Takeda and Ovid Therapeutics Expand Clinical Program for TAK-935/OV935 with Three New Studies in Rare Developmental and Epileptic Encephalopathies (DEE)

Broad clinical program to include three studies expected to begin in the third quarter of calendar year 2018 in addition to the now fully enrolled Phase 1b/2a trial of adults with DEE

Two rare disorders, CDKL5 deficiency disorder and Duplication 15q syndrome, added to TAK-935/OV935 clinical development

Osaka, Japan and New York, NY, July 18, 2018 — Takeda Pharmaceutical Company Limited [TSE: 4502] ("Takeda") and Ovid Therapeutics Inc. (NASDAQ: OVID) today provided an overview of their TAK-935/OV935 broad clinical development program. The companies plan to initiate three clinical trials: in pediatric patients with Dravet syndrome and Lennox-Gastaut syndrome, in pediatric patients with CDKL5 deficiency disorder (CDD) and Duplication 15q (Dup15q) syndrome, and an extension trial for patients with developmental and epileptic encephalopathies (DEEs) who participated in a previous TAK-935/OV935 clinical study. These trials join the clinical development program that includes a fully enrolled Phase 1b/2a trial of adults with DEE. Together, these trials will further investigate the potential of TAK-935/OV935 to modulate the N-Methyl-D-Aspartate (NMDA) signaling receptor, which has been implicated in several neurologic disorders.

"Takeda and Ovid believe that TAK-935/OV935, with its novel mechanism of action, may have the potential to treat rare epilepsies." said Emiliangelo Ratti, Head of the Neuroscience Therapeutic Area Unit at Takeda. "The expansion of our clinical program to include pediatric populations, and additional rare epilepsies, exemplifies our joint commitment to identify an innovative treatment option for DEE."

DEE is a term for a specific group of rare epilepsy conditions that typically present early in life and are often associated with severe cognitive and developmental impairment in addition to frequent treatment-resistant seizures throughout the person's lifetime. These disorders vary in age of onset, developmental outcomes, etiologies, neuropsychological deficits.[i]

"Together with Takeda, we continue to make significant progress in our broad development program of TAK-935/OV935 across a range of rare epilepsies and age groups," said Jeremy Levin, DPhil, MB, BChir, chairman and chief executive officer of Ovid Therapeutics. "The advancement of our development program into younger patients and those with CDKL5 deficiency or Duplication 15q syndrome reflects the strength and quality of our alliance. Takeda's global reach and operational expertise have been outstanding and with our shared

capabilities and commitment, we hope to make a difference for many individuals living with rare epilepsies who have few or limited treatment options."

The Three Planned Clinical Studies Are:

- ***Phase 2 ARCADE Trial:*** The ARCADE trial is a Phase 2, multicenter, open-label, pilot study designed to evaluate pediatric patients, aged 2 to 17 years old, with either CDD or Dup15q syndrome. The study will enroll approximately 30 patients (about 15 children with each syndrome). The primary objective of this study is to assess the frequency of motor seizures in patients treated with TAK-935/OV935. The key secondary objectives are safety, tolerability and pharmacokinetic (PK) assessments.
- ***Phase 2 ELEKTRA Trial:*** The ELEKTRA trial is a Phase 2, multicenter, randomized, double-blind, placebo controlled, study designed to evaluate the efficacy, safety and tolerability of TAK-935/OV935 in pediatric patients, aged 2 to 17 years old, with Dravet syndrome or Lennox-Gastaut syndrome. The study is expected to enroll approximately 125 patients. The primary objective of this study is to assess the frequency of seizures in patients treated with TAK-935/OV935 compared to placebo. The key secondary objectives are safety, tolerability and PK assessments.
- ***ENDYMION:*** The planned trial is a multi-center, open-label, long-term extension study of TAK-935/OV935 in patients with DEEs who participated in a previous TAK-935/OV935 clinical study. The primary objective is to assess the long-term safety and tolerability of TAK-935/OV935 over two years of treatment in patients with rare epilepsies. A secondary endpoint will evaluate the effect of TAK-935/OV935 on seizure frequency over two years.

