ACADIA Pharmaceuticals Presents New Data on PD Patients Treated with Pimavanserin for Depression at the 2019 International Congress of Parkinson's Disease and Movement Disorders

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- Pimavanserin as monotherapy or adjunct to SSRI/SNRI therapies significantly improved depression symptoms for Parkinson's patients

SAN DIEGO--(BUSINESS WIRE)--Sep. 23, 2019-- ACADIA Pharmaceuticals Inc. (Nasdaq: ACAD) today announced positive results from an 8-week, open-label, single-arm Phase 2 study evaluating an investigational use and safety of pimavanserin as a monotherapy or adjunct to selective serotonin reuptake inhibitor (SSRI) or selective norepinephrine reuptake inhibitor (SNRI) therapy for Parkinson's disease (PD) patients with depressive symptoms. These results were presented today during a poster session at the 2019 International Congress of Parkinson's Disease and Movement Disorders® (MDS) in Nice, France.

Data reported in the study poster, "Open-Label Study of Pimavanserin in Patients With Comorbid Parkinson's Disease and Depression" showed that PD patients (n=47) treated with pimavanserin for depressive symptoms had significant improvement on the primary endpoint, the 17-item Hamilton Depression Rating Scale (HAMD-17) total score from the change in baseline to week 8 ($p<0.0001$), with significant improvement seen as early as week 2 ($p<0.0001$). Improvement of ≥50% on the HAMD-17 total score was observed in 60.0% of patients at week 8, with 44.4% of patients reaching remission (HAMD-17 ≤7).

"Mood disorders, particularly depression, occur in approximately 50% of patients with PD, and depressive symptoms in patients with PD are associated with diminished quality of life, greater disability, and faster progression of physical symptoms," said Gus Alva, M.D., Founder and Medical Director of ATP Clinical Research and co-author of the study. "Results of this open-label study suggest that pimavanserin may be a potential treatment to be further investigated for depression associated with Parkinson's disease."

Additional results from this study showed that PD patients treated with pimavanserin for depression also demonstrated improvement on multiple secondary endpoints compared to baseline, including the Clinical Global Impression-Severity scale (baseline to week 8, $p<0.0001$), Clinical Global Impression-Improvement scores (decreased from 2.5 at week 2 to 2.0 at week 8), SCOPA-night-time sleep and SCOPA-day-time sleep scales showed significant improvements in all three measures by week 4 that were maintained through week 8, in addition to SCOPA-Global Sleep Quality scale, which improved significantly (baseline to week 8, $p<0.0001$). In the study, pimavanserin was well tolerated and treatment emergent adverse events (TEAE) reported were consistent with other studies of patients treated with pimavanserin. TEAE reported included: falls (8.5%), nausea (6.4%), diarrhoea (4.3%), oedema (4.3%), skin abrasion (4.3%), and urinary tract infection (4%).

"We are pleased with the exploratory study results which show a positive treatment effect with pimavanserin for depression in patients with Parkinson's disease," said Serge Stankovic, M.D., M.S.P.H., ACADIA's President. "These results are also consistent to those observed in our Phase 2 study with pimavanserin as an adjunctive treatment for patients with an inadequate response to existing first-line SSRI/SNRI therapy for major depressive disorder. We are committed to continued research for pimavanserin to address unmet medical needs in central nervous system disorders, including our ongoing Phase 3 clinical program in major depressive disorder."

About Pimavanserin

Pimavanserin is a selective serotonin inverse agonist and antagonist preferentially targeting 5-HT_{2A} receptors. These receptors are thought to play an important role in psychosis, schizophrenia, depression, and other neuropsychiatric disorders. In vitro, pimavanserin demonstrated no appreciable binding affinity for dopamine (including D2), histamine, muscarinic, or adrenergic receptors. ACADIA is evaluating pimavanserin in an extensive clinical development program across multiple indications with significant unmet need including dementia-related psychosis, adjunctive major depressive disorder, and the negative symptoms of schizophrenia. Pimavanserin was approved for the treatment of hallucinations and delusions associated with Parkinson's disease psychosis by the U.S. Food and Drug Administration in April 2016 under the trade name NUPLAZID®. NUPLAZID is not approved for dementia-related psychosis, schizophrenia, major depressive disorder or depression in patients with Parkinson's disease.

