NEWS RELEASE

Mavenclad (Cladribine Tablets) Safety Profile in Multiple Sclerosis (MS) Reaffirmed with up to 10-Years of Follow-up Data

- **Real-world evidence and longer clinical trial follow-up show no increased incidence of serious adverse events**
- **Additional post-hoc data analyses support sustained efficacy of Mavenclad in patients with relapsing-remitting multiple sclerosis (RRMS) with high disease activity**

MISSISSAUGA, ON, October 10, 2018 – Merck KGaA, Darmstadt, Germany, a leading science and technology company, operating as EMD Serono in North America, today announced the presentation of new data for MAVENCLAD® (cladribine tablets) at the 34th Congress of the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) in Berlin, Germany. The data presented at ECTRIMS 2018 build on the existing real-world and clinical evidence around the safety and efficacy of MAVENCLAD and reaffirm a positive benefit-risk profile of the oral treatment which is taken for a maximum of 20 days over two years.

Based on an integrated analysis of patients from the CLARITY, CLARITY EXT, and ORACLE-MS trials, including two additional years of data from the long-term PREMIERE Registry, the treatment emergent adverse event (TEAE) profile associated with MAVENCLAD in patients with RRMS was confirmed, with no new safety findings. The integrated analysis is based on patients followed for up to 10 years[i] (923 patients received MAVENCLAD [cladribine tablets 3.5 mg/kg]; 641 patients received placebo). As part of this analysis, an overview of post-approval safety data to July 2018 also showed no new safety or tolerability signals for MAVENCLAD.

“In my opinion, we have entered the MS era of immune reconstitution therapies (IRT), which are administered intermittently but have an effect on the disease that lasts much longer than the period of dosing,” said Professor Gavin Giovannoni, a lead investigator in the CLARITY studies and Chair of Neurology, Barts and The London School of Medicine and Dentistry. “The new data presented at ECTRIMS indicated that MAVENCLAD delivers sustained efficacy well beyond the dosing regimen with no new safety signals found in the long term.”

Post hoc analyses of annual NEDA-3 status was performed in patients treated with cladribine tablets 3.5 mg/kg or placebo up to the end of Year 4 in CLARITY EXT.4.[ii] There is also an analysis of the Expanded Disability Status Scale (EDSS), and clinical and MRI outcomes in patients with high disease activity.

A *post hoc* analysis of CLARITY data indicated that the relapse and MRI efficacy of MAVENCLAD does not appear to be impacted by age, consistent with previous similar analyses.[iii] Data from this study showed that qualifying relapses were reduced in RMS patients aged below and above 45. With regards to MRI measures, the data showed that the number of cumulative new T1 Gd+ and active T2 lesions at Week 96 was reduced with MAVENCLAD compared to placebo in both age groups.[iv]

"The data presented at ECTRIMS 2018 highlight our commitment to continuing to understand the extended benefit-risk profile of MEVENCLAD," said Luciano Rossetti, Head of Global R&D for the Biopharma business of Merck KGaA, Darmstadt, Germany. "With more and more patients able to access MAVENCLAD globally, it becomes increasingly important for us to invest in scientific research that further characterizes the therapeutic profile, so patients may optimally benefit."

About MAVENCLAD®

MAVENCLAD® (cladribine tablets) is a short-course oral therapy that selectively and periodically targets lymphocytes thought to be integral to the pathological process of MS. In November 2017, Health Canada approved MAVENCLAD™ (cladribine tablets) as monotherapy for the treatment of adult patients with RRMS to reduce the frequency of clinical exacerbations and delay the progression of disability. MAVENCLAD is generally recommended in MS patients who have had an inadequate response to, or are unable to tolerate, one or more therapies for multiple sclerosis.As of August 2018, MAVENCLAD® has been approved in more than 40 countries since August 2017, including the European Union (EU), Canada, Australia, Israel, Argentina, United Arab Emirates, Chile and Lebanon. Additional filings in other countries are planned for 2018. It is not yet approved for any use in the United States.

The clinical development program of MAVENCLAD® in MS comprises more than 12,000 patient years of data with over 2,700 patients included in the clinical trial program, and up to 10 years of observation in some patients. These clinical trials include the Phase III CLARITY, CLARITY extension and ORACLE MS trials, the Phase II ONWARD trial and the PREMIERE Long-term Safety Registry.

About Multiple Sclerosis

MS is a chronic, inflammatory condition of the central nervous system and is the most common, non-traumatic, disabling neurological disease in young adults. It is estimated that approximately 2.3 million people have MS worldwide. Canada has one of the highest rates of MS in the world with one in 340 people living with the disease. While symptoms can vary, the most common symptoms of MS include blurred vision, numbness or tingling in the limbs and problems with strength and coordination. The relapsing forms of MS are the most common.

About EMD Serono, Canada

EMD Serono, Canada, is the Canadian biopharmaceutical business of Merck KGaA, Darmstadt, Germany. EMD Serono, Canada has integrated cutting-edge science, innovative products and devices, and industry-leading patient support and access programs. EMD Serono, Canada has deep expertise in neurology, fertility and endocrinology, as well as a robust pipeline of potential therapies in neurology, oncology, immunology and immuno-oncology. Today, EMD Serono, Canada has more than 100 employees across Canada with headquarters in Mississauga, Ontario.

Merck KGaA, Darmstadt, Germany in Multiple Sclerosis

Merck **KGaA, Darmstadt, Germany** has a long-standing legacy in neurology and immunology, with significant R&D and commercial experience in multiple sclerosis (MS). Merck **KGaA, Darmstadt, Germany**'s current portfolio includes two products for the treatment of relapsing MS, with a robust pipeline focusing on discovering new therapies that have the potential to modulate key pathogenic mechanisms in MS. Merck **KGaA, Darmstadt, Germany** aims to improve the lives of those living with MS, by addressing areas of unmet medical needs.

About Merck KGaA, Darmstadt, Germany
Merck **KGaA, Darmstadt, Germany** is a leading science and technology company in healthcare, life science and performance materials. More than 53,000 employees work to further develop technologies that improve and enhance life – from biopharmaceutical therapies to treat cancer or multiple sclerosis, cutting-edge systems for scientific research and production, to liquid crystals for smartphones and LCD televisions. In 2017, Merck **KGaA, Darmstadt, Germany** generated sales of € 15.3 billion in 66 countries.

Founded in 1668, Merck **KGaA, Darmstadt, Germany** is the world's oldest pharmaceutical and chemical company. The founding family remains the majority owner of the publicly listed corporate group. Merck **KGaA, Darmstadt, Germany** holds the global rights to the Merck name and brand. The only exceptions are the United States and Canada, where the company operates as EMD Serono, MilliporeSigma and EMD Performance Materials.

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[i] Cook S et al. Updated safety analysis of Cladribine Tablets in the treatment of patients with multiple sclerosis. Presentation at ECTRIMS 2018
[ii] Vermersch P et al. Sustained efficacy in relapsing remitting multiple sclerosis following switch to placebo treatment from Cladribine Tablets in patients with high disease activity at baseline. Presentation at ECTRIMS 2018
[iii] Giovannoni G et al. An exploratory analysis of the efficacy of Cladribine Tablets 3.5mg/kg in patients with relapsing multiple sclerosis stratified according to age above and below 45 years in the CLARITY study. Presentation at ECTRIMS 2018
[iv] Ibid.