Kyowa Hakko Kirin Announces Results of Early Phase 2 Trial of KW-6356 for Parkinson's Disease at IAPRD

Tokyo, Japan, August 20, 2018 --- Kyowa Hakko Kirin Co., Ltd. (Headquarters: President and COO: Masashi Miyamoto, "Kyowa Hakko Kirin") presents the results of the early phase 2 clinical trial of KW-6356*1 in development for patients with early Parkinson's disease (PD)*2 at the 23rd World Congress on Parkinson's Disease and Related Disorders (IAPRD).

Poster presentation for the 23rd World Congress on Parkinson's Disease and Related Disorders (IAPRD)

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Title : A novel adenosine A_{2A} receptor antagonist KW-6356 in early Parkinson's disease: a randomized controlled trial for efficacy and safety

This trial was a multicenter, randomized, controlled phase 2a trial of Japanese patients with early PD who had not received other anti-Parkinson drugs. Participants were randomized into a high-dose KW-6356 group, a low-dose KW-6356 group, or a placebo group at a ratio of 1:1:1, and the test drug was administered for 12 weeks. The primary efficacy endpoint was the change from baseline in MDS-UPDRS*3 part III scores over the 12 weeks of administration.
The 168 participants were assigned to three groups (58 to the high-dose KW-6356 group, 55 to the low-dose KW-6356 group, and 55 to the placebo group). Changes from baseline in MDS-UPDRS part III scores were -4.76 in the high-dose KW-6356 group (95% CI, -6.55 to -2.96), -5.37 in the low-dose KW-6356 group (95% CI, -7.25 to -3.48), and -3.14 (95% CI, -4.97 to -1.30) in the placebo group, with both KW-6356 groups showing a greater reduction in score compared with the placebo group. No major safety issues were observed in any of the groups.
These results demonstrated that KW-6356 monotherapy is well tolerated and effective in the treatment of motor symptoms in early PD patients.

"I am delighted that the study showed positive data of KW-6356 for early PD patients," said Mitsuo Satoh, Ph.D., Executive Officer, Vice President Head of R&D Division of Kyowa Hakko Kirin. "I believe the next study will reveal more detailed potential of the drug for PD."

Kyowa Hakko Kirin plans to initiate late phase 2 clinical trial of KW-6356 for PD patients in Japan by the end of 2018. Furthermore, Kyowa Hakko Kirin and H. Lundbeck A/S(Denmark) had agreed to terminate the license agreement for the development and sale of KW-6356 in all countries outside of Japan and the Asian region. As a result of this termination, all rights of KW-6356 have reverted to Kyowa Hakko Kirin and Kyowa Hakko Kirin has decided to go forward independently with the review of measures to maximize value both in Japan and globally.

The Kyowa Hakko Kirin Group companies strive to contribute to the health and well-being of people around the world by creating new value through the pursuit of advances in life sciences and

technologies.

***1 About KW-6356**

KW-6356 is a selective antagonist of adenosine A_{2A} receptors developed by Kyowa Hakko Kirin. Adenosine A_{2A} receptors are a type of receptor for adenosine, a substance found in the body. They are distributed across the basal ganglia, where the functional focus of PD is located, and are thought to be involved in the regulation of motor functions. KW-6356 has a high affinity and selectivity for A_{2A} receptors, and is therefore expected to obtain approval for wider indications as the successor to Istradefylline, developed in Europe and the United States and sold in Japan since May 2013 by Kyowa Hakko Kirin under the product name NOURIAST®.

***2 About Parkinson's disease**

Parkinson's Disease is a progressive, neurodegenerative disease characterized by motor symptoms such as tremors, rigidity, slow movement, and abnormal postural reflexes. It is thought to be caused by progressive degeneration associated with decreased levels of dopamine in certain parts of the brain, i.e., the substantia nigra and striatum.

***3 MDS-UPDRS**

The MDS-UPDRS (Movement Disorder Society-Unified Parkinson's Disease Rating Scale) consists of four evaluation categories. Part I describes non-motor symptoms experienced during daily life (13 items); part II describes motor symptoms experienced during daily life (13 items); part 3 pertains to the examination of motor symptoms (18 items); and part IV pertains to motor-symptom complications (6 items). Each question is answered based on a five-level score from 0 to 4, where 0 represents "normal", 1 represents "slight", 2 represents "mild", 3 represents "moderate", and 4 represents "severe".

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