Roche to present new OCREVUS (ocrelizumab) efficacy and safety data in relapsing and primary progressive forms of multiple sclerosis at ECTRIMS

- Largest body of OCREVUS data presented at a congress to date reinforce favourable benefit-risk profile and advance clinical understanding of disease progression

Roche (SIX: RO, ROG; OTCQX: RHHBY) announced today that new data on OCREVUS® (ocrelizumab) in people with relapsing and primary progressive forms of multiple sclerosis (MS) will be presented during the 7th Joint European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) – Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Meeting in Paris, France, 25 to 28 October. Eighteen abstracts, including two platform presentations, have been accepted and will be shared during the congress. The data will explore new and existing measures of disease progression, show the effect of OCREVUS on visual outcomes and reinforce its favourable benefit-risk profile.

Research into two newly emerging MS endpoints will be presented, which may help clinicians more closely monitor underlying signs of disease activity that often lead to disability. These data include a post-hoc analysis of the OPERA I and OPERA II studies that shows the impact of OCREVUS in people with relapsing MS (RMS) who experience Progression Independent of Relapse Activity (PIRA), a composite measure examining underlying disease activity independent of any influence of acute relapses. Additionally, in a platform presentation, researchers for the first time will share a new method using conventional brain MRI to automatically detect and characterise Slowly Evolving Lesions (SELs), which may represent a biomarker of chronic disease activity in the brain, versus the acute disease activity in MS lesions.

“The data presented at ECTRIMS – ACTRIMS demonstrate the commitment of our scientists and research partners to advance understanding of MS progression through ongoing analyses of the OCREVUS Phase III clinical trials,” said Sandra Horning, M.D., Roche’s Chief Medical Officer and Head of Global Product Development. “With our studies of two new potential markers of underlying disease activity and their impact on disease progression, we hope to bring new tools to the MS community to better understand and manage the disease.”
In line with this goal, Roche will also present new data from its FLOODLIGHT clinical trial programme investigating sensor-based outcomes from a series of active neurological tests and passive monitoring made possible by the use of a smartphone. The technology enables a continuous stream of precise, real-world MS disease progression data to be collected and analysed using dedicated algorithms and machine learning.

Among other notable data from Roche at ECTRIMS – ACTRIMS are results from the extended controlled period of the Phase III ORATORIO study in primary progressive MS (PPMS), which will show the impact of OCREVUS on sustained reduction in confirmed disability progression. Data from open-label extension periods will also show a safety profile consistent with that seen in controlled treatment periods.

Investigators will present the following oral and poster presentations:

