News Release

Your Contact
Erin-Marie Beals +1 781-681-2850

April 13, 2018

Merck KGaA, Darmstadt, Germany Highlights Commitment to Advance Multiple Sclerosis Treatment with Investigational Cladribine Tablets and Rebif® Data at AAN 2018

Darmstadt, Germany, April 13, 2018 – Merck KGaA, Darmstadt, Germany, a leading science and technology company, today announced data for Cladribine Tablets, an investigational treatment for multiple sclerosis (MS), and Rebif® (interferon beta-1a) will be presented at the American Academy of Neurology (AAN) 70th Annual Meeting, April 21-27, 2018, in Los Angeles.

Cladribine Tablets data to be presented includes poster presentations highlighting post-hoc analyses of the CLARITY, CLARITY Extension and ORACLE-MS trials evaluating safety and use in patients with MS, as well as the impact on B- and T-cells. Cladribine Tablets, marketed as MAVENCLAD® in the European Union (EU), is an investigational short-course oral therapy that is thought to preferentially target lymphocytes which may be integral to the pathological process of relapsing forms of MS (RMS). Cladribine Tablets is currently under clinical investigation and is not approved in the US.

MAVENCLAD® has received marketing authorization in 35 countries including European Union member countries, Canada, Australia, Argentina, Israel, and the United Arab Emirates. MAVENCLAD® is now available in Germany, UK, Canada, Netherlands, Norway, Denmark, Sweden, Israel, and other markets. The Company is planning additional filings for regulatory approval including the United States.

Frankfurter Strasse 250
64293 Darmstadt · Germany
Hotline +49 6151 72-5000
www.emdgroup.com

Head Media Relations -62445
Spokesperson: -9591 / -7144 / -6328
Fax +49 6151 72 3138
media.relations@emdgroup.com

News Release

Rebif data includes presentations analyzing no evidence of disease activity (NEDA), long-term disease activity assessed by the Magnetic Resonance Imaging in MS (MAGNIMS) score, new data on pregnancy outcomes for women being treated with interferon beta, as well as real-world evidence evaluating treatment adherence rates for patients treated with Rebif compared with dimethyl fumarate.

"We look forward to presenting data demonstrating advancement in our knowledge of MS, including further scientific information about Rebif, an important treatment option for relapsing forms of MS, and potential treatment options, such as investigational Cladribine Tablets, at the 2018 AAN Annual Meeting," said Luciano Rossetti, Head of Global R&D for the biopharma business of Merck KGaA, Darmstadt, Germany. "We are committed to better understanding MS and developing innovative solutions to improve the lives of patients and those affected by this disease."

Meeting attendees can learn more about the Company and participate in the following MS-specific interactive activities by visiting booth #1847:

- "I'm Balancing MS": Individuals can understand the balance between healthcare and lifestyle for those facing MS through a mobile art activity. For each participant, we will donate $100 to MS Fitness Challenge, a charity organization dedicated to educating and training people with MS on the benefits of exercise and nutrition.
- "Shine a Light": Individuals can create their own Light Trail art symbolizing what drives their commitment to fighting MS. Participation in the activity will drive a donation to MS Fitness Challenge.

Additionally, Exhibit Hall booth #1957 will host hands-on activities which will allow attendees to gain a better understanding of what it's like to have MS through virtual reality pods and simulation stations.

EMD Serono, the biopharmaceutical business of Merck KGaA, Darmstadt, Germany in the US and Canada, will also be hosting an Industry Therapeutic Update event entitled Evolving Perspectives and Innovations in Multiple Sclerosis on Wednesday, April 25 from 7:00 p.m.-10:00 p.m. PDT at the Platinum Ballroom in the JW Marriott Hotel in Los Angeles. Speakers include, Professor Amit Bar-Or, University

of Pennsylvania, Philadelphia, PA, Professor Dusan Stefoski, Rush University Medical Center, Chicago, IL and Professor Anthony Traboulsee, University of British Columbia, Vancouver, CA.

AAN Brain Health Fair

EMD Serono, the biopharmaceutical business of Merck KGaA, Darmstadt, Germany in the US and Canada, will exhibit its MS InsideOut experience at the AAN Brain Health Fair, a one-day-only event where attendees can learn about the brain and the field of neurology. The event takes place on Friday, April 20 from 10:00 a.m.-4:00 p.m. PDT at the Los Angeles Convention Center.

