Neurocrine Biosciences Presents New Data Analyses Demonstrating Long-Term Effects of INGREZZA® (valbenazine) 40 mg Once-Daily in Patients with Tardive Dyskinesia at the 2019 Annual Psych Congress

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- Pooled Data Analyses from Long-Term Studies Show that the 40 mg Once-Daily Dose of INGREZZA is Effective in Reducing Abnormal Movements in Adults with Tardive Dyskinesia

- Data Analysis Indicates that INGREZZA Improved Tardive Dyskinesia Movements as Early as Two Weeks in 50% of Patients

- Long-Term Meaningful Reductions in Tardive Dyskinesia Movement Severity Were Demonstrated Regardless of Whether Patients Responded After Two Weeks

SAN DIEGO, Oct. 4, 2019 /PRNewswire/ -- Neurocrine Biosciences, Inc. (NASDAQ: NBIX) today announced data from pooled analyses demonstrating the long-term benefit of the once-daily 40 mg dose of INGREZZA® (valbenazine) capsules in reducing abnormal movements in adults with tardive dyskinesia (TD), a potentially irreversible and often persistent involuntary movement disorder. The analyses of pooled data from multiple long-term studies of the 40 mg dose showed that 53.7% of patients taking 40 mg of INGREZZA achieved an Abnormal Involuntary Movement Scale (AIMS) response (≥ 50% improvement from baseline) after 48 weeks of treatment. INGREZZA is available in two doses, 40 mg and 80 mg. Additionally, an analysis of the pivotal Phase III KINECT 3 data demonstrated that 50% of patients achieved an early response after two weeks of INGREZZA treatment (40 mg or 80 mg). Data also showed that meaningful long-term reductions in TD were achieved regardless of whether patients responded after two weeks. These long-term INGREZZA data were presented today at the 2019 Annual Psych Congress in San Diego.

"Tardive dyskinesia is a persistent and often irreversible movement disorder, and it can look and feel different from one patient to another, with each patient having distinct treatment needs," said Craig Chepke, M.D., Adjunct Assistant Professor of Psychiatry, University of North Carolina School of Medicine. "Long-term data from the pooled analyses are important as they show that the 40 mg dose of INGREZZA is effective in reducing the troublesome movements of tardive dyskinesia in over 50% of patients. Many patients feel embarrassed, endure social isolation and experience even greater stigma associated with their existing mental illness, so having two effective dosing options of INGREZZA gives healthcare providers a choice in what will work best to manage the burdensome and disruptive involuntary movements associated with tardive dyskinesia."

INGREZZA is the first U.S. Food and Drug Administration (FDA) approved treatment for adults with TD, a movement disorder that is characterized by uncontrollable, abnormal and repetitive movements of the face, torso and/or other body parts. The abnormal and involuntary movements of TD can impact patients socially, emotionally and physically, causing patients to feel embarrassed or judged by others or withdraw from society and isolate themselves.

"The analyses of pooled data continue to support the growing body of evidence that INGREZZA is an effective treatment for the long-term management of tardive dyskinesia," said Eiry W. Roberts, M.D., Chief Medical Officer at Neurocrine Biosciences. "It is important to choose the best dosing option of INGREZZA and continue treatment to achieve long-term outcomes as tardive dyskinesia varies from patient to patient as well as their treatment response."

Data from pooled analyses of long-term clinical studies, KINECT 3 and KINECT 4, showed that 53.7% of patients taking 40 mg of INGREZZA (n=54) achieved an AIMS response (≥ 50% improvement from baseline) after 48 weeks of treatment and 65.5% of patients (n=55) demonstrated a Clinical Global Impression of Change-Tardive Dyskinesia (CGI-TD) response (defined as "very much improved" or "much improved"). Additionally, dose reductions from 80 mg to 40 mg did not appear to compromise the long-term benefit of INGREZZA.

Neurocrine Biosciences also presented a post-hoc analysis of KINECT 3, the pivotal Phase III study, indicating that both the 40 mg and 80 mg doses of INGREZZA improved TD as early as two weeks in adults with TD, as measured by global clinician and patient scales. Results showed that 50% of

patients (n=143) reached an early response threshold by patient-reported assessment (Patient Global Impression of Change [PGIC]; score ≤ 3 at Week 2), while 43% achieved an early response by clinician judgement (CGI-TD; score ≤ 3 at Week 2). Long-term reductions in TD symptom severity were meaningful regardless of early response as indicated by both PGIC and CGI-TD improvement.