About ACADIA Pharmaceuticals

ACADIA is a biopharmaceutical company focused on the development and commercialization of innovative medicines to address unmet medical needs in central nervous system disorders. ACADIA has developed and commercialized the first and only medicine approved for the treatment of hallucinations and delusions associated with Parkinson's disease psychosis. ACADIA also has ongoing clinical development efforts in additional areas with significant unmet need, including dementia-related psychosis, schizophrenia, major depressive disorder, and Rett syndrome. This press release and further information about ACADIA can be found at: www.acadia-pharm.com.

Forward-Looking Statements

Statements in this press release that are not strictly historical in nature are forward-looking statements. These statements include, but are not limited to, statements related to: the potential benefits of pimavanserin for central nervous system disorders as well as the potential results of clinical trials of pimavanserin in other indications. These statements are only predictions based on current information and expectations and involve a number of risks and uncertainties. Actual events or results may differ materially from those projected in any of such statements due to various factors, including the risks and uncertainties inherent in drug development, approval and commercialization, and the fact that past results of clinical trials may not be indicative of future trial results. For a discussion of these and other factors, please refer to ACADIA's annual report on Form 10-K for the year ended December 31, 2018 as well as ACADIA's subsequent filings with the Securities and Exchange Commission. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. This caution is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All forward-looking statements are qualified in their entirety by this cautionary statement and ACADIA

undertakes no obligation to revise or update this press release to reflect events or circumstances after the date hereof, except as required by law.

Important Safety Information and Indication for NUPLAZID (pimavanserin)

WARNING: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

- **Elderly patients with dementia-related psychosis treated with antipsychotic drugs are at an increased risk of death.**
- **NUPLAZID is not approved for the treatment of patients with dementia-related psychosis unrelated to the hallucinations and delusions associated with Parkinson's disease psychosis.**
- **Contraindication**: NUPLAZID is contraindicated in patients with a history of a hypersensitivity reaction to pimavanserin or any of its components. Rash, urticaria, and reactions consistent with angioedema (e.g., tongue swelling, circumoral edema, throat tightness, and dyspnea) have been reported.
- **QT Interval Prolongation**: NUPLAZID prolongs the QT interval.
    - The use of NUPLAZID should be avoided in patients with known QT prolongation or in combination with other drugs known to prolong QT interval including Class 1A antiarrhythmics or Class 3 antiarrhythmics, certain antipsychotic medications, and certain antibiotics.
    - NUPLAZID should also be avoided in patients with a history of cardiac arrhythmias, as well as other circumstances that may increase the risk of the occurrence of torsade de pointes and/or sudden death, including symptomatic bradycardia, hypokalemia or hypomagnesemia, and presence of congenital prolongation of the QT interval.
- **Adverse Reactions**: The most common adverse reactions (≥2% for NUPLAZID and greater than placebo) were peripheral edema (7% vs 2%), nausea (7% vs 4%), confusional state (6% vs 3%), hallucination (5% vs 3%), constipation (4% vs 3%), and gait disturbance (2% vs <1%).
- **Drug Interactions**:
    - Coadministration with strong CYP3A4 inhibitors (e.g., ketoconazole) increases NUPLAZID exposure. Reduce NUPLAZID dose to 10 mg taken orally as one tablet once daily.
    - Coadministration with strong or moderate CYP3A4 inducers reduces NUPLAZID exposure. Avoid concomitant use of strong or moderate CYP3A4 inducers with NUPLAZID.

Indication: NUPLAZID is indicated for the treatment of hallucinations and delusions associated with Parkinson's disease psychosis.

Dosage and Administration: Recommended dose: 34 mg capsule taken orally once daily, without titration.

NUPLAZID is available as 34 mg capsules and 10 mg tablets.

Please see the full Prescribing Information including **Boxed WARNING** for NUPLAZID.

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