Presentations at AAN 2018 include the following accepted abstracts:

Cladribine Tablets Presentations			
Title	**Lead Author**	**Abstract/Poster #**	**Presentation Details**
Effects of Cladribine Tablets on CD4+ T-cell Subsets in the ORACLE-MS Study: Results from an Analysis of Lymphocyte Surface Markers	Leist T.	402	Session P1: Biomarkers and Experimental Studies for Multiple Sclerosis on April 22, 2018 On Display: 11:30 a.m. to 5:30 p.m. PDT Present: 4:00 p.m. to 5:30 p.m. PDT
Integrated Safety Analysis of Infections during Periods of Grade 3 or 4 Lymphopenia in Patients Taking Cladribine Tablets 3.5mg/kg	Cook S.	407	Session P3: MS Therapeutics in Development on April 24, 2018 On Display: 11:30 a.m. to 7:00 p.m. PDT Present: 5:30 p.m. to 7:00 p.m. PDT
Effectiveness of Lymphocyte-based Re-treatment Criteria in	Cook S.	370	Session P5: MS Therapies: MOA, Safety and Complications on

News Release

Minimizing the Incidence of Severe Sustained Lymphopenia During Treatment with Cladribine Tablets 3.5mg/kg			April 26, 2018 On Display: 11:30 a.m. to 7:00 p.m. PDT Present: 5:30 p.m. to 7:00 p.m. PDT
Long-term Lymphocyte Counts in Patients with RRMS Treated with Cladribine Tablets 3.5 mg/kg: Total Lymphocytes, B-, and T-cell Subsets	Soelberg-Sorensen P.	364	Session P5: MS Therapies: MOA, Safety and Complications on April 26, 2018 On Display: 11:30 a.m. to 7:00 p.m. PDT Present: 5:30 p.m. to 7:00 p.m. PDT
Selective and Discontinuous Reduction of B and T Lymphocytes and NK cells in Patients with Early and Relapsing MS (ORACLE-MS, CLARITY and CLARITY Extension) After Administration of Cladribine Tablets	Stuve O.	351	Session P5: MS Therapies: MOA, Safety and Complications on April 26, 2018 On Display: 11:30 a.m. to 7:00 p.m. PDT Present: 5:30 p.m. to 7:00 p.m. PDT
Rebif® (interferon beta-1a) Presentations			
Title	**Lead Author**	**Abstract/Poster #**	**Presentation Details**
Relapse in Patients with Multiple Sclerosis Newly Initiating scIFNβ1a Compared with Oral Disease-Modifying Drugs: A Real-World Assessment	Bowen J.	353	Session P1: Comparative Efficacy of Disease Modifying Therapies on April 22, 2018 On display: 11:30 a.m. to 5:30 p.m. PDT Present: 4:00 p.m. to 5:30 p.m. PDT
A Panel Survey Analysis of	Perrin Ross A.	354	Session P1: Comparative

News Release

Adherence in Patients with Multiple Sclerosis Treated with scIFNβ1a or Dimethyl Fumarate			Efficacy of Disease Modifying Therapies on April 22, 2018 On display: 11:30 a.m. to 5:30 p.m. PDT Present: 4:00 p.m. to 5:30 p.m. PDT
Disease Activity as Assessed by the Magnetic Resonance Imaging in Multiple Sclerosis (MAGNIMS) Score Predicts Long-Term Clinical Disease Activity (CDA)-Free Status and Disability Progression in Patients Treated with Subcutaneous Interferon beta-1a (scIFNβ-1a)	Sormani M.P.	005	Session S24: MS Outcome Measures and Biomarkers on April 24, 2018, 4:18 p.m.-4:30 p.m. PDT
Evolution of New Lesions and its Temporal Patterns in Patients with Clinically Isolated Syndrome (CIS) Treated with Subcutaneous Interferon beta-1a (scIFNß-1a)	Vrenken H.	370	Session P3: MS and CNS Inflammatory Disease: Neuroimaging on April 24, 2018 On display: 11:30 a.m. to 7:00 p.m. PDT Present: 5:30 p.m. to 7:00 p.m. PDT
Risk of Stroke in Patients with Multiple Sclerosis Treated with Subcutaneous Interferon beta-1a	Sabidó-Espin M.	008	Session S36: MS Therapeutics and Clinical Research on April 25, 2018 4:54 p.m. to 5:06 p.m. PDT
Cumulative Data from the European Interferon Beta	Hellwig K.	357	Session P4: Pregnancy and Multiple Sclerosis

News Release

Pregnancy Registry			on April 25, 2018 On display: 11:30 a.m. to 7:00 p.m. PDT Present: 5:30 p.m. to 7:00 p.m. PDT
Impact of the Presence of Gadolinium-Enhancing (Gd+) Lesions at Baseline on No Evidence of Disease Activity (NEDA) Status in Patients Treated with Subcutaneous Interferon beta-1a (scIFNß-1a): A Post-hoc Analysis of REFLEXION	Freedman M.	387	Session P6: MS Therapeutics: Extension Studies on April 27, 2018 On display: 11:30 a.m. to 5:30 p.m. PDT Present: 4:00 p.m. to 5:30 p.m. PDT
Analysis of 6-month Confirmed Disability Progression in RRMS Patients Treated with Subcutaneous Interferon beta-1a	Wong S.L.	361	Session P6: MS Therapeutics III on April 27, 2018 On display:11:30 a.m. to 5:30 p.m. PDT Present: 4:00 p.m. to 5:30 p.m. PDT

About Cladribine Tablets
Cladribine Tablets is an investigational short-course oral therapy that is thought to selectively target lymphocytes which may be integral to the pathological process of relapsing MS (RMS). Cladribine Tablets is currently under clinical investigation and not approved for the treatment for any use in the United States. MAVENCLAD® has received marketing authorization in 35 countries including European Union member countries, Canada, Australia, Argentina, Israel, and the United Arab Emirates. MAVENCLAD® is now available in Germany, UK, Canada, Netherlands, Norway, Denmark, Sweden, Israel, and other markets. In December 2017, Health Canada approved MAVENCLAD for the treatment of relapsing forms of MS.

