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

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER
Pursuant to Rule 13a-16 or 15d-16 under the Securities Exchange Act of 1934

For the Month of: October 2017

Commission File Number: 001-37847

MOTIF BIO PLC
(Exact name of registrant as specified in its charter)

125 Park Avenue
25th Floor
New York, New York 10011
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of 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): ☐

MOTIF BIO PLC
FORM 6-K

MOTIF BIO PRESENTS NEW PRE-CLINICAL DATA FOR ICLAPRIM AT IDWEEK 2017™

On October 6, 2017, Motif Bio plc (the "Company") issued a press release, a copy of which is attached as Exhibit 99.1 to this report on Form 6-K, announcing that new pre-clinical data with its investigational drug candidate iclaprim were presented on October 6, 2017 during the IDWeek 2017™ conference, which is held in San Diego, CA, from October 4, 2017 through October 8, 2017.

The information contained in Exhibit 99.1 is being furnished to the U.S. Securities and Exchange Commission (the "Commission") and shall not be deemed incorporated by reference into any of the registrant's registration statements or other filing with the Commission.

Exhibits

Exhibit 99.1	Press release issued by Motif Bio plc, dated October 6, 2017, entitled "Motif Bio Presents New Pre-Clinical Data for Iclaprim at IDWeek 2017™."

SIGNATURES

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

MOTIF BIO PLC

By: /s/ Graham Lumsden
Name: Graham Lumsden
Title: Chief Executive Officer

Date: October 6, 2017

Exhibit 99.1

6 October 2017

Motif Bio plc
("Motif Bio" or the "Company")

Motif Bio Presents New Pre-Clinical Data for Iclaprim at IDWeek 2017™

1. Pre-Clinical Data Support the Potential Use of Iclaprim in the Treatment of *Staphylococcus aureus* Pneumonia in Cystic Fibrosis Patients

2. Iclaprim Demonstrates Potent *In Vitro* Suppression of Exotoxins in MRSA Isolates

Motif Bio plc (AIM/NASDAQ: MTFB), a clinical stage biopharmaceutical company specialising in developing novel antibiotics, announced that new pre-clinical data with its investigational drug candidate iclaprim were presented today during the IDWeek 2017™ conference, held in San Diego, CA, 4-8 October 2017.

Efficacy Evaluation of Iclaprim in a Neutropenic Rat Lung Infection Model with Methicillin-Resistant Staphylococcus aureus Entrapped in Alginate Microspheres (Poster #1525)

David Huang, M.D., Ph.D., Chief Medical Officer of Motif Bio, presented data from an *in vivo* study evaluating the therapeutic potential of iclaprim in methicillin-resistant *Staphylococcus aureus* (MRSA) lung infections. In an *in vivo* model mimicking the pathophysiology observed in patients with cystic fibrosis, rats received either iclaprim 80 mg/kg (n=16), iclaprim 60 mg/kg (n=16), vancomycin 50 mg/kg (n=24) or placebo (n=29). Regardless of dose, the iclaprim-treated rats demonstrated 100% survival (33/33), while the vancomycin group demonstrated 91.7% survival (22/24) and the control group showed 48.3% survival (14/29). In addition to the improved survival rates, iclaprim treatment resulted in a significantly greater reduction in bacterial colony forming units (CFUs) compared to vancomycin (iclaprim 80 mg/kg vs vancomycin: p=0.0002; iclaprim 60 mg/kg vs vancomycin: p=0.05). The poster is available on the IDWeek website at this link (https://idsa.confex.com/idsa/2017/webprogram/Paper63283.html).

