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

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): November 4, 2021

TALARIS THERAPEUTICS, INC.
(Exact name of registrant as specified in its charter)

Delaware	**001-40384**	**83-2377352**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(I.R.S. Employer Identification No.)**

Talaris Therapeutics, Inc.
570 S. Preston St
Louisville, KY 40202
(Address of principal executive offices, including zip code)

(502) 398-9250
(Registrant's telephone number, including area code)

Not Applicable
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trade Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	**TALS**	**The Nasdaq Global Market**

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 8.01 Other Events.

On November 4, 2021, Talaris Therapeutics, Inc. ("Talaris" or the "Company") announced the first clinical update on its Phase 3 FREEDOM-1 study in living donor kidney transplant (LDKT) recipients, and also separately presented a clinical update and additional data from ongoing follow-up of its fully-enrolled Phase 2 study in LDKT recipients at the 2021 American Society of Nephrology (ASN) meeting.

In the Phase 3 FREEDOM-1 study (NCT# 03995901), the first two study patients whose LDKT occurred more than 12 months prior to the data cutoff date were both successfully weaned off all chronic immunosuppression (IS) drugs without evidence of rejection and with stable kidney function and continue to remain off all IS through the data cut-off date. Furthermore, all patients treated at least three months prior to the cutoff date with the Company's Facilitated Allo-HSCT Therapy, FCR001, achieved T-cell chimerism levels >50% at each of the 3-, 6-, and 12-month timepoints post-transplant. In the Company's Phase 2 study, establishment and maintenance of >50% donor peripheral T-cell chimerism in an LDKT recipient at 3, 6 and 12 months after administration of FCR001 all correlated strongly with the patient's ability to durably discontinue chronic IS approximately one year after transplant, without subsequent graft rejection.

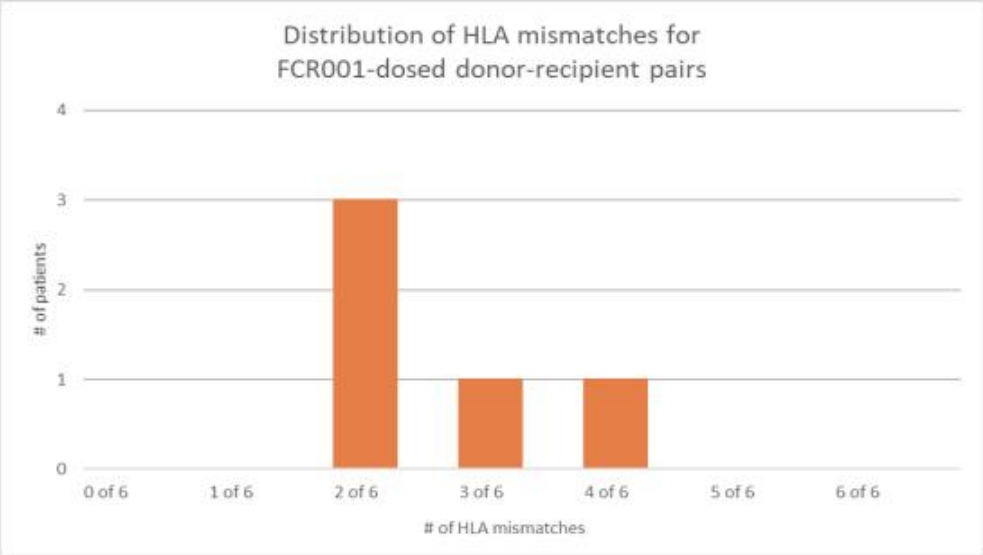
The Company also presented "Preserved kidney allograft function and unique urinary biomarker profiles in living-donor kidney transplant patients tolerized with an investigational allo-HSCT cell therapy" (PO2040) at the 2021 ASN meeting. This poster reported that, in continued long-term follow-up of patients treated in the Company's Phase 2 study of FCR001 (median >6 years), kidney allograft function was preserved in all patients who had been successfully weaned off chronic IS and such patients have continued to remain off chronic IS for the duration of their follow up. Further, Talaris reported that it has identified potential signals of immune quiescence in the kidneys of some of its Phase 2 LDKT patients who were tolerized to their donated kidney, as compared to standard of care kidney transplant patients.

