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 UNDER THE SECURITIES EXCHANGE ACT OF 1934

September 12, 2022

Commission File Number: 001-39363

IMMATICS N.V.

Paul-Ehrlich-Straße 15
72076 Tübingen, Federal Republic of Germany
(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): ☐

INFORMATION CONTAINED IN THIS REPORT ON FORM 6-K

On September 10, 2022, Immatics N.V. (the "Company" or "Immatics") announced a comprehensive preclinical data set for its T cell engaging receptor (TCER®) product candidate IMA402 at the European Society for Medical Oncology (ESMO) Congress 2022 held in Paris, France, from September 9 to 13, 2022. Data highlights include:

- The IMA402 TCER® utilizes a high-affinity TCR designed to specifically bind to an HLA-A*02:01-presented peptide derived from PRAME on tumor cells
- The T cell recruiter domain is a proprietary low-affinity T cell recruiter against the TCR/CD3 complex that demonstrates superior *in vivo* tumor control compared to analogous TCER® molecules designed with higher-affinity variants of a widely used antibody recruiter
- The IMA402 TCER® is optimized to reduce T cell engager-associated toxicities in patients, which is demonstrated by reduced recruiter-mediated cytokine release *in vitro*
- IMA402 showed potent and selective activity against PRAME-positive tumor cell lines *in vitro*
- *In vivo* studies in mice demonstrated dose-dependent anti-tumor activity of IMA402. Sufficiently high drug doses were key to achieving the desired anti-tumor effects over a prolonged period
- *In vitro* safety assessment including toxicity screening against 20 normal tissue types, whole blood cytokine release assessment and alloreactivity evaluation confirmed favorable safety profile for IMA402
- The half-life extended format of IMA402 confers a serum half-life of >1 week in mice suggesting a favorable dosing regimen and prolonged drug exposure at therapeutic levels when compared to TCR Bispecifics lacking half-life extension strategies
- IMA402 is designed to allow high dosing not limited by toxicities with the goal of reaching relevant therapeutic doses in tumor tissue and achieve a meaningful clinical benefit in patients

A clinical trial evaluating IMA402 in patients with solid tumors is expected to start in 2023. The Phase 1 part of the trial will start with a minimal anticipated biological effect level (MABEL) dose of IMA402 and will have an adaptive design aimed at accelerating dose escalation to determine the recommended Phase 2 dose (RP2D). HLA-A*02:01-positive patients with different solid tumors expressing PRAME will initially receive weekly infusions of IMA402. Pharmacokinetics data will be assessed throughout the trial and might provide an opportunity to adapt the treatment interval. The Phase 2a dose expansion part of the trial will be designed to comprise several cohorts to further evaluate IMA402 in specific indications and combination therapies. Submission of the IND application is planned for Q2 2023.

In connection with the foregoing, the Company issued a press release, a copy of which is attached hereto as Exhibit 99.1.

INCORPORATION BY REFERENCE

This Report on Form 6-K (other than Exhibit 99.1) shall be deemed to be incorporated by reference into the registration statements on Form F-3 (Registration Nos. 333-258351 and 333-240260) of Immatics N.V. and to be a part thereof from the date on which this report is filed, to the extent not superseded by documents or reports subsequently filed or furnished.

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press release dated September 10, 2022

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.

IMMATICS N.V.

Date: September 12, 2022

By: /s/ Harpreet Singh
Name: Harpreet Singh
Title: Chief Executive Officer

PRESS RELEASE

Immatics Presents Comprehensive Preclinical Data Set for TCR Bispecific Candidate IMA402 Targeting PRAME at European Society for Medical Oncology (ESMO) Congress 2022

- TCER® IMA402 is a next-generation, half-life extended TCR Bispecific targeting an HLA-A*02:01-presented peptide derived from PRAME
- In preclinical studies, IMA402 demonstrated enhanced anti-tumor activity *in vivo* and reduced T cell engager-associated toxicities as part of overall favorable *in vitro* safety profile
- Pharmacokinetic characteristics of half-life extended IMA402 suggest potential for a favorable dosing regimen in patients with prolonged drug exposure at therapeutic levels.
- IMA402 is part of Immatics' strategy to leverage the full clinical potential of targeting PRAME, one of the most promising targets for TCR-based therapies
- Phase 1/2 clinical trial on track to start in 2023; submission of the CTA/IND[1] application is planned for 2Q 2023.