About Investigational TAK-935/OV935

TAK-935/OV935 is a potent, highly-selective, first-in-class inhibitor of the enzyme cholesterol 24-hydroxylase (CH24H) being investigated as an anti-epileptic drug (AED). CH24H is predominantly expressed in the brain, where it plays a central role in cholesterol homeostasis. CH24H converts cholesterol to 24-hydroxycholesterol (24HC), which then exits the brain into the blood plasma circulation. Glutamate is one of the main neurotransmitters in the brain and has been shown to play a role in the initiation and spread of seizure activity. Recent literature indicates CH24H is involved in over-activation of the glutamatergic pathway through modulation of the NMDA channel, implying its potential role in central nervous system diseases such as epilepsy. Ovid and Takeda believe that its novel mechanism of action may potentially treat rare epilepsies by inhibiting CH24H to decrease 24HC levels, effectively decreasing glutamate hyperactivity. This mechanism of action may be especially important in CDD and Dup15q since the NMDA receptor-mediated synaptic transmission underlies the pathological mechanisms of these syndromes. To Ovid and Takeda's knowledge, TAK-935/OV935 is the only molecule with this mechanism of action in clinical development. TAK-935/OV935 is an investigational drug, not approved for commercialization.

TAK-935/OV935 has successfully completed four Phase 1 clinical studies, which have assessed tolerability, PK and target engagement at doses believed to be therapeutically relevant. In preclinical models, a novel proprietary PET ligand was used to determine target occupancy of TAK-935/OV935 in the brain.

About the Ongoing Phase 1b/2a Clinical Study
The Phase 1b/2a trial of TAK-935/OV935 has completed enrollment and topline data are expected in the fourth quarter of calendar year 2018. The Phase 1b/2a trial is a randomized, double-blind, placebo-controlled, dose-escalation study designed to assess the safety, tolerability, PK, and pharmacodynamics of TAK-935/OV935 in adults with rare DEEs. Exploratory endpoints of the trial include change from baseline in seizure frequency and 24HC levels.

About the Rare DEEs being studied by Takeda and Ovid
Cyclin-Dependent Kinase-Like 5 (CDKL5) Deficiency Disorder (CDD)
Cyclin-Dependent Kinase-Like 5 (CDKL5) deficiency disorder, also known as CDD, is an ultra-rare, severe, neurological disorder caused by mutations in the CDKL5 gene on the X-chromosome. The CDKL5 gene provides instructions for making a protein that is essential for normal brain and neuron development, and may play a role in regulating the activity of other genes. CDD causes early onset and treatment resistant epilepsy in infants 3 to 6 months of age. Other common features of CDD include severe developmental delay and intellectual disability, poor fine motor skills, difficulty sleeping, scoliosis, visual impairment, microcephaly and various gastrointestinal difficulties.

Duplication 15q (Dup15q) Syndrome
Duplication 15q syndrome (also known as Dup15q syndrome) is a rare, severe, neurological disorder that results from duplications of chromosome 15q11.2-q13.1. In most cases, the chromosome mutation is not inherited but occurs during formation of reproductive cells or during embryonic development. Those with Dup15q syndrome experience seizures, hypotonia (poor muscle tone), developmental delays and intellectual disability, and Difficult to control seizures are the most devastating symptom of Dup15q[ii]. The severity of Dup15q and associated symptoms varies based on the size and location of the duplication and which genes are involved. There is insufficient demographic data to determine the prevalence of Dup15q in the general population.

Dravet Syndrome
Dravet syndrome is a severe form of childhood epilepsy that typically presents during the first year of life. It is believed to be largely caused by mutations in the SCN1A gene. Children experience frequent seizures, loss of muscle control, cognitive deficits and, in approximately 10 percent of cases, death before the age of 12 years. While some individuals may survive into adulthood, their long-term intellectual development and seizure outcomes are typically extremely poor. The incidence of Dravet syndrome in the United States ranges from 1 in 15,000 to 1 in 21,000 births.[iii]

Lennox-Gastaut Syndrome
Lennox-Gastaut syndrome is one of several disorders that together are designated as developmental and epileptic encephalopathies.[iv] Studies estimate that Lennox–Gastaut syndrome affects approximately 14,500 to 18,500 children under the age of 18 and over 30,000

children and adults in the United States.[v] It is estimated that between 1 to 4 percent of childhood epilepsies are a result of Lennox–Gastaut syndrome.[iv]

About the Takeda/Ovid Collaboration
Ovid and Takeda entered into a global development and commercialization collaboration in January 2017 to evaluate TAK-935/OV935 across a range of rare epilepsy syndromes. Under the terms of the agreement, the companies share in the development and commercialization costs on a 50/50 basis and, if successful, the companies will share in the profits on a 50/50 basis. Takeda will lead commercialization in Japan, and has the option to lead in Asia and other selected geographies. Ovid leads clinical development activities and commercialization in the United States, Europe, Canada and Israel.

