the injected tumor when activated by radiotherapy, subsequently triggering adaptive immune response and long-term anti-cancer memory. Given the physical MoA, Nanobiotix believes that NBTXR3 could be scalable across any solid tumor that can be treated with radiotherapy and across any therapeutic combination, particularly immune checkpoint inhibitors.

NBTXR3 is being evaluated in locally advanced head and neck squamous cell carcinoma (HNSCC) as the primary development pathway. The company-sponsored phase I dose escalation and dose expansion study has produced favorable safety data and early signs of efficacy; and a phase III global registrational study is planned to launch in 2021. In February 2020, the United States Food and Drug Administration granted regulatory Fast Track designation for the investigation of NBTXR3 activated by radiation therapy, with or without cetuximab, for the treatment of patients with locally advanced HNSCC who are not eligible for platinum-based chemotherapy—the same population being evaluated in the planned phase III study.

Nanobiotix has also prioritized an Immuno-Oncology development program—beginning with a Company sponsored phase I clinical study evaluating NBTXR3 activated by radiotherapy in combination with anti-PD-1 checkpoint inhibitors for patients with locoregional recurrent or recurrent/metastatic HNSCC and lung or liver metastases from any primary cancer eligible for anti-PD-1 therapy.

Given the Company’s focus areas, and balanced against the scalable potential of NBTXR3, Nanobiotix has engaged in a strategic collaboration strategy with world class partners to expand development of the product candidate in parallel with its priority development pathways. Pursuant to this strategy, in 2019 Nanobiotix entered into a broad, comprehensive clinical research collaboration with The University of Texas MD Anderson Cancer Center to sponsor several phase I and phase II studies to evaluate NBTXR3 across tumor types and therapeutic combinations.

About NANOBIOTIX

Nanobiotix is a late-stage clinical biotechnology company pioneering disruptive, physics-based therapeutic approaches to revolutionize treatment outcomes for millions of patients; supported by people committed to making a difference for humanity. The company’s philosophy is rooted in the concept of pushing past the boundaries of what is known to expand possibilities for human life. Incorporated in 2003, Nanobiotix is headquartered in Paris, France. The company also has subsidiaries in Cambridge, Massachusetts (United States), France, Spain, and Germany. Nanobiotix has been listed on the regulated market of Euronext in Paris since 2012 and on the Nasdaq Global Select Market in New York City since December 2020. Nanobiotix is the owner of more than 30 umbrella patents associated with three (3) nanotechnology platforms with applications in 1) oncology; 2) bioavailability and biodistribution; and 3) disorders of the central nervous system. The company’s resources are primarily devoted to the development of its lead product candidate— NBTXR3 —which is the product of its proprietary oncology platform and has already achieved market authorization in Europe for the treatment of patients with soft tissue sarcoma under the brand name Hensify®. For more information about Nanobiotix, visit us at www.nanobiotix.com or follow us on LinkedIn and Twitter.

Disclaimer

This press release contains certain “forward-looking” statements within the meaning of applicable securities laws, including the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by words such as “at this time,” “anticipate,” “believe,” “expect,” “intend,” “on track,” “plan,” “scheduled,” and “will,” or the negative of these and similar expressions. These forward-looking statements, which are based on our management’s current expectations and assumptions and on information currently available to management, include statements about the timing and progress of clinical trials, the timing of our presentation of data, the results of our preclinical and clinical studies and their potential implications. Such forward-looking statements are made in light of information currently available to us and based on assumptions that Nanobiotix considers to be reasonable. However, these forward-looking statements are subject to numerous risks and uncertainties, including with respect to the risk that subsequent studies and ongoing or future clinical trials may not generate favorable data notwithstanding positive early clinical results and the risks associated with the evolving nature of the duration and severity of the COVID-19 pandemic and governmental and regulatory measures implemented in response to it. Furthermore, many other important factors, including those described in our Annual Report on Form 20-F filed with the U.S. Securities and Exchange Commission (the SEC) on April 7, 2021 under “Item 3.D. Risk Factors” and those set forth in the universal registration document of Nanobiotix filed with the French Financial Markets Authority (Autorité des Marchés Financiers – the AMF) on April 7, 2021, each as updated in our Half-Year Financial Report filed with the AMF and the SEC on September 8, 2021 (a copy of which is available on www.nanobiotix.com), as well as other known and unknown risks and uncertainties may adversely affect such forward-looking statements and cause our actual results, performance or achievements to be materially different from those expressed or implied by the forward-looking statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons why actual results could differ materially from those anticipated in the forward-looking statements, even if new information becomes available in the future.

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