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

August 12, 2021 (August 11, 2021)
Date of Report (Date of earliest event reported)

Aprea Therapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**001-39069**	**84-2246769**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

535 Boylston Street **Boston, Massachusetts**	**02116**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(617) 463-9385**

(Former name or former address, if changed since last report): Not applicable

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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	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common stock, par value $0.001 per share	APRE	NASDAQ Global Select 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 2.02 Results of Operations and Financial Condition

On August 12, 2021, the Company issued a press release announcing its financial results for the second quarter ended June 30, 2021 and an update on the Company's operations for the same period. The Company is furnishing a copy of the press release, which is attached hereto as Exhibit 99.1.

In accordance with General Instruction B.2 of Form 8-K, the information included in this Item 2.02, including Exhibit 99.1 hereto, shall not be deemed "filed" for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference into any filing made by the Company under the Exchange Act or Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference in such a filing.

Item 8.01 Other Events

On August 11, 2021, Aprea Therapeutics, Inc. ("Aprea") was notified by the U.S. Food and Drug Administration (FDA) that it placed a clinical on its clinical trial evaluating eprenetapopt with acalabrutinib or with venetoclax and rituximab in lymphoid malignancies. There is one CLL patient currently on study treatment receiving eprenetapopt in combination with venetoclax and rituximab. This patient may continue to receive study treatment as long as the patient is deriving clinical benefit. No additional patients can be enrolled until the clinical hold is resolved. Aprea intends to work closely with the FDA to address the specific questions raised and seek to resolve the clinical hold as soon as possible.

On August 12, 2021, the Company issued a press release announcing the clinical hold. A copy of this press release is filed herewith as Exhibit 99.2 to this Current Report.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit Number	Description
99.1	Press release issued by Aprea Therapeutics, Inc. dated August 12, 2021.
99.2	Press release issued by Aprea Therapeutics, Inc. dated August 12, 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 hereunto duly authorized.

Aprea Therapeutics, Inc.

Dated: August 12, 2021

By: /s/ Christian S. Schade
Name: Christian S. Schade
Title: Chairman and Chief Executive Officer

Exhibit 99.1

Aprea Therapeutics Reports Second Quarter 2021 Financial Results and Provides Update on Business Operations

BOSTON, MA, August 12, 2021 (GLOBE NEWSWIRE) -- Aprea Therapeutics, Inc. (Nasdaq: APRE), a biopharmaceutical company focused on developing and commercializing novel cancer therapeutics that reactivate the mutant tumor suppressor protein, p53, today reported financial results for the three and six months ended June 30, 2021 and provided a business update.

Business Operations Update:

The Company is conducting, supporting, and planning multiple clinical trials of *eprenetapopt* (APR-246) and APR-548. On August 4, 2021, the U.S. Food and Drug Administration (FDA) placed a partial clinical hold on the clinical trials of eprenetapopt in combination with azacitidine in our myeloid malignancy programs.

There are approximately 20 patients currently receiving eprenetapopt in combination with azacitidine in our myeloid malignancy programs, which includes the MDS, AML and post-transplant maintenance trials, all of which have completed enrollment. Patients who are benefiting from treatment can continue to receive study treatment. As part of the partial clinical hold, no additional patients should be enrolled to these clinical trials until the partial clinical hold is resolved, The Company intends to work closely with the FDA to analyze the data, address the specific questions raised, and seek to resolve the partial clinical hold as soon as possible.

On August 11, 2021, the FDA placed a clinical hold on the Company's clinical trial evaluating eprenetapopt with acalabrutinib or with venetoclax and rituximab in lymphoid malignancies. There is one CLL patient currently on study treatment receiving eprenetapopt in combination with venetoclax and rituximab. This patient may continue to receive study treatment as long as the patient is deriving clinical benefit. No additional patients can be enrolled until the clinical hold is resolved. The Company intends to work closely with the FDA to address the specific questions raised, and seek to resolve the clinical hold as soon as possible.