Initial Phase 3 FREEDOM-1 Highlights

The Company provided an update on the first 5 patients dosed with its investigational Facilitated Allo-HSCT Therapy FCR001 in its FREEDOM-1 study. FREEDOM-1 is a randomized, controlled, open-label Phase 3 registrational study of FCR001 in 120 adult LDKT recipients in the United States. The primary endpoint of FREEDOM-1 is the proportion of kidney transplant recipients treated with FCR001 who are free from chronic IS, without biopsy-proven acute rejection (BPAR), at month 24 post-transplant.

- **Enrollment, demographics and degree of HLA mismatching.** A total of 11 LDKT donor-recipient pairs have been enrolled to date in the FREEDOM-1 study at a total of 5 clinical sites. Of these, 7 were randomized to receive FCR001 and 4 were randomized to the control arm. Currently, 5 of those randomized to FCR001 have received their kidney transplant and have been dosed with FCR001. All donors and recipients were between 18 – 65 years of age and met the eligibility criteria for inclusion in the FREEDOM-1 study. Figure 1 shows the distribution of all FCR001 recipients dosed to date, by the number of HLA mismatches between the donor and the recipient.

Figure 1.



- **FCR001 patients achieving >50% T-cell chimerism by timepoint and discontinuation of chronic immunosuppression (IS) after 12 months.** As shown in Figure 2, a total of five patients have been dosed through the data cutoff date, two of whom are more than 12 months post-transplant. Both demonstrated >50% T-cell chimerism at each of the 3-, 6- and 12-month timepoints and have been discontinued from chronic IS. One patient is more than six months post-transplant and has demonstrated >50% T-cell chimerism at the 3- and 6-month timepoints. The remaining two patients have not yet met the 3-month timepoint.

Figure 2.

Time Since Kidney Transplant					
# of pts	<3mo	>3mo	>6mo	>12mo	>12/off IS
2	Chimeric* at 3, 6 and 12 mo timepoints & removed from IS				
1	Chimeric* at 3 and 6 mo timepoints				
2	NM	*Not measured; patient has not reached 3mo timepoint*			
5	*Total FCR001 Phase 3 patients dosed to date*				

**Chimeric: Achieved and maintained >50% T-cell chimerism at designated study visit timepoint*

In the context of transplantation, chimerism refers to a state wherein both the donor's and the recipient's hematopoietic stem cells (HSCs) coexist in the recipient's bone marrow. Talaris believes chimerism to be an important potential study biomarker, predictive of inducing a state of allogeneic tolerance in the recipient, whereby the recipient tolerates the donated organ without the need for chronic IS. Achieving durable donor T-cell chimerism in the LDKT recipient is one of the goals of the Company's Facilitated Allo-HSCT Therapy. In the Company's Phase 2 study, establishment and maintenance of >50% donor peripheral T-cell chimerism in an LDKT recipient at 3, 6 and 12 months after administration of FCR001 all correlated strongly with the patient's ability to durably discontinue chronic IS approximately one year after transplant, without subsequent graft rejection.

- **Phase 3 safety profile in FCR001-dosed patients.** The adverse events (AEs) and serious adverse events (SAEs) observed to date in the FCR001-dosed patients are consistent with kidney and stem cell

transplantation involving non-myeloablative conditioning and with what was observed in the Phase 2 study. No events occurred to cause the Data Safety Monitoring Board (DSMB) to stop or modify the study protocol, nor was any stopping rule triggered.

To date, no FCR001-dosed patients in the Phase 3 study have experienced BPAR. Moreover, to date, none of the 5 patients dosed with FCR001 in the Phase 3 study have developed donor-specific antibodies (DSA), the presence of which post-transplant predicts an increased risk for antibody-mediated rejection of the donated organ.