The clinical development program for Cladribine Tablets includes:

- The CLARITY (Cladribine Tablets Treating MS Orally) study: a two-year Phase III placebo-controlled study designed to evaluate the efficacy and safety of Cladribine Tablets as a monotherapy in patients with RRMS.
- The CLARITY extension study: a two-year Phase III placebo-controlled study following on from the CLARITY study, designed to evaluate the safety and efficacy of Cladribine Tablets over an extended administration for four years.
- The ORACLE MS (Oral Cladribine in Early MS) study: a two-year Phase III placebo-controlled study designed to evaluate the efficacy and safety of Cladribine Tablets as a monotherapy in patients at risk of developing MS (patients who have experienced a first clinical event suggestive of MS).
- The ONWARD (Oral Cladribine Added ON To Interferon beta-1a in Patients With Active Relapsing Disease) study: a Phase II placebo-controlled study designed primarily to evaluate the safety and tolerability of adding Cladribine Tablets treatment to patients with relapsing

forms of MS, who have experienced breakthrough disease while on established interferon-beta therapy.
- PREMIERE (Prospective Observational Long-term Safety Registry of Multiple Sclerosis Patients Who Have Participated in Cladribine Clinical Studies) study: interim long-term follow-up data from the prospective registry, PREMIERE, to evaluate the safety and efficacy of Cladribine Tablets. This includes more than 10,000 patient years of data with over 2,700 patients included in the clinical trial program, and more than 10 years of observation in some patients.

In the two-year CLARITY study, the most commonly reported adverse event (AE) in patients treated with Cladribine Tablets was lymphopenia. The incidence of infections was 48.3% with Cladribine Tablets and 42.5% with placebo, with 99.1% and 99.0% respectively rated mild-to-moderate by investigators.

About Rebif® (interferon beta-1a)
Rebif (interferon beta-1a) is used to treat relapsing forms of MS to decrease the frequency of relapses and delay the occurrence of some of the physical disability that is common in people with MS. The efficacy and safety of Rebif in controlled clinical trials beyond 2-years has not been established.

Important Safety Information:
Rebif is contraindicated in patients with a history of hypersensitivity to natural or recombinant interferon beta, human albumin, or any other component of the formulation.

Rebif should be used with caution in patients with depression, a condition that is common in people with multiple sclerosis. Depression, suicidal ideation, and suicide attempts have been reported to occur with increased frequency in patients receiving interferon compounds, including Rebif.

Severe liver injury, including some cases of hepatic failure requiring liver transplantation, has been reported rarely in patients taking Rebif. The potential for liver injury should be considered when used in combination with other products associated with liver injury. Monitor liver function tests and patients for signs and symptoms of hepatic injury. Consider discontinuing Rebif if hepatic injury occurs.

Anaphylaxis and other allergic reactions (some severe) have been reported as a rare complication of Rebif. Discontinue Rebif if anaphylaxis occurs.

In controlled clinical trials, injection site reactions occurred more frequently in Rebif-treated patients than in placebo-treated and Avonex-treated patients. Injection site reactions including injection site pain, erythema, edema, cellulitis, abscess, and necrosis have been reported in the postmarketing setting. Do not administer Rebif into affected area until fully healed; if multiple lesions occur, discontinue Rebif until skin lesions are healed.

Decreased peripheral blood counts in all cell lines, including pancytopenia, have been reported in Rebif-treated patients. In controlled clinical trials, leukopenia occurred at a higher frequency in Rebif-treated patients than in placebo and Avonex-treated patients. Thrombocytopenia and anemia occurred more frequently in 44 mcg Rebif-treated patients than in placebo-treated patients. Patients should be monitored for symptoms or signs of decreased blood counts. Monitoring of complete blood and differential white blood cell counts is also recommended.

Cases of thrombotic microangiopathy (TMA), some fatal, have been reported with interferon beta products, including Rebif, up to several weeks or years after starting therapy. Discontinue Rebif if clinical symptoms and laboratory findings consistent with TMA occur, and manage as clinically indicated.

Caution should be exercised when administering Rebif to patients with pre-existing seizure disorders. Seizures have been temporally associated with the use of beta interferons, including Rebif, in clinical trials and in postmarketing reports.

The most common side effects with Rebif are injection-site disorders, headaches, influenza-like symptoms, abdominal pain, depression, elevated liver enzymes, and hematologic abnormalities.

There are no adequate and well-controlled studies in pregnant women. Rebif should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

News Release

Rebif full prescribing information is available
at http://www.emdserono.com/ms.country.us/en/images/Rebif_PI_tcm115_140051.pdf?Version=

About Multiple Sclerosis
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. 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 Merck KGaA, Darmstadt, Germany
Merck KGaA, Darmstadt, Germany, is a leading science and technology company in healthcare, life science and performance materials. Around 50,000 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.