The Company's current clinical trials are as follows:

- **Phase 3 Frontline MDS Trial** -- In June 2020, the Company completed full enrollment of 154 patients in a pivotal Phase 3 trial of eprenetapopt with azacitidine for frontline treatment of patients with *TP53* mutant MDS. The pivotal Phase 3 trial is supported by data from two Phase 1b/2 investigator-initiated trials, one in the U.S. and one in France, testing eprenetapopt with azacitidine as frontline treatment in *TP53* mutant MDS and AML patients. The data from the U.S. and French Phase 1b/2 trials were published in *The Journal of Clinical Oncology* in January 2021 and February 2021, respectively. In December 2020, the Company announced that its pivotal Phase 3 trial failed to meet its predefined primary endpoint of complete remission (CR) rate. Analysis of the primary endpoint at this data cut demonstrated a higher CR rate (53% more patients achieving a CR) in the experimental arm receiving eprenetapopt with azacitidine versus the control arm receiving azacitidine alone but did not reach statistical significance. Based on a thorough analysis of the current Phase 3 trial data and comparisons to the U.S. and French Phase 1b/2 trials the Company believes that despite similar types and frequency of adverse events observed in the Phase 3 experimental arm and the Phase 1b/2 trials, patients in the Phase 3 experimental arm experienced substantially more study treatment dose modifications compared to the experience in the U.S. and French Phase 1b/2 trials. The Company believes that dose modifications of eprenetapopt and azacitidine led to undertreatment in the Phase 3 experimental arm that negatively impacted efficacy, particularly the primary endpoint of CR rate. The Company continues to follow patients who remain on-study. Based on initial feedback from the FDA and the partial clinical hold on its myeloid malignancy programs, the Company believes that there is no registrational pathway for this Phase 3 trial.

- **Phase 2 MDS/AML Post-Transplant Trial** – In July 2021, the Company announced positive results from a single-arm, open-label Phase 2 clinical trial evaluating eprenetapopt with azacitidine as post-transplant maintenance therapy in *TP53* mutant MDS and AML patients who have received an allogeneic stem cell transplant. The primary endpoint of the trial is the rate of relapse-free survival (RFS) at 12 months. In 33 patients enrolled in the trial, the RFS at one-year post-transplant was 58% and the median RFS was 12.1 months. The overall survival (OS) at 1-year post-transplant was 79% with a median OS at 19.3 months. Prior clinical trials evaluating post-transplant outcomes in *TP53* mutant MDS and AML patients have a reported 1-year post-transplant RFS of ~30% and a median OS of ~5-8 months. As part of the Company's plan to seek to resolve the partial clinical hold, the Company plans to share data with the FDA. The Company also expects to present data from the clinical trial at a future scientific or medical conference.

- **Phase 1/2 AML Trial** – The Company is currently enrolling a Phase 1/2 clinical trial evaluating the safety, tolerability, and preliminary efficacy of eprenetapopt therapy in *TP53* mutant AML patients. The lead-in portion of the trial evaluated the tolerability of eprenetapopt with venetoclax, with or without azacitidine, and no dose-limiting toxicities were observed in 12 patients receiving either regimen. Based on these results, the Company has expanded the trial to treat 33 additional frontline *TP53* mutant AML patients with the combination of eprenetapopt, venetoclax and azacitidine. In June 2021, the Company announced that the regimen of eprenetapopt with venetoclax and azacitidine met the CR primary efficacy endpoint. In 30 patients who were evaluable for efficacy at the time of the analysis, the CR rate was 37% and the complete response rate was CR plus CR with incomplete hematologic recovery (CRi), CR/CRi, was 53%. The trial met the primary efficacy endpoint of CR, which is based on a Simon 2-stage design. As of that data cut, 11 patients remain on study treatment and continue to be followed for safety and efficacy. The Company plans to continue collecting data from this Phase 2 clinical trial and share data with the FDA as part of the Company's effort to resolve the partial clinical hold. The Company also expects to present data from this clinical trial at a future scientific or medical conference.

- **Phase 1 NHL Trial** – The Company is currently enrolling a Phase 1 clinical trial in relapsed/refractory *TP53* mutant chronic lymphoid leukemia (CLL) assessing eprenetapopt with venetoclax and rituximab and eprenetapopt with acalabrutinib in order to further assess eprenetapopt in hematological malignancies. The first patient was enrolled in the first quarter of 2021. The Company intends to work with the FDA to address the specific questions raised, and seek to resolve the clinical hold as soon as possible.