Dr Huang commented: "*Following the recently announced positive, top-line Phase 3 REVIVE-2 clinical trial results for iclaprim for acute bacterial skin and skin structure infections (ABSSSI), the data presented today at IDWeek underscore the potential utility of iclaprim in a range of patient populations with suspected MRSA infections, including cystic fibrosis patients with Staphylococcus aureus lung infections. Staphylococcus aureus is a common cause of pneumonia in patients with cystic fibrosis and we do not believe that any antibiotic has been approved for this indication. Some 80% or more of patients with cystic fibrosis die as a result of respiratory infections caused by a variety of bacteria, and MRSA infections have been growing in recent years. The encouraging new data presented today support developing iclaprim as a potential treatment option for MRSA infections in patients with cystic fibrosis, and iclaprim was recently granted Orphan Drug Designation in the U.S. for Staphylococcus aureus lung infections in this patient group.*"

Effects of Iclaprim and Trimethoprim on Exotoxin Production by Methicillin-Resistant Staphylococcus aureus (Poster #1219)

Amy Bryant, PhD, VA Medical Center, Boise, ID presented data from an *in vitro* study evaluating the effects of sub-inhibitory doses of dihydrofolate reductase inhibitors (iclaprim and trimethoprim), compared to cell wall-active agents (nafcillin, vancomycin) on the exotoxin production from two clinical MRSA isolates. Exotoxins such as alpha-hemolysin (AH) and Toxic shock syndrome toxin 1 (TSST-1) mediate the development of disease, and inhibition of toxin production is an important consideration in choosing appropriate treatments for MRSA infections. Vancomycin is recommended

for severe MRSA infections; however, increasing vancomycin resistance, poor clinical outcomes and kidney toxicity are serious concerns. The results, showed that iclaprim and trimethoprim delayed the onset of mRNA production, suppressed AH production, and delayed maximal TSST-1 in two community-acquired MRSA strains. The poster is available on the IDWeek website at this link (https://idsa.confex.com/idsa/2017/webprogram/Paper64753.html).

Dr. Huang said: "*Toxin suppression is an important therapeutic goal for severe infections due to toxin-producing Gram-positive pathogens such as MRSA. The in vitro data presented show that Iclaprim, at concentrations below those that inhibit bacterial growth, suppress toxin production. Iclaprim is 15-fold more active than trimethoprim, supporting the use of iclaprim to treat serious MRSA infections in hospitalised patients."*

For further information, please contact:

Motif Bio plc info@motifbio.com
Graham Lumsden (Chief Executive Officer)
Robert Dickey IV (Chief Financial Officer)

Walbrook PR Ltd. (UK FINANCIAL PR & IR) +44 (0) 20 7933 8780 / motifbio@walbrookpr.com
Paul McManus Mob: +44 (0)7980 541 893
Mike Wort Mob: +44 (0)7900 608 002

MC Services AG (EUROPEAN IR) +49 (0)89 210 2280
Raimund Gabriel raimund.gabriel@mc-services.eu

The Trout Group (US IR) +1 (646)378-2938
Michael Gibralter mgibralter@troutgroup.com

Lazar Partners (US PR) motiflp@lazarpartners.com
Chantal Beaudry +1 (646) 871-8480
Amy Wheeler +1 (646) 871-8486

Notes to Editors

IDWeek 2017™

IDWeek 2017™ is the combined annual meeting of the Infectious Diseases Society of America (IDSA), the Society for Healthcare Epidemiology of America (SHEA), the HIV Medicine Association (HIVMA), and the Pediatric Infectious Diseases Society (PIDS). The annual meeting is attended by more than 6,000 healthcare professionals practicing or involved in infectious diseases and healthcare epidemiology and prevention, including researchers, clinicians, quality and patient safety practitioners, and epidemiologists. It is a recognized forum for peer-reviewed presentations of new research on scientific advances and bench-to-bedside approaches in prevention, diagnosis, treatment, and epidemiology of infectious diseases, including HIV, across the lifespan.