In the studies, INGREZZA was generally well tolerated with no new safety concerns observed, and patients had no notable worsening of psychiatric symptoms. The most common adverse reactions (≥5% and twice the rate of placebo) during the 6-week double-blind, placebo-controlled phase was somnolence.

About the KINECT 3 Phase III Study
KINECT 3 is a Phase III, randomized, double-blind, placebo-controlled, parallel-group, fixed-dose study, in which 234 participants with moderate to severe TD and underlying schizophrenia, schizoaffective disorder or mood disorder (including bipolar disorder or major depressive disorder) received six weeks of once-daily INGREZZA (40 mg or 80 mg capsules) or placebo (participants randomized to 80 mg started on 40 mg for 1 week). Subsequent to the completion of the six-week placebo-controlled dosing, participants receiving INGREZZA continued on their current dose and placebo participants were randomized to receive either once-daily 40 mg or once-daily 80 mg of INGREZZA, through week 48 (42-week blinded treatment extension period; placebo participants randomized to 80 mg started on 40 mg for 1 week), followed by a 4-week drug-free washout. Dose reduction to 40 mg was allowed for participants who were unable to tolerate the 80 mg dose. Patients were discontinued if the new dose was not tolerated.

The study met its primary endpoint of change-from-baseline in AIMS at week six in the 80 mg once-daily dosing group compared to placebo as assessed by expert central blinded video raters. The mean change from baseline to week six in the AIMS rating was -3.2 for the 80 mg once-daily group as compared to -0.1 in the placebo group ($p>0.0001$). Sustained TD improvements were seen with INGREZZA 40 mg and 80 mg through week 48.

INGREZZA was generally well tolerated throughout 48 weeks of treatment. The most common adverse reactions (≥5% and twice the rate of placebo) during the 6-week double-blind, placebo-controlled phase was somnolence with the frequency of adverse events being similar among all treatment groups. Treatment emergent adverse events (TEAEs) were consistent with those of prior studies. There were no drug-drug interactions identified in participants who were utilizing a wide range of psychotropic and other concomitant medications and participants generally remained psychiatrically stable throughout the study.

About the KINECT 4 Phase III Study
KINECT 4 is a Phase III, open-label study, in which 163 participants with moderate-to-severe TD and underlying schizophrenia, schizoaffective disorder or mood disorder (including bipolar disorder or major depressive disorder) received 48 weeks of open-label treatment with once-daily INGREZZA (40 mg or 80 mg capsules) followed by a 4-week washout. Dosing was initiated at 40 mg/day in all participants, with escalation to 80 mg/day at week 4 based on effectiveness and tolerability. Dose reduction to 40 mg was allowed in participants who could not tolerate the 80 mg dose. Patients were discontinued if the new dose was not tolerated.

Participants experienced TD improvements during long-term treatment as demonstrated by mean change from baseline to week 48 in AIMS total score (sum of items 1-7, evaluated by site raters) with INGREZZA 40 mg/day (-10.2) or 80 mg/day (-11.0). Consistent with previous studies, INGREZZA was generally well tolerated. After week 4, TEAEs that occurred in ≥5% of all participants (combined dose groups) were urinary tract infection (8.5%) and headache (5.2%). Change from baseline in psychiatric stability, vital signs, electrocardiogram parameters, and laboratory test values were generally small and not clinically significant.

About Tardive Dyskinesia (TD)
Tardive dyskinesia (TD) is a movement disorder that is characterized by uncontrollable, abnormal and repetitive movements of the face, torso and/or other body parts, which may be disruptive and negatively impact patients. The condition is caused by prolonged use of treatments that block dopamine receptors in the brain, such as antipsychotics commonly prescribed to treat mental illnesses such as schizophrenia, bipolar disorder and depression, and certain anti-nausea medications. In patients with TD, these treatments are thought to result in irregular dopamine signaling in a region of the brain that controls movement. The symptoms of TD can be severe and are often persistent and irreversible. TD is estimated to affect at least 500,000 people in the U.S.

About INGREZZA® (valbenazine) Capsules
INGREZZA, a selective vesicular monoamine transporter 2 (VMAT2) inhibitor, is the first FDA-approved product indicated for the treatment of adults with tardive dyskinesia, a condition associated with uncontrollable, abnormal and repetitive movements of the face, torso and/or other body parts.

