January 5, 2021

BioXcel Therapeutics Announces BXCL501 Met the Primary and All Secondary Endpoints in the TRANQUILITY Phase 1b/2 Study for the Acute Treatment of Agitation in Dementia, including Alzheimer's Disease

Statistically significant, clinically meaningful, rapid and durable reductions in agitation achieved with the 60 mcg dose as measured by multiple agitation scales

BXCL501 was well tolerated with no severe or serious adverse events

Results provide a clear path toward initiating a pivotal program for BXCL501 in dementia

Agitation associated with dementia affects an estimated 4 million patients in the U.S.

Company to host conference call today at 8:30 a.m. ET

NEW HAVEN, Conn., Jan. 05, 2021 (GLOBE NEWSWIRE) -- BioXcel Therapeutics, Inc. ("BioXcel" or the "Company") (Nasdaq: BTAI), a clinical-stage biopharmaceutical company utilizing artificial intelligence to identify improved therapies in neuroscience and immuno-oncology, today announced that BXCL501, the Company's proprietary, orally dissolving thin film formulation of dexmedetomidine, met the primary and secondary endpoints of the TRANQUILITY trial at the 60 mcg dose level. Topline results from the evaluated doses showed that BXCL501 was generally well tolerated, with rapid and durable reductions observed in measures of acute agitation with the 60 mcg dose.

The TRANQUILITY Phase 1b/2 randomized, placebo controlled, adaptive, ascending dose finding study enrolled 54 patients in assisted living facilities with agitation related to dementia, 87 percent of which had Alzheimer's disease. Patients received BXCL501 at either 30 mcg (n=16), 60 mcg (n=20), 90 mcg (n=4) or placebo (n=14). The study's primary safety and tolerability endpoints were met, with no severe or serious adverse events reported. Adverse events in the trial included hypotension (10%, 0% and 0%, for 60 mcg, 30 mcg and placebo, respectively), orthostatic hypotension (5%, 6.3% and 0%, respectively) and dizziness (5%, 6.3% and 0%, respectively). The most common adverse event was somnolence characterized as either mild (55% for 60 mcg, 50% for 30 mcg and 7.1% for placebo) or moderate (5%, 0% and 0%, respectively). Orthostasis and dizziness were observed in some patients receiving the highest 90 mcg dose. Higher exposure levels of BXCL501 were observed in this elderly patient population compared to earlier trials and, as a result, the Company focused on studying the 30 and 60 mcg doses. Notably, there were no

reported cases of syncope or falls in any of the patients studied.

The trial met its secondary efficacy endpoints with the 60 mcg dose compared to placebo in all three primary agitation scales—the Positive and Negative Syndrome Scale-Excitatory Component ("PEC"), the Pittsburgh Agitation Scale ("PAS"), and the Modified Cohen-Mansfield Agitation Inventory ("Mod-CMAI")—demonstrating statistically significant and clinically meaningful reductions in total scores at two hours post-dosing. The reductions were both rapid and durable with numerical separation from placebo in PEC total score seen as early as 30 minutes, and with statistically significant separation from placebo in both PEC and PAS total scores observed at 60 minutes* and lasting through eight hours post-dosing. The 30 mcg dose cohort showed numerical improvements at all three measures.

Outcomes from the PEC, PAS, and Mod-CMAI for the 60 mcg, 30 mcg and placebo cohorts are below.

Summary of Topline Efficacy Results at 120 Minutes

	60 mcg (n=20)	**30 mcg (n=16)**	**Placebo (n=14)**
Reduction in PEC Total Score vs. Baseline	-7.1 (P=0.0011)	-5.4 (P=0.0813)	-2.9
Response Rate (% of Patients Achieving >40% Reduction in PEC Scores)	70%	25%	7%
Reduction in PAS Total Score vs. Baseline	-5.9 (P<0.0001)	-3.9 (P=0.0961)	-2.5
Reduction in Mod-CMAI Total Score vs. Baseline*	-14.0 (P<0.0001)	-8.0 (P=0.0591)	-3.2

* Mod-CMAI was not measured at 60 minutes

Efficacy was further evaluated using two additional measures of agitation-— the Agitation and Calmness Evaluation Scale ("ACES"; P=0.0006) and Clinical Global Impression – Improvement Scale ("CGI-I"; P<0.0001; 90% responder rate)—each of which showed statistically significant improvements in ratings with the 60 mcg dose level compared to placebo at two hours post-dosing. The 30 mcg dose cohort showed numerically greater rates of clinical response versus placebo.

