11 November 2015

Paper demonstrating that RPL554 enhances CTFR activation in cystic fibrosis airway epithelia published in American Journal of Physiology

11 November 2015, Cardiff – Verona Pharma plc (AIM: VRP.L), the drug development company focused on first-in-class medicines to treat respiratory diseases, announces that a paper examining the effect of Verona Pharma's dual PDE3/4 inhibitor, RPL554, on the Cystic Fibrosis Transmembrane conductance Regulator (CFTR), an anion channel that is mutated in cystic fibrosis (CF), has been published. The paper, entitled: "The dual phosphodiesterase 3 and 4 inhibitor RPL554 stimulates CFTR and ciliary beating in primary cultures of bronchial epithelia" was published on-line in the peer reviewed Journal "American Journal of Physiology - Lung Cellular and Molecular Physiology" on 6 November 2015.

In pre-clinical models of CF, RPL554 was shown to have CFTR-stimulatory properties and that CFTR activation by RPL554 is mediated by its inhibition of PDE4 in cells from CF patients with the R117H/F508del mutation. RPL554-induced CFTR activity was further increased by the CFTR potentiator Kalydeco (ivacaftor, VX770) suggesting additional potential benefit by the drug combination.* The work was partly funded through the Venture and Innovation Award which Verona Pharma received from the UK CF Trust in November 2014.

RPL554 is Verona Pharma's lead pipeline asset. It is a first-in-class drug initially being evaluated in Phase II clinical trials as a nebulised treatment for acute exacerbations of COPD in the hospital setting.

Dr Jan-Anders Karlsson, the CEO of Verona Pharma, said:

"The results of this research further support our view that RPL554 has potential in a number of discrete indications. This peer-reviewed paper suggests that the drug could be a novel therapeutic option for the treatment of patients with cystic fibrosis. The data demonstrate that inhaled RPL554 activates CFTR, and stimulates an increase in ciliary beat frequency, thus having the potential to increase mucociliary clearance and as a consequence the ability to help to reinstate a central function impaired in this disease. We look forward to further exploring the possible use of RPL554 in cystic fibrosis, as well as reporting data from our Phase II trials of RPL554 in COPD and asthma in the first half of 2016."

The full abstract for this paper is reproduced below.

* This paper extends the research presented at the 2014 and 2015 North American Cystic Fibrosis Conference in the USA, announced in Company press releases on 29 September 2014 and 8 October 2015 respectively.

Title: The dual phosphodiesterase 3 and 4 inhibitor RPL554 stimulates CFTR and ciliary beating in primary cultures of bronchial epithelia

Mark John Turner, Elizabeth Matthes, Arnaud Billet, Amy J. Ferguson, David Y. Thomas, Scott H Randell, Lawrence E. Ostrowski, Kathy Abbott-Banner, John W. Hanrahan

American Journal of Physiology - Lung Cellular and Molecular Physiology Published 6 November 2015
DOI: 10.1152/ajplung.00324.2015

Cystic fibrosis (CF), a genetic disease caused by mutations in the CFTR gene, is a life-limiting disease characterized by chronic bacterial airway infection and severe inflammation. Some CFTR mutants have reduced responsiveness to cAMP/PKA signalling, hence pharmacological agents that elevate intracellular cAMP are potentially useful for the treatment of CF. By inhibiting cAMP breakdown, phosphodiesterase (PDE) inhibitors stimulate CFTR in vitro and in vivo. Here, we demonstrate that PDE inhibition by RPL554, a drug which has been shown to cause bronchodilation in asthma and COPD patients, stimulates CFTR-

dependent ion secretion across bronchial epithelial cells isolated from patients carrying the R117H/F508del CF genotype. RPL554-induced CFTR activity was further increased by the potentiator VX-770, suggesting additional benefit by the drug combination. RPL554 also increased cilia beat frequency in primary human bronchial epithelial cells. The results indicate RPL554 may increase mucociliary clearance through stimulation of CFTR and increasing ciliary beat frequency and thus could provide a novel therapeutic option for CF.

For further information please contact: Verona Pharma plc

Verona Pharma plc
Jan-Anders Karlsson, CEO
Tel: +44 (0)20 3283 4200
info@veronapharma.com

N+1 Singer (Nominated Adviser and UK Broker)
Aubrey Powell / James White
Tel: +44 (0)20 7496 3000

FTI Consulting
Simon Conway / Stephanie Cuthbert / Natalie Garland-Collins
Tel: +44 (0)20 3727 1000
veronapharma@fticonsulting.com

ICR, Inc. (US Media and Investor enquiries)
James Heins
Tel: +1 203-682-8251
James.Heins@icrinc.com

Stephanie Carrington
Tel. +1 646-277-1282
Stephanie.Carrington@icrinc.com

About Verona Pharma plc
Verona Pharma is a clinical-stage biopharmaceutical company focused on developing and commercializing innovative therapeutics for the treatment of respiratory diseases with significant unmet medical needs. Verona Pharma's product candidate, RPL554, is a first-in-class, inhaled, dual inhibitor of the enzymes phosphodiesterase 3 and 4 that acts as both a bronchodilator and an anti-inflammatory agent in a single compound. In clinical trials, treatment with RPL554 has been observed to result in statistically significant improvements in lung function as compared to placebo and has shown clinically meaningful and statistically significant improvements in lung function when added to two commonly used bronchodilators as compared to either bronchodilator administered as a single agent. RPL554 has also shown anti-inflammatory effects and been well tolerated in clinical trials. Verona Pharma is developing RPL554 for the treatment of chronic obstructive pulmonary disease (COPD), cystic fibrosis, and potentially asthma.

Forward Looking Statements
This press release contains forward-looking statements. All statements contained in this press release that do not relate to matters of historical fact should be considered forward-looking statements.

These forward-looking statements are based on management's current expectations. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from our expectations expressed or implied by the forward-looking statements, including, but not limited to, the development of DPI and MDI formulations of

RPL554 and the potential for these formulations to increase the market opportunity for the product, if approved.

These and other important factors could cause actual results to differ materially from those indicated by the forward-looking statements made in this press release. Any such forward-looking statements represent management's estimates as of the date of this press release. While we may elect to update such forward-looking statements at some point in the future, we disclaim any obligation to do so, even if subsequent events cause our views to change. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date of this press release.