- **Phase 1/2 Solid Tumor Trial** – The Company is currently enrolling a Phase 1/2 clinical trial in relapsed/refractory gastric, bladder and non-small cell lung cancers assessing eprenetapopt with anti-PD-1 therapy. The dose-escalation phase of the trial enrolled 6 patients with advanced solid tumors and no dose-limiting toxicities were observed. Based on these results, the Company is enrolling expansion cohorts for patients with advanced gastric, bladder and non-small cell lung cancers and has currently enrolled 26 patients across these expansion arms. A poster presentation for this trial was presented at the 2021 ASCO Annual Meeting (abstract TPS3161).

- **APR-548 Phase 1 Trial --** The Company's second product candidate, APR-548, is a next-generation p53 reactivator that is being developed in an oral dosage form. The Company has planned a Phase 1 dose-escalation clinical trial evaluating the safety, tolerability, and preliminary efficacy of APR-548 with azacitidine in frontline and relapsed/refractory MDS patients. The Company anticipates the first patient to be enrolled in the second half of 2021.

Second Quarter Financial Results

- **Cash and cash equivalents:** As of June 30, 2021, the Company had $69.8 million of cash and cash equivalents compared to $89.0 million of cash and cash equivalents as of December 31, 2020. The Company expects cash burn for the full year 2021 to be between $30.0 million $35.0 million. The Company believes its cash and cash equivalents as of June 30, 2021, will be sufficient to meet its current projected operating requirements into 2023.

- **Research and Development (R&D) expenses:** R&D expenses were $6.7 million for the quarter ended June 30, 2021, compared to $10.7 million for the comparable period in 2020. The decrease in R&D expenses was primarily due to decreases in clinical trial costs for our pivotal Phase 3 clinical trial of eprenetapopt with azacitidine for the frontline treatment of *TP53* mutant MDS which completed enrollment in Q2 2020 and our Phase 2 post-transplant MDS/AML clinical trial. These decreases were partially offset by increases in clinical trial costs for our other ongoing clinical trials.

- **General and Administrative (G&A) expenses:** G&A expenses were $3.4 million for the quarter ended June 30, 2021, compared to $3.8 million for the comparable period in 2020. The decrease in G&A expenses was primarily due to a decrease in pre-commercialization development activities.

- **Net loss:** Net loss was $10.3 million, or $0.48 per share for the quarter ended June 30, 2021, compared to a net loss of $16.4 million, or $0.78 per share for the quarter ended June 30, 2020. The Company had 21,186,827 shares of common stock outstanding as of June 30, 2021.

About Aprea Therapeutics, Inc.

Aprea Therapeutics, Inc. is a biopharmaceutical company headquartered in Boston, Massachusetts with research facilities in Stockholm, Sweden, focused on developing and commercializing novel cancer therapeutics that reactivate mutant tumor suppressor protein, p53. The Company's lead product candidate is eprenetapopt (APR-246), a small molecule in clinical development for hematologic malignancies and solid tumors. A pivotal Phase 3 clinical trial of eprenetapopt and azacitidine for frontline treatment of *TP53* mutant MDS has been completed and failed to meet the primary statistical endpoint of complete remission. Eprenetapopt is currently on clinical hold in myeloid and lymphoid malignancies. Eprenetapopt has received Breakthrough Therapy, Orphan Drug and Fast Track designations from the FDA for myelodysplastic syndromes (MDS), Orphan Drug and Fast Track designations from the FDA for acute myeloid leukemia (AML), and Orphan Drug designation from the European Commission for MDS and AML. APR-548, a next generation small molecule reactivator of mutant p53, is being developed for oral administration. For more information, please visit the company website at www.aprea.com.

The Company may use, and intends to use, its investor relations website at https://ir.aprea.com/ as a means of disclosing material nonpublic information and for complying with its disclosure obligations under Regulation FD.

Forward-Looking Statement

Certain information contained in this press release includes "forward-looking statements", within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, related to our study analyses, clinical trials, regulatory submissions, and projected cash position. We may, in some cases use terms such as "future," "predicts," "believes," "potential," "continue," "anticipates," "estimates," "expects," "plans," "intends," "targeting," "confidence," "may," "could," "might," "likely," "will," "should" or other words that convey uncertainty of the future events or outcomes to identify these forward-looking statements. Our forward-looking statements are based on current beliefs and expectations of our management team that involve risks, potential changes in circumstances, assumptions, and uncertainties. Any or all of the forward-looking statements may turn out to be wrong or be affected by inaccurate assumptions we might make or by known or unknown risks and uncertainties. These forward-looking statements are subject to risks and uncertainties including risks related to the success and timing of our clinical trials or other studies, risks associated with the coronavirus pandemic and the other risks set forth in our filings with the U.S. Securities and Exchange Commission. For all these reasons, actual results and developments could be materially different from those expressed in or implied by our forward-looking statements. You are cautioned not to place undue reliance on these forward-looking statements, which are made only as of the date of this press release. We undertake no obligation to publicly update such forward-looking statements to reflect subsequent events or circumstances.