"We are very encouraged by the promising topline results from the TRANQUILITY study, which was designed to identify a recommended dose of BXCL501 for a potential pivotal study in dementia patients suffering from agitation. Following decades of research, there are still no effective treatments that directly target agitation commonly seen with dementia patients, and we are thrilled by the potential of being the first to develop a therapy designed to address this significant patient and caregiver need," said Vimal Mehta, Chief Executive Officer of BioXcel. "Based on the results observed, we believe BXCL501 has broad potential in treating the full spectrum of agitation in patients with dementia. We look forward to advancing BXCL501 into a late-stage study this year following dialogue with the FDA."

About TRANQUILITY

The randomized, double-blind, placebo-controlled, ascending dose, adaptive Phase 1b/2 study was designed to evaluate the efficacy, pharmacokinetics, safety, and tolerability of BXCL501 in adults 65 years and older who exhibit acute agitation associated with all forms of dementia, including Alzheimer's disease. Following the completion of each dose cohort, a safety and tolerability review was performed to determine the next tested dose. The study is designed to assess agitation as measured by the changes from baseline in PAS and PEC total scores, as well as by improvements from baseline in the Mod-CMAI total score.

Conference Call

BioXcel will host a conference call and webcast today at 8:30 a.m. ET. To access the call, please dial 877-407-2985 (domestic) and 201-378-4915 (international). A live webcast of the call will be available on the Investors sections of the BioXcel website at www.bioxceltherapeutics.com. The replay will be available through January 19, 2020.

About Agitation Associated with Dementia

Dementia is a neurocognitive condition caused by damage to brain cells that leads to a decline in cognitive abilities and independent function. It affects approximately 6 million individuals in the United States, with Alzheimer’s disease accounting for up to 80% of these cases. During the course of the disease, patients with dementia often suffer from psychological and behavioral symptoms, such as agitation, which has been reported in up to 70% of patients. Agitation associated with dementia can negatively affect both the patient and caregiver’s quality of life. Caregiver burden can contribute significantly to burnout, which can result in premature institutionalization of the patient. Treating agitation associated with dementia has been a challenge for providers as there are currently no FDA-approved therapies for the treatment of dementia-related agitation, and off-label therapies have black box warnings associated with their use.

About the Positive and Negative Syndrome Scale-Excitatory Component Score (PEC or PANSS-EC)

The PEC total score is a validated endpoint for measuring acute agitation in schizophrenia and bipolar patients. This scale is used in clinical research to quantify the severity of a patient’s acute agitation. The PEC rating evaluates 5 elements associated with agitation: poor impulse control, tension, hostility, uncooperativeness, and excitement; each scored 1 (minimum) to 7 (maximum). The PEC total score is the sum of these 5 elements and thus ranges from 5 to 35.

About the Pittsburgh Agitation Scale (PAS)

PAS is a validated instrument used to monitor the severity of agitation associated with dementia. The PAS measures 4 behavior groups: aberrant vocalization, motor agitation, aggressiveness, and resisting to care. The groups are evaluated on a scale from 0 to 4, with 0 defined as no agitation present and 4 defined as the highest form of agitation. The PAS total score ranges from 0 to 16.

Modified Cohen-Mansfield Agitation Inventory (Mod-CMAI)

Mod-CMAI is an inventory consisting of 29 behaviors, each rated on a 7-point scale of frequency with 1 defined as never occurring and 7 defined as several times an hour. Only behaviors manifested by the subject at baseline were assessed throughout the study.