About Takeda Pharmaceutical Company Limited
Takeda Pharmaceutical Company Limited (TSE: 4502) is a global, research and development-driven pharmaceutical company committed to bringing better health and a brighter future to patients by translating science into life-changing medicines. Takeda focuses its R&D efforts on oncology, gastroenterology and neuroscience therapeutic areas plus vaccines. Takeda conducts R&D both internally and with partners to stay at the leading edge of innovation. Innovative products, especially in oncology and gastroenterology, as well as Takeda's presence in emerging markets, are currently fueling the growth of Takeda. Approximately 30,000 Takeda employees are committed to improving quality of life for patients, working with Takeda's partners in health care in more than 70 countries. For more information, visit https://www.takeda.com/newsroom/.

About Ovid Therapeutics
Ovid Therapeutics (NASDAQ:OVID) is a New York-based biopharmaceutical company using its BoldMedicine™ approach to develop medicines that transform the lives of people with rare neurological disorders. Ovid has a broad pipeline of first-in-class medicines. The company's lead investigational medicine, OV101, is currently in development for the treatment of Angelman syndrome and Fragile X syndrome. Ovid is also developing TAK-935/OV935 in collaboration with Takeda Pharmaceutical Company Limited for the treatment of rare developmental and epileptic encephalopathies (DEE). For more information on Ovid, please visit http://www.ovidrx.com/.

Takeda Forward-Looking Statements
This press release contains "forward-looking statements." Forward-looking statements include all statements other than statements of historical fact, including plans, strategies and expectations for the future, statements regarding the company's current beliefs and expectations, including as they relate to the development strategy and program. Statements made in the future tense, and words such as "anticipate," "expect," "project," "continue," "believe," "plan," "estimate," "pro forma," "intend," "potential," "target," "forecast," "guidance," "outlook," "seek," "assume," "will," "may," "should," and similar expressions are intended to qualify as forward-looking statements. Forward-looking statements are based on estimates and assumptions made by management that are believed to be reasonable, though

they are inherently uncertain and difficult to predict. Investors and security holders are cautioned not to place undue reliance on these forward-looking statements.

Forward-looking statements involve risks and uncertainties that could cause actual results or experience to differ materially from that expressed or implied by the forward-looking statements. These forward-looking statements include, but are not limited to, statements concerning future drug development plans and projected timelines for the initiation and completion of preclinical and clinical trials; the potential for the results of ongoing preclinical or clinical trials and the efficacy of drug candidates; the potential market opportunities and value of drug candidates; other statements regarding future product development and regulatory strategies, including with respect to specific indications; any statements regarding future financial performance; and any other statements that are not statements of historical fact.

The forward-looking statements contained in this press release speak only as of the date of this press release, and neither Ovid, nor Takeda undertake any obligation to revise or update any forward-looking statements to reflect new information, future events or circumstances after the date of the forward-looking statement. If one or more of these statements is updated or corrected, investors and others should not conclude that additional updates or corrections will be made.

Ovid Forward-Looking Statements

This press release includes certain disclosures that contain "forward-looking statements," including, without limitation, statements regarding (i) progress, timing, scope and results of clinical trials for Ovid's product candidates, and (ii) the potential clinical benefit of TAK-935/OV935 to treat patients with DEE. You can identify forward-looking statements because they contain words such as "will," "believes" and "expects." Forward-looking statements are based on Ovid's current expectations and assumptions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that may differ materially from those contemplated by the forward-looking statements, which are neither statements of historical fact nor guarantees or assurances of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements are set forth in Ovid's filings with the Securities and Exchange Commission, including its Quarterly Report on Form 10-Q for the period ended March 31, 2018 under the caption "Risk Factors." Ovid assumes no obligation to update any forward-looking statements contained herein to reflect any change in expectations, even as new information becomes available.

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