Source: Aprea Therapeutics, Inc.

Corporate Contacts:

Scott M. Coiante
Sr. Vice President and Chief Financial Officer
617-463-9385

Gregory A. Korbel
Sr. Vice President and Chief Business Officer
617-463-9385

Aprea Therapeutics, Inc.
Condensed Consolidated Balance Sheets
(Unaudited)

	June 30, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 69,803,845	$ 89,017,686
Prepaid expenses and other current assets	1,494,453	3,399,019
Total current assets	71,298,298	92,416,705
Property and equipment, net	30,955	38,515
Right of use lease and other noncurrent assets	220,477	349,999
Total assets	$ 71,549,730	$ 92,805,219
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 2,361,318	$ 4,503,619
Accrued expenses	8,037,524	10,571,237
Lease liability—current	199,219	256,309
Total current liabilities	10,598,061	15,331,165
Lease liability—noncurrent	--	78,847
Total liabilities	10,598,061	15,410,012
Commitments and contingencies Stockholders' equity:		
Common stock, par value $0.001; 21,186,827 shares issued and outstanding at June 30, 2021 and December 31, 2020, respectively.	21,187	21,187
Additional paid-in capital	235,104,416	231,418,356
Accumulated other comprehensive loss	(10,247,091)	(10,037,261)
Accumulated deficit	(163,926,843)	(144,007,075)
Total stockholders' equity	60,951,669	77,395,207
Total liabilities and stockholders' equity	$ 71,549,730	$ 92,805,219

Aprea Therapeutics, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	**2020**	**2021**	**2020**
Operating expenses:				
Research and development	$ 6,654,257	$ 10,694,029	$ 13,418,105	$ 19,790,151
General and administrative	3,343,325	3,786,886	6,769,158	6,563,354
Total operating expenses	9,997,582	14,480,915	20,187,263	26,353,505
Other income (expense):				
Interest income (expense)	(588)	2,678	(1,645)	227,120
Foreign currency (loss) gain	(252,843)	(1,889,690)	269,140	358,201
Total other income (expense)	(253,431)	(1,887,012)	267,495	585,321
Net loss	$ (10,251,013)	$ (16,367,927)	$ (19,919,768)	$ (25,768,184)
Other comprehensive income (loss):				
Foreign currency translation	193,020	1,756,783	(209,830)	(667,870)
Total comprehensive loss	(10,057,993)	(14,611,144)	(20,129,598)	(26,436,054)
Net loss per share attributable to common stockholders, basic and diluted	$ (0.48)	$ (0.78)	$ (0.94)	$ (1.22)
Weighted-average common shares outstanding, basic and diluted	21,186,827	21,107,056	21,186,827	21,079,891

Exhibit 99.2

Aprea Therapeutics Announces Clinical Hold on Lymphoid Malignancy Program

BOSTON, MA, August 12, 2021 (GLOBE NEWSWIRE) -- Aprea Therapeutics, Inc. (Nasdaq: APRE), a biopharmaceutical company focused on developing and commercializing novel cancer therapeutics that reactivate mutant tumor suppressor protein, p53, today announced that the U.S. Food and Drug Administration (FDA) has placed a clinical hold on its clinical trial evaluating eprenetapopt with acalabrutinib or with venetoclax and rituximab in lymphoid malignancies. No additional patients can be enrolled until the clinical hold is resolved, though patients on study deriving clinical benefit can continue to receive study treatment.

Subsequent to receiving notification of a partial clinical hold on its myeloid malignancies program, Aprea was informed by FDA of a clinical hold on its lymphoid malignancy study. The FDA's concerns referred to the safety and efficacy data from the Phase 3 MDS clinical trial. One CLL patient is currently on study treatment receiving eprenetapopt in combination with venetoclax and rituximab and has achieved complete remission (CR). Aprea intends to work closely with the FDA to address the specific questions raised, and seek to resolve the clinical hold as soon as possible.

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