About BXCL501

BXCL501 is an investigational, proprietary, orally dissolving thin film formulation of dexmedetomidine, a selective alpha-2a receptor agonist for the treatment of agitation and opioid withdrawal symptoms. BioXcel believes that BXCL501 directly targets a causal agitation mechanism, and the Company has observed anti-agitation results in multiple clinical studies across several neuropsychiatric disorders. BXCL501 has been granted Fast Track Designation by the U.S. Food and Drug Administration for the acute treatment of agitation in patients with schizophrenia, bipolar disorders, and dementia. BXCL501 has been studied in two Phase 3 trials (SERENITY I and II) for the acute treatment of agitation associated with schizophrenia and bipolar disorders. This product candidate was also evaluated in a Phase 1b/2 trial (TRANQUILITY) for the acute treatment of agitation associated with dementia and is currently being evaluated in a Phase 1b/2 study (RELEASE) for the treatment of opioid withdrawal symptoms. The Company also plans to initiate a Phase 2 trial in hospitalized patients suffering from agitation associated with delirium within the next several months.

BioXcel Therapeutics, Inc.

BioXcel Therapeutics, Inc. is a clinical-stage biopharmaceutical company focused on drug development that utilizes artificial intelligence to identify improved therapies in neuroscience and immuno-oncology. BioXcel's drug re-innovation approach leverages existing approved drugs and/or clinically evaluated product candidates together with big data and proprietary machine learning algorithms to identify new therapeutic indices. BioXcel's two most advanced clinical development programs are BXCL501, an investigational sublingual thin film formulation in development for acute treatment of agitation resulting from neuropsychiatric disorders, and BXCL701, an investigational orally administered systemic innate immunity activator in development for treatment of a rare form of prostate cancer and for treatment of pancreatic cancer in combination with other immuno-oncology agents. For more information, please visit www.bioxceltherapeutics.com.

Forward-Looking Statements

This press release includes “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements in this press release include but are not limited to the timing and data from clinical development initiatives and trials for BXCL501, dialogue with the FDA and the future development of BXCL501, and the Company’s corporate strategy. When used herein, words including “anticipate,” “being,” “will,” “plan,” “may,” “continue,” and similar expressions are intended to identify forward-looking statements. In addition, any statements or information that refer to expectations, beliefs, plans, projections, objectives, performance, or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking. All forward-looking statements are based upon BioXcel's current expectations and various assumptions. BioXcel believes there is a reasonable basis for its expectations and beliefs, but they are inherently uncertain.

BioXcel may not realize its expectations, and its beliefs may not prove correct. Actual results could differ materially from those described or implied by such forward-looking statements as a result of various important factors, including, without limitation, its limited operating history; its incurrence of significant losses; its need for substantial additional funding and ability to raise capital when needed; its limited experience in drug discovery and drug development; its dependence on the success and commercialization of BXCL501 and BXCL701 and other product candidates; the failure of preliminary data from its clinical studies to predict final study results; failure of its early clinical studies or preclinical studies to predict future clinical studies; its ability to receive regulatory approval for its product candidates; its ability to enroll patients in its clinical trials; undesirable side effects caused by BioXcel's product candidates; its approach to the discovery and development of product candidates based on EvolverAI is novel and unproven; its exposure to patent infringement lawsuits; its ability to comply with the extensive regulations applicable to it; impacts from the COVID-19 pandemic; its ability to commercialize its product candidates; and the other important factors discussed under the caption "Risk Factors" in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2020, as such factors may be updated from time to time in its other filings with the SEC, which are accessible on the SEC's website at www.sec.gov and the Investors section of our website at www.bioxceltherapeutics.com.

These and other important factors could cause actual results to differ materially from those indicated by the forward-looking statements made in this press release. Any such forward-looking statements represent management's estimates as of the date of this press release. While BioXcel may elect to update such forward-looking statements at some point in the future, except as required by law, it disclaims any obligation to do so, even if subsequent events cause our views to change. These forward-looking statements should not be relied upon as representing BioXcel's views as of any date subsequent to the date of this press release.

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