Tuebingen, Germany and Houston, Texas, September 10, 2022 – Immatics N.V. (NASDAQ: IMTX, "Immatics"), a clinical-stage biopharmaceutical company active in the discovery and development of T cell-redirecting cancer immunotherapies, today announced a comprehensive preclinical data set for its T cell engaging receptor (TCER®) product candidate IMA402 at the European Society for Medical Oncology (ESMO) Congress 2022 held in Paris, France, from September 9 to 13, 2022. IMA402 is the company's second program in its TCR Bispecifics pipeline and is directed against an HLA-A*02:01-presented peptide derived from PRAME, a cancer target broadly expressed in many solid tumors. The data are available as an ePoster on the ESMO platform at 9 AM on Saturday, September 10, and will be presented during the poster session from noon to 1 PM CEST on Monday, September 12.

Immatics TCER® molecules are "off-the-shelf§ TCR Bispecifics engineered with two binding regions: a TCR domain and a T cell recruiter domain.

1) Clinical Trial Application (CTA) is the equivalent of an Investigational New Drug (IND) application in Europe

Data Highlights:

TCER® format is optimized for efficacy and safety

- The IMA402 TCER® utilizes a high-affinity TCR designed to specifically bind to an HLA-A*02:01-presented peptide derived from PRAME on tumor cells
- The T cell recruiter domain is a proprietary low-affinity T cell recruiter against the TCR/CD3 complex that demonstrates superior *in vivo* tumor control compared to analogous TCER® molecules designed with higher-affinity variants of a widely used antibody recruiter

- The IMA402 TCER® is optimized to reduce T cell engager-associated toxicities in patients, which is demonstrated by reduced recruiter-mediated cytokine release *in vitro*

Compelling preclinical data

- IMA402 showed potent and selective activity against PRAME-positive tumor cell lines *in vitro*
- *In vivo* studies in mice demonstrated dose-dependent anti-tumor activity of IMA402. Sufficiently high drug doses were key to achieving the desired anti-tumor effects over a prolonged period
- *In vitro* safety assessment including toxicity screening against 20 normal tissue types, whole blood cytokine release assessment and alloreactivity evaluation confirmed favorable safety profile for IMA402
- The half-life extended format of IMA402 confers a serum half-life of >1 week in mice suggesting a favorable dosing regimen and prolonged drug exposure at therapeutic levels when compared to TCR Bispecifics lacking half-life extension strategies

Clinical trial evaluating IMA402 in patients with solid tumors to start in 2023

- IMA402 is designed to allow high dosing not limited by toxicities with the goal of reaching relevant therapeutic doses in tumor tissue and achieve a meaningful clinical benefit in patients

“Improving drug safety, efficacy and dosing schedule are key considerations in the field of bispecific T cell engaging molecules. The promising preclinical results for our next-generation, half-life extended TCER® IMA402 reflect the potential of our TCR Bispecific approach for patients with solid tumors,” commented Carsten Reinhardt, M.D., Ph.D., Chief Development Officer at Immatics. “We look forward to initiating the IMA402 Phase 1/2 clinical trial in 2023 as part of our strategy to tackle PRAME with two distinct therapeutic modalities. We believe PRAME is the most promising, clinically validated T cell target for solid cancers to date and with our cell therapy and bispecific approaches, we are well positioned to provide innovative treatment options for a variety of cancer patient populations with different medical needs.”