Phase 2 Long-Term Follow-Up Study Updates

- **Consistent durability off IS and safety profile.** In a poster presented at the 2021 ASN meeting, Talaris provided an update on the continued long-term follow-up of patients in its Phase 2 LDKT study. Talaris previously reported that 26 of 37 (70%) patients in its Phase 2 study achieved stable T-cell chimerism and were weaned off all chronic IS by approximately 12 months after their transplant. To date, 26 of 26 patients (100%) weaned off IS have continued to remain off chronic IS for the duration of their follow-up without rejecting their donated kidney. Talaris has followed these patients for a median >6 years and the longest >12 years. Six of these transplant recipients have now exceeded 10 years off all chronic IS without BPAR. Through June 11, 2021, the date of the most recent DSMB meeting for the Phase 2 study, there have been no additional AEs or SAEs reported since the prior Phase 2 data cut-off date that were determined to be related to FCR001.
    - The ability to discontinue chronic immunosuppression was observed across all levels of donor and recipient HLA matching, with 19 out of 26 recipients (73%) who were able to durably discontinue their chronic IS having an HLA match of three or less to their donor. In the Phase 2 study, Talaris did not observe any correlation between the degree of HLA mismatch and the safety or efficacy measures in the study.
    - As of October 1, 2021, Talaris has accumulated over 250 patient-years of exposure to FCR001 in LDKT, and the safety profile observed in the Phase 2 patients remains generally consistent with that expected of a patient who receives both a standard living donor kidney transplant and an allo-HSCT with nonmyeloablative conditioning.
    - Most adverse events in the Phase 2 study occurred during the first 12 months post-transplant when the patients were on conventional immunosuppression.

New Poster Describes Potential Additional Signal of Immune Quiescence

- **Potential urinary biomarker of immune quiescence.** In a poster presented at the 2021 ASN meeting, Talaris reported findings of urinary mRNA profiling that it performed in a subgroup of Phase 2 LDKT patients who were tolerized to their donated kidney, as well as in a biopsy-matched cohort of standard of care LDKT recipients on chronic IS. In this analysis, Talaris identified potential signals of greater immune quiescence in the kidneys of tolerized patients, as compared to the cohort of biopsy-matched standard of care kidney transplant patients. These findings may provide further support that these patients have been tolerized to their donated kidney.

Cautionary Note Regarding Forward-Looking Statements

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, implied and express statements regarding Talaris Therapeutics, Inc.'s ("Talaris," the "Company," "we," or "our") strategy, business plans and focus; the progress and timing of the preclinical and clinical development of Talaris' programs, including FCR001; expectations regarding the dosing of additional patients in Talaris' FREEDOM-1 study; and expectations regarding the identification of a potential signature of tolerance. The words "may," "might," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "expect," "estimate," "seek," "predict," "future," "project," "potential," "continue," "target" or the negative of these terms and similar words or expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

Any forward-looking statements in this report are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this report, including, without limitation, risks associated with the impact of COVID-19 where the Company has operations or does business, as well as on the timing and anticipated timing and results of its clinical trials; the risk that the strategy and future operations of the Company, including the expected timing, enrollment, and results from the FREEDOM-1 study will not meet expectations; the risk that early data from the FREEDOM-1 study may not be predictive of or consistent with final results; the risk that the results of Talaris' earlier clinical trials may not be predictive of future results in connection with future clinical trials; and the risk that the Company may not be able to successfully demonstrate the safety and efficacy of its drug candidates, including FCR001. These and other risks and uncertainties are described in greater detail in the section entitled "Risk Factors" in the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021, as well as any subsequent filings with the Securities and Exchange Commission. In addition, any forward-looking statements represent Talaris' views only as of today and should not be relied upon as representing our views as of any subsequent date. Talaris explicitly disclaims any obligation to update any forward-looking statements. No representations or warranties (expressed or implied) are made about the accuracy of any such forward-looking statements.

SIGNATURE

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 hereunto duly authorized.

Talaris Therapeutics, Inc.

Date: November 4, 2021

By: /s/ Scott Requadt
Scott Requadt
President and Chief Executive Officer