Spruce Biosciences Presents Phase 1 and 2 Data for Tildacerfont in Adults with Congenital Adrenal Hyperplasia from Endocrine Society's 2021 Annual Meeting

March 17, 2021

Tildacerfont Led to Significant Reductions in Disease Biomarkers Over 12 Weeks

Tildacerfont is First CRF1 Antagonist Studied Beyond Two Weeks in CAH

CAHmelia Program Underway and Enrolling Patients in U.S. and Europe

SAN FRANCISCO--(BUSINESS WIRE)--Mar. 17, 2021-- Spruce Biosciences, Inc. (Nasdaq: SPRB), a late-stage biopharmaceutical company focused on developing and commercializing novel therapies for rare endocrine disorders with significant unmet need, presented data from its Phase 1 and 2 programs of tildacerfont in adults with classic congenital adrenal hyperplasia (CAH) from the Endocrine Society's 2021 Annual Meeting , taking place virtually March 20 – 23, 2021.

"As an investigator in the SPR001-202 trial, I was pleased to see that the reductions of biomarkers with tildacerfont treatment were not only sustained during the 12 weeks but often progressively greater at the later time points, without any new safety concerns during prolonged treatment," said Rich Auchus, MD, PhD, Professor of Internal Medicine and Pharmacology, University of Michigan, Ann Arbor. "These results support ongoing extended studies of tildacerfont for the treatment of classic 21-hydroxylase deficiency."

Dose Escalating and Bioavailability Phase 1 Studies Assessing Safety and Tolerability and Pharmacokinetics of Tildacerfont, A Small-Molecule Oral CRF1 Receptor Antagonist

Poster Session: P04, Adrenal - Basic and Translational Aspects
Abstract Number: 4140

In both single ascending dose and multiple ascending dose studies, tildacerfont was generally safe and well tolerated in healthy adults in single doses up to 800mg as well as in multiple doses up to 200mg once daily, for 14 days. Approximate steady-state exposures were attained within 14 days of dosing.

Further, in a separate bioavailability study, tildacerfont formulated as a tablet provided for a more consistent and more predictable pharmacokinetic profile, as well as demonstrating bioequivalence in overall exposure, compared to a capsule formulation.

Assessment of Steroid Hormones in Both Saliva and Blood During a Phase 2 Clinical Trial for the Use of Tildacerfont in Adults with Classic Congenital Adrenal Hyperplasia

Poster Session: P54, Hormone Actions in Tumor Biology: From New Mechanisms to Therapy
Abstract Number: 4305

SPR001-201 was an open-label, multi-dose, dose-escalation study which evaluated the ability of tildacerfont to reduce adrenal hormones and androgens at doses ranging from 200mg daily to 1,000mg daily in patients with congenital adrenal hyperplasia due to 21-hydroxylase deficiency. Participants in the study underwent concurrent salivary and serum concentration measurements of androstenedione (A4), 17-hydroxyprogesterone (17-OHP) and testosterone (T). Both serum and saliva samples were measured using liquid chromatography-tandem mass spectrometry.

The study demonstrated good correlation between salivary and serum assessments of 17-OHP and A4, indicating that measurement of hormones in saliva may offer a promising, non-invasive approach to more frequently assessing response to therapy in patients with CAH.

Tildacerfont for the Treatment of Patients with Classic Congenital Adrenal Hyperplasia: Results From a 12-week Phase 2 Clinical Trial in Adults with Classic CAH

Poster Session: P25, Endocrine Disrupting Compounds: Mechanisms of Action and Clinical Implications
Abstract Number: 4308

SPR001-202 was an open-label, 12-week Phase 2a clinical trial, which assessed the ability of a daily dose of 400mg of tildacerfont to lower disease-driving hormones such as adrenocorticotropic hormone (ACTH), 17-OHP, and A4 over a 12-week dosing period. Patients were classified into two groups based on disease control using baseline biomarker levels.

Tildacerfont-treated patients with poor disease control had mean maximum reductions of 84% in ACTH, 80% in 17-OHP, and 79% in A4 compared to baseline at 8:00 a.m. This enabled reduction in the levels of these key hormones that are used as targets for assessment of disease control in these patients to near normal levels. In addition, 60% of patients achieved normalization of ACTH levels, and 40% achieved normalization of A4 levels during month three. Normalization of these highly elevated hormones in classic CAH patients within 12 weeks and without increases to daily steroid doses has not been reported to date with any other investigational product candidate. Patients who were in good disease control upon entry to SPR001-202 had mean levels of ACTH, 17-OHP and A4 that were well below the target goal. Administration of tildacerfont to these patients did not lead to significant changes in these levels.

