
**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: December 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 REVIVE-1 PHASE 3 STUDY RESULTS WITH ICLAPRIM PUBLISHED IN PEER-REVIEWED JOURNAL

On December 21, 2017, MotifBio plc (the “Company”) issued a regulatory news service announcement, a copy of which is attached as Exhibit 99.1 to this report on Form 6-K, announcing that the results from REVIVE-1, the Company’s global Phase 3 clinical trial evaluating the investigational drug candidate iclaprim in patients with acute bacterial skin and skin structure infections, have been published in the peer-reviewed journal, *Clinical Infectious Diseases*. The positive topline results from this study were announced in April 2017.

This report on Form 6-K (including the exhibits hereto) shall not be deemed to be “filed” for purposes of the Securities Exchange Act of 1934, as amended, and shall not be incorporated by reference into any filing under the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference in such filing.

Exhibits

Exhibit 99.1 Regulatory news service announcement issued by MotifBio plc, dated December 21, 2017, entitled “MotifBio REVIVE-1 Phase 3 Study Results with Iclaprim Published in Peer-reviewed Journal, *Clinical Infectious Disease*.”

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: December 21, 2017



21 December 2017

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

Motif Bio REVIVE-1 Phase 3 Study Results with Iclaprim Published in Peer-reviewed Journal, *Clinical Infectious Diseases*

- *Iclaprim met the primary endpoint*
- *Iclaprim was well tolerated in the study*
- *Additional data from the previously announced topline results are included in the publication*

Motif Bio plc (AIM/NASDAQ: MTFB), a clinical stage biopharmaceutical company specialising in developing novel antibiotics, today announced that the results from REVIVE-1, a global Phase 3 clinical trial evaluating the investigational drug candidate iclaprim in patients with acute bacterial skin and skin structure infections (ABSSSI) have been published in the peer-reviewed journal, *Clinical Infectious Diseases*(1). The positive topline results from this study were announced in April 2017.

In the intent-to-treat (ITT) patient population, 80.9% of patients treated with iclaprim and 81% of patients treated with vancomycin achieved the primary endpoint of early clinical response (ECR), defined as a greater than or equal to 20% reduction in lesion size compared with baseline, at the early time point (ETP), 48 to 72 hours after the start of administration of the study drug. Non-inferiority (NI) (10% margin) thus was confirmed for iclaprim compared to vancomycin. Secondary analyses in the study included response to treatment at end of therapy (EOT), at test of cure (TOC), 7-14 days after the last dose of study drug, and safety and tolerability.

The ITT study population included 598 randomized patients from clinical trial sites in the U.S., Europe and Latin America. Patients were randomized 1:1 to receive either iclaprim 80mg IV or vancomycin 15 mg/kg IV. Treatments were administered every 12 hours for 5 to 14 days. Baseline and demographic characteristics were comparable between the two groups.

80% (16/20) of diabetic patients in the iclaprim group and 74% (26/35) of diabetic patients treated with vancomycin achieved ECR at ETP. 83% (5/6) of iclaprim-treated patients with moderate/severe renal impairment and 75% (9/12) of vancomycin-treated patients with moderate/severe renal impairment achieved ECR at ETP.

Iclaprim was well tolerated in the study. Treatment emergent adverse events (TEAEs) were generally mild, including headache (10.2% and 2.4%), nausea (9.9% and 5.7%), and fatigue (6.1% and 3.0%), reported in patients in the iclaprim group compared to the vancomycin group, respectively. TEAEs leading to discontinuation were 2.7% and 4.4% in patients in the iclaprim and vancomycin group, respectively. There were no study-drug related TEAEs related to nephrotoxicity in patients treated

(1) Huang DB, O'Riordan W, Overcash JS, Heller B, Amin F, File TM Jr, Wilcox MH, Torres A, Dryden M, Holland TL, McLeroth P, Shukla R, and Corey GR. A Phase 3, Randomized, double-blind, multicenter study to Evaluate the safety and efficacy of intravenous Iclaprim versus Vancomycin for the treatment of acute bacterial skin and skin structure infections suspected or confirmed to be due to Gram-positive pathogens: REVIVE-1. *Clinical Infectious Diseases* 2017. In Press.

with iclaprim compared to three reported cases of acute kidney injury in patients treated with vancomycin.

No significant differences were seen between treatment groups in mean values or mean changes in other routine serum laboratory parameters, urinalysis results, vital signs or physical examinations during treatment.

William O’Riordan, MD, FACEP, Chief Medical Officer, eStudySite and principal investigator of the REVIVE-1 study, said: “*ABSSSI is a serious infection for which patients are frequently hospitalised for several days. Many of these patients have co-morbidities, such as renal impairment and diabetes. For these patients in particular, there is an urgent need for safer, more effective treatment options. Iclaprim demonstrated strong efficacy and safety results, including no kidney toxicity, in REVIVE-1, the first of two positive Phase 3 trials in ABSSSI. With this profile and its fixed dosing, iclaprim, if approved, could be an important new treatment option for these very sick patients.*”

Iclaprim has been designated as a Qualified Infectious Disease Product (QIDP) by the U.S. Food and Drug Administration (FDA). This designation includes Priority Review upon acceptance of a New Drug Application (NDA), and, if approved, it is anticipated that iclaprim will be eligible to receive 10 years of market exclusivity in the U.S. from the date of approval. The FDA has also granted Fast Track designation for iclaprim. Motif Bio plans to submit an NDA by the end of the first quarter of 2018.

For further information please contact:

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Notes to Editors

About Acute Bacterial Skin and Skin Structure Infections

Acute bacterial skin and skin structure infections (ABSSSI) are one of the most common bacterial infections. ABSSSI are potentially serious infections that may require hospitalisation, intravenous antibiotics and/or surgical intervention and 3.6 million patients are hospitalised annually in the U.S. for ABSSSI. An ABSSSI is defined as a bacterial infection of the skin with a lesion size area of at least 75 cm² and includes cellulitis/erysipelas, wound infections, and major cutaneous abscesses.

Approximately 85% of ABSSSI are caused by Gram-positive bacteria, usually *Staphylococcus aureus*, including methicillin-resistant *S. aureus* (MRSA) and *Streptococcus pyogenes*.

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 ABSSSI, one of the most common bacterial infections, with 3.6 million patients hospitalised annually in the U.S. 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 pulmonary MRSA infection which mimics the pathophysiology observed in patients with cystic fibrosis. Iclaprim has been granted orphan drug designation by the U.S. FDA for the treatment of *Staphylococcus aureus* lung infections in patients with cystic fibrosis

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 US 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.