<table>
<thead>
<tr>
<th>Abstract Title</th>
<th>Abstract Number (type), Presentation Date, Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocrelizumab Reduces Disability Progression Independent of Relapse Activity in Patients with Relapsing Multiple Sclerosis</td>
<td>P654 (poster), Thursday, 26 October 3.30pm CEST</td>
</tr>
<tr>
<td>Ocrelizumab Does Not Modulate Peripheral T Cell Functionality or Prevalence in a Small Subset of Relapsing MS Patients Enrolled in OPERA I, a Phase III Double-blind, Double-dummy Interferon Beta-1a-controlled Study</td>
<td>P659 (poster), Thursday, 26 October 3.30pm CEST</td>
</tr>
<tr>
<td>T-cell Population Changes and Serious Infection Rates in the Controlled Periods of the Pivotal Phase III Trials of Ocrelizumab in Multiple Sclerosis</td>
<td>P668 (poster), Thursday, 26 October 3.30pm CEST</td>
</tr>
<tr>
<td>Safety of Ocrelizumab in Multiple Sclerosis: Updated Analysis in Patients with Relapsing and Primary Progressive Multiple Sclerosis</td>
<td>P676 (poster), Thursday, 26 October 3.30pm CEST</td>
</tr>
<tr>
<td>Incidence Rates of Malignancies in Patients with Multiple Sclerosis in Clinical Trials and Epidemiological Studies</td>
<td>P686 (poster), Thursday, 26 October 3.30pm CEST</td>
</tr>
<tr>
<td>Subgroup Analyses of Annualized Relapse Rates in Patients with Relapsing Multiple Sclerosis Who Received Ocrelizumab or Interferon Beta-1a in the</td>
<td>P687 (poster), Thursday, 26 October 3.30pm CEST</td>
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<tr>
<td>Phase III OPERA I and OPERA II Studies</td>
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<tr>
<td>Subgroup Analyses of No Evidence of Disease Activity in Patients with Relapsing Multiple Sclerosis Who Received Ocrelizumab or Interferon Beta-1A in the Phase III OPERA I and OPERA II Studies</td>
<td>P688 (poster)</td>
</tr>
<tr>
<td>Effect of Ocrelizumab on B and T Cell Immune Repertoires in Patients with Relapsing Multiple Sclerosis</td>
<td>P693 (poster)</td>
</tr>
<tr>
<td>An Update on Pregnancy Outcomes Following Ocrelizumab Treatment in Patients with Multiple Sclerosis and Other Autoimmune Diseases</td>
<td>P710 (poster)</td>
</tr>
<tr>
<td>Association of Brain Volume Loss and NEDA Outcomes in Patients with Relapsing Multiple Sclerosis in the OPERA I and OPERA II Studies</td>
<td>P774 (poster)</td>
</tr>
<tr>
<td>Detection and Characterization of Slowly Evolving Lesions in Multiple Sclerosis Using Conventional Brain MRI</td>
<td>186 (platform)</td>
</tr>
<tr>
<td>Effect of Ocrelizumab vs that of Interferon Beta-1a on Visual Outcomes in Patients with Relapsing Multiple Sclerosis in the OPERA Studies</td>
<td>192 (platform)</td>
</tr>
<tr>
<td>Interim Analysis from FLOODLIGHT: A Prospective Pilot Study to Evaluate the Feasibility of Conducting Remote Patient Monitoring with the Use of Digital Technology in Patients with Multiple Sclerosis</td>
<td>P1226 (poster)</td>
</tr>
<tr>
<td>Sustained and Durable Reduction in Confirmed Disability Progression in Patients with Primary Progressive Multiple Sclerosis Receiving Ocrelizumab: Findings from the Phase III ORATORIO Study Extended Control Period</td>
<td>P1234 (poster)</td>
</tr>
<tr>
<td>Effect of Ocrelizumab on Upper Limb Function in Patients with Primary Progressive Multiple Sclerosis in the ORATORIO Study</td>
<td>P1236 (poster)</td>
</tr>
<tr>
<td>Infusion-Related Reactions with Ocrelizumab in</td>
<td>e-poster</td>
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### Phase III Studies

<table>
<thead>
<tr>
<th>Study Title</th>
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<tbody>
<tr>
<td>CSF Cell Signature and Biomarkers of Neuroinflammation and Neurodegeneration in MS: Preliminary Results of the OBOE Study</td>
<td>e-poster</td>
</tr>
<tr>
<td>Activities of Daily Living, Work Productivity and Reliance on Caregiver in Patients with Primary Progressive Multiple Sclerosis</td>
<td>e-poster</td>
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Additionally, Roche is sponsoring two symposia, including “Beyond the Lightbulb: Exploring the Known Unknown” on Thursday, 26 October at 1.00pm CEST in Hall B and “Turning the Lights On: Seeing is Believing” on Friday, 27 October at 6.00pm CEST in Hall B.

OCREVUS has been approved for use in countries across North America, South America, the Middle East, Eastern Europe, as well as in Australia and Switzerland. Marketing applications for OCREVUS are currently under review in over 50 countries across the world.

Follow Roche on Twitter via @Roche and keep up to date with Joint ECTRIMS – ACTRIMS Meeting news and updates by using the hashtag #MSParis2017.

**About OCREVUS (ocrelizumab)**

OCREVUS is a humanised monoclonal antibody designed to target CD20-positive B cells, a specific type of immune cell thought to be a key contributor to myelin (nerve cell insulation and support) and axonal (nerve cell) damage. This nerve cell damage can lead to disability in people with multiple sclerosis (MS). Based on preclinical studies, OCREVUS binds to CD20 cell surface proteins expressed on certain B cells, but not on stem cells or plasma cells, and therefore important functions of the immune system may be preserved.

