# Aclidinium clinical data published in the European Respiratory Journal confirms efficacy and safety of this new treatment for COPD patients

- ATTAIN pivotal study results confirm clinically significant improvement in bronchodilation, symptoms and health status, in COPD patients treated with aclidinium

- Aclidinium is expected to get regulatory response from the European Medicines Agency and the US Food and Drug Administration in 2012

**Barcelona, March 22nd, 2012 -** The European Respiratory Journal (ERJ) today published full results of ATTAIN (**A**clidinium **T**o **T**reat **A**irway obstruction **I**n COPD patie**N**ts), a six month double-blind placebo-controlled pivotal study comparing the efficacy and safety of inhaled aclidinium 200µg and 400µg BID (twice daily) versus placebo in patients with moderate to severe COPD (Chronic Obstructive Pulmonary Disease).

Significant improvement from baseline was observed with aclidinium 200 µg and 400 µg versus placebo for trough FEV1 (99 and 128 mL; both $p<0.0001$). Improvements in trough FEV1 with aclidinium 400 µg ranged from 105 to 140 mL throughout the study, which is consistently within the proposed meaningful clinically important difference (MCID) of over 100 mL.

Aclidinium also improved health status and relieve of symptoms, both being important goals in the management of COPD. In particular, there was a large improvement in health status as measured by St George's Respiratory Questionnaire (SGRQ) score over the 24 week period (baseline-adjusted mean SGRQ score was -3.8 and -4.6 units for the 200 µg and 400 µg doses respectively) in comparison to placebo.

Both aclidinium doses significantly reduced the rate of exacerbations of any severity compared with placebo, although the ATTAIN study was not powered for exacerbations and the patients recruited did not have a history of exacerbations.

*"COPD is an increasing public health problem which has a very big impact on patients' lives. As a result, there is a real need for effective and well tolerated treatment options,"* said ATTAIN's lead investigator Professor Paul Jones, St George's, University of London. *"The findings of ATTAIN are very encouraging and we would expect that improvements seen in health status and symptoms within the trial will translate into noticeable benefits for patients in every-day's practice".*

Aclidinium was well tolerated, with no differences between safety profiles of the two doses. The incidence of anticholinergic adverse events in both aclidinium groups was low and similar to placebo.

**About ATTAIN Phase III study**

ATTAIN was conducted in Europe and South Africa. It was a 24 week study, which assessed the long term bronchodilator efficacy and safety of inhaled aclidinium bromide 200µg and 400µg, both administered BID, compared to placebo, in 828 moderate to severe COPD patients. In addition, it assessed the benefits of aclidinium bromide 200µg and 400µg, compared to placebo in disease-related health status and COPD symptoms.

At Week 24, significant improvements from baseline ($p<0.0001$ for both doses) were observed in the primary efficacy endpoint of change in trough $FEV_1$ (forced expiratory volume in one second, or the amount of air that can be exhaled in the first second, following an inhalation) meaning 99 and 128 mL for 200µg and 400µg versus placebo respectively. This improvement was maintained throughout the study period and peak $FEV_1$ improvements on Day 1 were comparable with those achieved in Week 24.

There was a large improvement in the health related quality of life, as measured by the Saint George Respiratory Questionnaire (SGRQ) over the 24-weeks period in comparison to placebo ($p<0.001$ for aclidinium 200µg and $p<0.0001$ for 400 µg). Symptoms including breathlessness were also significantly reduced with the product, showing significant improvements in the TDI focal score (0.6 and 1.0 units; $p<0.05$ and $<0.001$, respectively) at Week 24.

Additionally, throughout the entire study, aclidinium produced statistically significant changes from baseline in trough FEV1 vs placebo at each time-point, which ranged from 77mL to 105mL for aclidinium 200µg and from 105mL to 140mL for aclidinium 400µg.

The rate of COPD exacerbations of any severity was lower with aclidinium 200µg and 400µg versus placebo (0.43 and 0.40 versus 0.60 per patient per year respectively). Compared with placebo, the rate ratio with aclidinium 200µg was 0.72 ($p<0.05$) and 0.67 ($p<0.05$) with aclidinium 400 µg.

Aclidinium was well tolerated in this study. The percentage of patients reporting adverse events and serious adverse events was similar to placebo, in both 200µg and 400µg treatment arms. The most common adverse events were headache and nasopharyngitis. Also, the incidence of anticholinergic adverse events was low and comparable to placebo (e.g. dry mouth and constipation were both <1%).

**Media enquiries:**
Bianca Daneshfar-Nia
+44 20 7611 3510
bianca.daneshfar-nia@ketchumpleon.com

**About aclidinium and the Genuair® inhaler**

Aclidinium is a novel, long-acting inhaled muscarinic antagonist (sometimes referred to as an anticholinergic) that has a long residence time at M3 receptors and a shorter residence time at M2 receptors. When given by inhalation, aclidinium leads to bronchodilation by inhibiting airway smooth muscle contraction. Aclidinium is rapidly hydrolysed in human plasma to two major inactive metabolites.

Aclidinium was administered to patients in the trials using a novel, state-of-the-art, user-friendly multidose dry powder inhaler (MDPI), Genuair®. This inhaler was designed with a “click and colour” feedback system which, through a 'coloured control window' and an audible click, indicates that the patient has inhaled the dose correctly. It also incorporates significant safety features such as a visible dose indicator, an anti-double-dosing mechanism and an end-of-dose lock-out system to prevent use of an empty inhaler.

Almirall has licensed US rights for aclidinium to Forest Laboratories, Inc., Kyorin Pharmaceutical Co. Ltd for Japan and Daewoong Pharmaceutical Co. Ltd in Korea, while Almirall maintains rights for the rest of the world. Almirall and Forest are jointly involved in the development of the compound.

Genuair® is a trademark owned by Almirall, S.A. and is pending approval from the appropriate regulatory authorities.

**About COPD**
The World Health Organization (WHO) has described COPD as a global epidemic; an estimated 64 million people have COPD worldwide. More than 3 million people died of the condition in 2005, which is equal to 5% of all deaths globally that year. Total deaths from COPD are projected to increase by more than 30% in the next 10 years without interventions to cut risks, particularly exposure to tobacco smoke.

The most common symptoms of COPD are breathlessness (an increased effort to breathe), heaviness or a 'need for air', excessive mucus, and a chronic cough. Some people feel they are gasping for breath. These symptoms get worse when exercising, in case of a respiratory infection or during an exacerbation -periods of time when there is a sudden increase in symptoms and the disease is worse. COPD affects the ability to breathe and is a progressive disease, which means that COPD gets worse over time. Daily activities may become more difficult as the disease worsens. There are significant unmet needs in the treatment of COPD and new therapies may be of value.

**About Almirall**
Almirall is an international pharmaceutical company based on innovation and committed to health. Headquartered in Barcelona, Spain, it researches, develops, manufactures and commercialises its own R&D and licensed drugs with the aim of improving people's health and wellbeing.

Almirall focuses its research resources on therapeutic areas related to the treatment of asthma, COPD (Chronic Obstructive Pulmonary Disease), gastrointestinal disorders, psoriasis and other dermatological conditions.

Almirall's products are currently present in over 70 countries while it has direct presence in Europe and Latin America through 12 affiliates.

For further information please visit the website at: www.almirall.com