About Iclaprim

Iclaprim is a novel investigational antibiotic that has a different and underutilised mechanism of action compared to other antibiotics. Iclaprim exhibits potent *in vitro* activity against gram-positive clinical isolates of many genera of staphylococci, including methicillin-resistant *Staphylococcus aureus* (MRSA). Iclaprim is rapidly bactericidal, achieving 99.9% *in vitro* kill against MRSA within 4 to 6 hours of drug exposure versus 8 to 10 hours for vancomycin. To date, iclaprim has been studied in

over 1,300 patients and healthy volunteers. In clinical studies iclaprim has been administered intravenously at a fixed dose with no dosage adjustment required in patients with renal impairment or in obese patients. The iclaprim fixed dose may, if approved, help reduce the resources required in hospitals since dosage adjustment by health care professionals is avoided and overall hospital treatment costs may be lower, especially in patients with renal impairment.

About Motif Bio

Motif Bio plc (AIM/NASDAQ: MTFB) is a clinical-stage biopharmaceutical company engaged in the research and development of novel antibiotics designed to be effective against serious and life-threatening infections in hospitalised patients caused by multi-drug resistant bacteria, including MRSA. The Company's lead product candidate, iclaprim, is being developed for high-risk MRSA patient populations. The first proposed indication, and near-term commercial opportunity, is for the treatment of acute bacterial skin and skin structure infections (ABSSSI), one of the most common bacterial infections, with 3.6 million patients hospitalised annually in the US. The Company believes that iclaprim may be suitable for first-line empiric therapy in ABSSSI patients, especially those with renal impairment, with or without diabetes. Unlike current standard of care antibiotics, in clinical trials to date, nephrotoxicity has not been observed with iclaprim and dosage adjustment has not been required in patients with renal impairment.

Iclaprim has an underutilised mechanism of action compared to other antibiotics. Clinical and microbiology data indicate iclaprim has a targeted gram-positive spectrum of activity, low propensity for resistance development, fixed dose administration and favourable tolerability profile. Additionally, data support that the inactive metabolites of iclaprim clear through the kidneys. The Company also plans to develop iclaprim for hospital acquired bacterial pneumonia (HABP), including ventilator associated bacterial pneumonia (VABP), as there is a high unmet need for new therapies in this indication. A Phase 2 trial was conducted to study iclaprim in patients with HABP. Iclaprim has been studied in an animal model of chronic pulmonary MRSA infection which mimics the pathophysiology observed in patients with cystic fibrosis. Results from this study were presented at IDWeek 2017™ on 6 October 2017 in San Diego, CA. Iclaprim has received Qualified Infectious Disease Product (QIDP) designation from the FDA together with Fast Track status. Upon acceptance by the FDA of a New Drug Application (NDA), iclaprim will receive Priority Review status and, if approved as a New Chemical Entity, will be eligible for 10 years of market exclusivity in the U.S. from the date of first approval, under the Generating Antibiotic Incentives Now Act (the GAIN Act). In Europe, 10 years of data exclusivity is anticipated.

Forward-Looking Statements

This press release contains forward-looking statements. Words such as "expect," "believe," "intend," "plan," "continue," "may," "will," "anticipate," and similar expressions are intended to identify forward-looking statements. Forward-looking statements involve known and unknown risks, uncertainties and other important factors that may cause Motif Bio's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Motif Bio believes that these factors include, but are not limited to, (i) the timing, progress and the results of clinical trials for Motif Bio's product candidates, (ii) the timing, scope or likelihood of regulatory filings and approvals for Motif Bio's product candidates, (iii) Motif Bio's ability to successfully commercialise its product candidates, (iv) Motif Bio's ability to effectively market any product candidates that receive regulatory approval, (v) Motif Bio's commercialisation, marketing and manufacturing capabilities and strategy, (vi) Motif Bio's expectation regarding the safety and efficacy of its product candidates, (vii) the potential clinical utility and benefits of Motif Bio's product candidates, (viii) Motif Bio's ability to advance its product candidates through various stages of development, especially through pivotal safety and efficacy trials, (ix) Motif Bio's estimates regarding the potential market opportunity for its product candidates, and (x) the factors discussed in the section entitled "Risk Factors" in Motif Bio plc's Annual Report on Form 20-F filed with the SEC on May 1, 2017, which is available on the SEC's web site, www.sec.gov. Motif Bio plc undertakes no obligation to update or revise any forward-looking statements.