In the Phase 2 program, comprising of studies SPR001-201 and SPR001-202, two homogenous patient groups were identified using ACTH and A4, which classified these patients as either having "poor disease control" or "good disease control." Patients with poor disease control had highly elevated ACTH and A4 levels at baseline, generally greater than twice the upper limit of normal (ULN) and, more commonly, greater than four times the ULN.

These patients with poor disease control were on a stable mean daily supraphysiologic dose of approximately 25mg of hydrocortisone, or a dose of another glucocorticoid equivalent to 25mg of hydrocortisone. Patients with good disease control had elevated 17-OHP levels but had ACTH and A4 generally less than twice the ULN, and more commonly, within the normal bounds for ACTH and A4. These patients were on doses equivalent to a mean daily supraphysiologic dose 36mg of hydrocortisone, which was a 44% higher total daily dose than patients with poor disease control.

“The findings from our Phase 2 program suggest that patients in the poor disease control patient group may have been receiving inadequate glucocorticoid doses to provide adequate control of their disease, possibly due to an inability to tolerate higher doses of glucocorticoids or unwillingness to accept the adverse outcomes attributed to chronic dosing of supraphysiologic glucocorticoids," said Richard King, Chief Executive Officer, Spruce Biosciences. “Our ongoing CAHmelia program is designed to assess both good disease and poor disease control patients. CAHmelia-203 is assessing the ability of tildacerfont to reduce excessive adrenal androgens in patients with poor disease control, while CAHmeila-204 is assessing the ability of tildacerfont to reduce glucocorticoid usage in patients with good disease control while maintaining control of androgens. We believe that our two-study strategy may allow us to observe more clinically meaningful outcomes.”

The presentations are now on display in ENDO 2021’s virtual poster hall. Learn more about the full program and how to access the poster presentation details on the ENDO 2021 website.

About Tildacerfont

Tildacerfont is a potent and highly selective, non-steroidal, oral antagonist of the CRF1 receptor, which is the receptor for corticotropin-releasing factor, or CRF, a hormone that is secreted by the hypothalamus. The CRF1 receptor is abundantly expressed in the pituitary gland where it is the primary regulator of the HPA axis. By blocking the CRF1 receptor, tildacerfont has the potential to address the uncontrolled cortisol feedback regulatory pathway in CAH, and in turn reduce the production of ACTH in the pituitary, limiting the amount of androgen produced downstream from the adrenal gland. Tildacerfont has been evaluated in 171 patients across seven clinical trials in which it has been generally well tolerated. No drug-related SAEs have been reported related to tildacerfont treatment.

About Spruce Biosciences

Spruce Biosciences is a late-stage biopharmaceutical company focused on developing and commercializing novel therapies for rare endocrine disorders with significant unmet need. Spruce is initially developing its wholly-owned product candidate, tildacerfont, as the potential first non-steroidal therapy for patients suffering from classic congenital adrenal hyperplasia (CAH). Classic CAH is a serious and life-threatening disease with no known novel therapies approved in approximately 50 years. Spruce is also developing tildacerfont for women suffering from a rare form of polycystic ovary syndrome (PCOS) with primary adrenal androgen excess, representing 3-5% of females with PCOS (estimated to be 150,000 to 200,000 patients in the United States). To learn more, visit www.sprucebiosciences.com and follow us on Twitter @Spruce_Bio, LinkedIn and Facebook.

Forward-Looking Statements

Statements contained in this press release regarding matters that are not historical facts are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include statements regarding, among other things, the results, conduct, progress and timing of Spruce’s clinical trials. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. Words such as “potential”, “assess” and similar expressions are intended to identify forward-looking statements. These forward-looking statements are based upon Spruce’s current expectations and involve assumptions that may never materialize or may prove to be incorrect. Actual results could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties, which include, without limitation, risks and uncertainties associated with Spruce’s business in general, the impact of the COVID-19 pandemic, and the other risks described in Spruce’s filings with the U.S. Securities and Exchange Commission. All forward-looking statements contained in this press release speak only as of the date on which they were made and are based on management’s assumptions and estimates as of such date. Spruce undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made, except as required by law.

View source version on businesswire.com: https://www.businesswire.com/news/home/20210317005315/en/

Media
Will Zasadny
Canale Communications
(619) 961-8848
will@canalecomm.com
media@sprucebiosciences.com

Investors
Thomas Hoffmann
Solebury Trout
(646) 378-2931
thoffmann@soleburytrout.com
investors@sprucebiosciences.com

Source: Spruce Biosciences, Inc.