OCREVUS is administered by intravenous infusion every six months. The initial dose is given as two 300 mg infusions given two weeks apart. Subsequent doses are given as single 600 mg infusions.
About multiple sclerosis

Multiple sclerosis (MS) is a chronic disease that affects an estimated 2.3 million people around the world, for which there is currently no cure.\textsuperscript{1,2} MS occurs when the immune system abnormally attacks the insulation and support around nerve cells (myelin sheath) in the brain, spinal cord and optic nerves, causing inflammation and consequent damage. This damage can cause a wide range of symptoms, including muscle weakness, fatigue and difficulty seeing, and may eventually lead to disability.\textsuperscript{3,4,5} Most people with MS experience their first symptom between 20 and 40 years of age, making the disease the leading cause of non-traumatic disability in younger adults.\textsuperscript{6}

Relapsing-remitting MS (RRMS) is the most common form of the disease and is characterised by episodes of new or worsening signs or symptoms (relapses) followed by periods of recovery.\textsuperscript{7,8} Approximately 85 percent of people with MS are initially diagnosed with RRMS.\textsuperscript{9} The majority of people who are diagnosed with RRMS will eventually transition to secondary progressive MS (SPMS), in which they experience steadily worsening disability over time.\textsuperscript{9} Relapsing forms of MS (RMS) include people with RRMS and people with SPMS who continue to experience relapses. Primary progressive MS (PPMS) is a debilitating form of the disease marked by steadily worsening symptoms but typically without distinct relapses or periods of remission. Approximately 15 percent of people with MS are diagnosed with the primary progressive form of the disease.\textsuperscript{9}

People with all forms of MS experience disease activity – inflammation in the nervous system and permanent loss of nerve cells in the brain – even when their clinical symptoms aren’t apparent or don’t appear to be getting worse.\textsuperscript{10} An important goal of treating MS is to reduce disease activity as soon as possible to slow how quickly a person’s disability progresses.\textsuperscript{11} Despite available disease-modifying treatments (DMTs), some people with RMS continue to experience disease activity and disability progression.

About Roche in neuroscience

Neuroscience is a major focus of research and development at Roche. The company’s goal is to develop treatment options based on the biology of the nervous system to help improve the lives of people with chronic and potentially devastating diseases. Roche has more than a dozen investigational medicines in clinical development for diseases that include multiple sclerosis, Alzheimer’s disease, spinal muscular atrophy, Parkinson’s disease and autism.
About Roche

Roche is a global pioneer in pharmaceuticals and diagnostics focused on advancing science to improve people’s lives. The combined strengths of pharmaceuticals and diagnostics under one roof have made Roche the leader in personalised healthcare – a strategy that aims to fit the right treatment to each patient in the best way possible.

Roche is the world’s largest biotech company, with truly differentiated medicines in oncology, immunology, infectious diseases, ophthalmology and diseases of the central nervous system. Roche is also the world leader in in vitro diagnostics and tissue-based cancer diagnostics, and a frontrunner in diabetes management. Founded in 1896, Roche continues to search for better ways to prevent, diagnose and treat diseases and make a sustainable contribution to society. The company also aims to improve patient access to medical innovations by working with all relevant stakeholders. Thirty medicines developed by Roche are included in the World Health Organization Model Lists of Essential Medicines, among them life-saving antibiotics, antimalarials and cancer medicines. Roche has been recognised as the Group Leader in sustainability within the Pharmaceuticals, Biotechnology & Life Sciences Industry nine years in a row by the Dow Jones Sustainability Indices (DJSI).

The Roche Group, headquartered in Basel, Switzerland, is active in over 100 countries and in 2016 employed more than 94,000 people worldwide. In 2016, Roche invested CHF 9.9 billion in R&D and posted sales of CHF 50.6 billion. Genentech, in the United States, is a wholly owned member of the Roche Group. Roche is the majority shareholder in Chugai Pharmaceutical, Japan. For more information, please visit www.roche.com.

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