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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM 6-K**

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**Report of Foreign Private Issuer  
Pursuant to Rule 13a-16 or 15d-16  
Under the Securities Exchange Act of 1934**

**For the month of July, 2018**

**Commission File Number 001-38522**

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**Realm Therapeutics plc**  
(Translation of registrant's name into English)

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**267 Great Valley Parkway  
Malvern, PA 19355**  
(Address of principal executive office)

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Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F  Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

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**Realm Therapeutics Announces Publication of Pre-Clinical Study Demonstrating Comparable Activity of PR022 and Topical Tofacitinib in the Treatment of Atopic Dermatitis**

On July 10, 2018, Realm Therapeutics plc (the “Company”) announced the publication of a pre-clinical study demonstrating comparable activity of PR022 and topical Tofacitinib in the treatment of atopic dermatitis. A copy of the Company’s press release is attached to this Report on Form 6-K as Exhibit 99.1 and is incorporated by reference herein.

Exhibit

[99.1](#) [Press Release, dated July 10, 2018](#)

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**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**Realm Therapeutics plc**

July 10, 2018

By: /s/ Marella Thorell

Marella Thorell

Chief Financial Officer and Chief Operating Officer

## **Realm Therapeutics Announces Publication of Pre-Clinical Study Demonstrating Comparable Activity of PR022 and Topical Tofacitinib in the Treatment of Atopic Dermatitis**

**MALVERN, PA, July 10, 2018** - Realm Therapeutics plc (NASDAQ:RLM / AIM:RLM), a clinical stage biopharmaceutical company focused on developing novel therapeutics in immune-mediated diseases, today announces the publication of a pre-clinical study demonstrating comparable activity between PR022, Realm's proprietary topical gel formulation of high concentration hypochlorous acid (HOCl), and tofacitinib, a topical Janus kinase (JAK) inhibitor, in the treatment of Atopic Dermatitis. The article, "Comparison of topical tofacitinib and 0.1% hypochlorous acid in a murine atopic dermatitis model" was published in the current issue of *BMC Pharmacology and Toxicology*.

Researchers compared the effect of topical administration of PR022 and tofacitinib on Atopic Dermatitis-like lesions and itch behavior in a widely accepted NC/Nga mouse model. PR022 and tofacitinib showed similar reductions in skin lesions, scratching behavior, concentrations of IL-4, IL-13, TARC and TSLP, serum IgE and sensory nerve activation in dorsal root ganglia. In addition to efficacy comparisons, the study demonstrated that PR022 in 0.1% concentration was well tolerated. PR022 and tofacitinib are both currently in clinical studies for treatment of Atopic Dermatitis. The full publication can be accessed [here](#).

"This study reinforces our belief in PR022's potential for patients suffering from Atopic Dermatitis," said Alex Martin, Chief Executive Officer of Realm. "PR022 demonstrated anti-inflammatory and anti-itch properties in an animal model of the disease, comparable to the investigational JAK inhibitor in the study. In this study and others, PR022 has been well tolerated, which we believe could make it useful for the large pediatric segment of the Atopic Dermatitis patient population. We look forward to sharing the top line results from our Phase 2 clinical study of PR022 in Atopic Dermatitis later this quarter."

In May, Realm announced that it had completed enrollment in its Phase 2 study of PR022 for the treatment of Atopic Dermatitis. The randomized, double-blind, vehicle-controlled, multicenter, parallel-group study is being conducted in the United States and is assessing the safety and efficacy of multiple doses of PR022 in 122 adult patients with mild-to-moderate Atopic Dermatitis. Multiple endpoints are being explored, including Eczema Area and Severity Index (EASI), an investigator-assessed tool used to measure the extent (area) and severity of atopic eczema; Investigator Global Assessment (IGA), an investigator-assessed instrument measuring severity of Atopic Dermatitis on a 5-grade scale; as well as additional assessments of pruritus (itching) and quality of life.

### **About PR022**

PR022 is a proprietary, non-alcohol based, topical gel formulation of high concentration HOCl, potentially offering a differentiated mechanism of action for the treatment of Atopic Dermatitis. In pre-clinical models of Atopic Dermatitis, the Company has demonstrated that PR022 is associated with down modulation of key cytokines IL-4, IL-13 and TARC, as well as cytokines associated with itch, including IL-31 and TSLP. Importantly, these results occurred without the same immunosuppressive or other side effects associated with steroids, the current standard of care, suggesting a potential clinical advantage for PR022.

Realm is also evaluating its proprietary HOCl formulations in other indications including Acne Vulgaris and Psoriasis. Pre-clinical studies have shown in vitro and in vivo that HOCl can down modulate key cytokines such as TNF- $\alpha$  , IL1 , IFN- $\gamma$  , IL-8 and IL-12, which have been reported to be associated with Acne pathogenesis and TNF- $\alpha$ , IL-6, and IL-12, which have been reported at elevated levels in patients with Psoriasis.

### **About Atopic Dermatitis**

Atopic Dermatitis, a serious form of eczema, is a chronic, relapsing, inflammatory disease characterized by itchy, inflamed skin, which poses a significant burden on patients' quality of life and on the overall health care system. It is most commonly first diagnosed in childhood. Patients with Atopic Dermatitis have impaired function of their skin barrier, which, combined with skin damage as a result of the intense itching and scratching associated with the disease, puts them at risk for secondary infections due to colonization with pathogenic bacteria (particularly *Staphylococcus aureus*) and changes in the skin microbiome. Atopic Dermatitis affects an estimated 20 million people in the U.S., including up to 20% of children and up to 3% of adults, and prevalence continues to increase. Analysts estimate that this market will grow to approximately \$5 billion, excluding steroids, in the United States by 2022 driven by recent product approvals.

### **About Realm Therapeutics**

Realm Therapeutics is a clinical-stage biopharmaceutical company developing novel therapeutics that target the interplay between innate and adaptive immunity. The Company's programs seek to influence immune signalling and change the course of immune-mediated diseases in adults and children. Realm's lead drug development program utilizes the Company's proprietary immunomodulatory technology for the treatment of Atopic Dermatitis, and the Company is exploring its efficacy in other dermatology indications which include Acne Vulgaris, and Psoriasis, as well as other therapeutic areas. For more information on Realm Therapeutics please visit [www.realmtx.com](http://www.realmtx.com).

### **Forward Looking Statements**

*Certain statements made in this announcement are forward-looking statements, including with respect to the Company's clinical trials and product candidate development plans. These forward-looking statements are not historical facts but rather are based on the Company's current expectations, estimates, and projections about its industry; its beliefs; and assumptions. Words such as 'anticipates,' 'expects,' 'intends,' 'plans,' 'believes,' 'seeks,' 'estimates,' and similar expressions are intended to identify forward-looking statements. These statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties, and other factors, some of which are beyond the Company's control, are difficult to predict, and could cause actual results to differ materially from those expressed or forecasted in the forward-looking statements, including clinical developments and regulatory review of product candidates. The Company cautions shareholders and prospective shareholders not to place undue reliance on these forward-looking statements, which reflect the view of the Company only as of the date of this announcement. The forward-looking statements made in this announcement relate only to events as of the date on which the statements are made. The Company will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances, or unanticipated events occurring after the date of this announcement except as required by law or by any appropriate regulatory authority.*

## **G-RLM**

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