INGREZZA is thought to work by reducing the amount of dopamine released in a region of the brain that controls movement and motor function, helping to regulate nerve signaling in adults with tardive dyskinesia. VMAT2 is a protein in the brain that packages neurotransmitters, such as dopamine, for transport and release in presynaptic neurons. INGREZZA, developed in Neurocrine's laboratories, is novel in that it selectively inhibits VMAT2 with no appreciable binding affinity for VMAT1, dopaminergic (including D2), serotonergic, adrenergic, histaminergic, or muscarinic receptors. Additionally, INGREZZA can be taken for the treatment of tardive dyskinesia as one capsule, once-daily, together with psychiatric medications such as antipsychotics or antidepressants.

Important Safety Information

Contraindications
INGREZZA is contraindicated in patients with a history of hypersensitivity to valbenazine or any components of INGREZZA. Rash, urticaria, and reactions consistent with angioedema (e.g., swelling of the face, lips, and mouth) have been reported.

Warnings & Precautions
Somnolence
INGREZZA can cause somnolence. Patients should not perform activities requiring mental alertness such as operating a motor vehicle or operating hazardous machinery until they know how they will be affected by INGREZZA.

QT Prolongation
INGREZZA may prolong the QT interval, although the degree of QT prolongation is not clinically significant at concentrations expected with recommended dosing. INGREZZA should be avoided in patients with congenital long QT syndrome or with arrhythmias associated with a prolonged

QT interval. For patients at increased risk of a prolonged QT interval, assess the QT interval before increasing the dosage.

Parkinsonism
INGREZZA may cause parkinsonism in patients with tardive dyskinesia. Parkinsonism has also been observed with other VMAT2 inhibitors. Reduce the dose or discontinue INGREZZA treatment in patients who develop clinically significant parkinson-like signs or symptoms.

Adverse Reactions
The most common adverse reaction (≥5% and twice the rate of placebo) is somnolence. Other adverse reactions (≥2% and >placebo) include: anticholinergic effects, balance disorders/falls, headache, akathisia, vomiting, nausea, and arthralgia.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit MedWatch at **www.fda.gov/medwatch** or call 1-800-FDA-1088.

Please see INGREZZA full Prescribing Information at www.INGREZZA.com/PI.

About Neurocrine Biosciences, Inc.
Neurocrine Biosciences (Nasdaq: NBIX) is a neuroscience-focused, biopharmaceutical company with more than 25 years of experience discovering and developing life-changing treatments for people with serious, challenging and under-addressed neurological, endocrine and psychiatric disorders. The company's diverse portfolio includes FDA-approved treatments for tardive dyskinesia and endometriosis* and clinical development programs in multiple therapeutic areas including Parkinson's disease, congenital adrenal hyperplasia, uterine fibroids* and polycystic ovary syndrome*. Headquartered in San Diego, Neurocrine Biosciences specializes in targeting and interrupting disease-causing mechanisms involving the interconnected pathways of the nervous and endocrine systems. For more information, visit neurocrine.com, and follow the company on LinkedIn. *(*in collaboration with AbbVie)*

Forward-Looking Statements
In addition to historical facts, this press release contains forward-looking statements that involve a number of risks and uncertainties. These statements include, but are not limited to, statements related to the benefits to be derived by patients from INGREZZA. Among the factors that could cause actual results to differ materially from those indicated in the forward-looking statements are: risks and uncertainties associated with the commercialization of INGREZZA; risks associated with the Company's dependence on third parties for development and manufacturing activities related to INGREZZA, and the ability of the Company to manage these third parties; risks that the FDA or other regulatory authorities may make adverse decisions regarding INGREZZA; risks that clinical development activities may be delayed for regulatory or other reasons, may not be successful or replicate previous clinical trial results, may fail to demonstrate that our product candidates are safe and effective, or may not be predictive of real-world results or of results in subsequent clinical trials; risks that INGREZZA may be precluded from commercialization or continued commercialization by the proprietary or regulatory rights of third parties, or have unintended side effects, adverse reactions or incidents of misuse; and other risks described in the Company's periodic reports filed with the Securities and Exchange Commission, including without limitation the Company's quarterly report on Form 10-Q for the quarter ended June 30, 2019. Neurocrine disclaims any obligation to update the statements contained in this press release after the date hereof.

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SOURCE Neurocrine Biosciences, Inc.

Neurocrine Biosciences, Navjot Rai (Media), 858-617-7623, media@neurocrine.com Todd Tushla (Investors), 858-617-7143, ir@neurocrine.com