To enable the start of the Phase 1/2 trial in 2023, Immatics has completed the manufacturing process development for IMA402 and manufacturing of the clinical batch is on track for 2H 2022. The Phase 1 part of the trial will start with a minimal anticipated biological effect level (MABEL) dose of IMA402 and will have an adaptive design aimed at accelerating dose escalation to determine the recommended Phase 2 dose (RP2D). HLA-A*02:01-positive patients with different solid tumors expressing PRAME will initially receive weekly infusions of IMA402. Pharmacokinetics data will be assessed throughout the trial and might provide an opportunity to adapt the treatment interval. The Phase 2a dose expansion part of the trial will be designed to

comprise several cohorts to further evaluate IMA402 in specific indications and combination therapies. Submission of the IND[1] application is planned for Q2 2023.

The ESMO Congress 2022 poster presentation is available on Immatics' website using this link.

About TCER®

Immatics' half-life extended TCER® molecules are next-generation, antibody-like "off-the-shelf" biologics that leverage the body's immune system by redirecting and activating T cells towards cancer cells expressing a specific tumor target. The design of the TCER® molecules enables the activation of any T cell in the body to attack the tumor, regardless of the T cells' intrinsic specificity. Immatics proprietary biologics are engineered with two binding regions: a TCR domain and a T cell recruiter domain. The TCER® format is designed to maximize efficacy while minimizing toxicities in patients. It contains a high-affinity TCR domain that is designed to bind specifically to the cancer target peptide on the cell surface presented by an HLA molecule. The antibody-derived, low-affinity T cell recruiter domain is directed against the TCR/CD3 complex and recruits a patient's T cells to the tumor to attack the cancer cells. With a low-affinity recruiter aiming for optimized biodistribution and enrichment of the molecule at the tumor site instead of the periphery, TCER® are engineered to reduce the occurrence of immune-related adverse events, such as cytokine release syndrome. In addition, the TCER® format consists of an Fc-part conferring half-life extension, stability, and manufacturability. TCER® are "off-the-shelf" biologics and thus immediately available for patient treatment. They can be distributed through standard pharmaceutical supply chains and provide the opportunity to reach a large patient population without the need of specialized medical centers.

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About Immatics

Immatics combines the discovery of true targets for cancer immunotherapies with the development of the right T cell receptors with the goal of enabling a robust and specific T cell response against these targets. This deep know-how is the foundation for our pipeline of Adoptive Cell Therapies and TCR Bispecifics as well as our partnerships with global leaders in the pharmaceutical industry. We are committed to delivering the power of T cells and to unlocking new avenues for patients in their fight against cancer.

For regular updates about Immatics, visit www.immatics.com. You can also follow us on Instagram, Twitter and LinkedIn.

Forward-Looking Statements:

Certain statements in this press release may be considered forward-looking statements. Forward-looking statements generally relate to future events or Immatics' future financial or operating performance. For example, statements concerning the timing of product candidates and Immatics' focus on partnerships to advance its strategy are forward-looking statements. In

some cases, you can identify forward-looking statements by terminology such as “may”, “should”, “expect”, “intend”, “will”, “estimate”, “anticipate”, “believe”, “predict”, “potential” or “continue”, or the negatives of these terms or variations of them or similar terminology. Such forward-looking statements are subject to risks, uncertainties, and other factors which could cause actual results to differ materially from those expressed or implied by such forward looking statements. These forward-looking statements are based upon estimates and assumptions that, while considered reasonable by Immatics and its management, are inherently uncertain. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. Factors that may cause actual results to differ materially from current expectations include, but are not limited to, various factors beyond management's control including general economic conditions and other risks, uncertainties and factors set forth in filings with the SEC. Nothing in this presentation should be regarded as a representation by any person that the forward-looking statements set forth herein will be achieved or that any of the contemplated results of such forward-looking statements will be achieved. You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. Immatics undertakes no duty to update these forward-looking statements. All the scientific and clinical data presented within this press release are – by definition prior to completion of the clinical trial and a clinical study report – preliminary in nature and subject to further quality checks including customary source data verification.

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