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**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  
of the Securities Exchange Act of 1934**

For the month of May 2018  
Commission File No.: 001-35773

**REDHILL BIOPHARMA LTD.**  
(Translation of registrant's name into English)

**21 Ha'arba'a Street, Tel Aviv, 64739, Israel**  
(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):

Attached hereto and incorporated by reference herein is a press release issued by the Registrant entitled:  
*"RedHill Biopharma Announces New U.S. Patent for its Experimental Ebola Therapy"*

This Form 6-K is incorporated by reference into the Company's Registration Statements on Form S-8 filed with the Securities and Exchange Commission on May 2, 2013 (Registration No. 333-188286), on October 29, 2015 (Registration No. 333-207654) and on July 25, 2017 (Registration No. 333-219441) and its Registration Statement on Form F-3 filed with the Securities and Exchange Commission on February 25, 2016 (Registration No. 333-209702).

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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.

REDHILL BIOPHARMA LTD.  
(Registrant)

Date: May 29, 2018

By: /s/ Dror Ben-Asher  
Dror Ben-Asher  
Chief Executive Officer

## RedHill Biopharma Announces New U.S. Patent for its Experimental Ebola Therapy

TEL-AVIV, Israel and RALEIGH, N.C., May 29, 2018 (GLOBE NEWSWIRE) – RedHill Biopharma Ltd. (NASDAQ:RDHL) (Tel-Aviv Stock Exchange:RDHL) (“RedHill” or the “Company”), a specialty biopharmaceutical company primarily focused on late clinical-stage development and commercialization of proprietary drugs for gastrointestinal diseases, today announced that the United States Patent and Trademark Office (USPTO) has issued a patent covering RedHill’s proprietary experimental therapy for the treatment of Ebola virus disease. The patent is expected to be valid until 2035.

As part of RedHill’s research collaboration with the U.S. National Institute of Allergy and Infectious Diseases (NIAID), which is part of the National Institutes of Health (NIH), the Company successfully completed a proof-of-concept study to evaluate its proprietary experimental therapy for the treatment of Ebola virus disease. The study evaluated survival outcomes and assessed disease severity through the comparison of viral loads in active treatment arms and placebo.

Results from the proof-of-concept study demonstrated a statistically significant difference in survival outcomes of the active arm versus placebo arm. In light of the results, RedHill intends to further advance the development program for the treatment of Ebola virus disease and has applied for additional support from the Office of Biomedical Advanced Research and Development Authority (BARDA) of the U.S. Department of Health & Human Resources to fund a second study to evaluate the potential efficacy of its proprietary experimental therapy.

If successful, this study is intended to provide supportive data for discussions with the U.S. Food and Drug Administration (FDA) for the potential use of the Animal Rule pathway for approval. According to FDA guidelines, approval under the Animal Rule can be pursued only if human efficacy studies cannot be conducted because the conduct of such trials is unethical or not feasible<sup>1</sup>.

Ebola virus disease is a severe and often fatal illness which can cause severe hemorrhagic fever in humans and has a mortality rate ranging from 25% to 90%<sup>2</sup>. There is currently no FDA-approved treatment for the Ebola virus disease.

### About RedHill Biopharma Ltd.:

RedHill Biopharma Ltd. (NASDAQ:RDHL) (Tel-Aviv Stock Exchange:RDHL) is a specialty biopharmaceutical company, primarily focused on the development and commercialization of late clinical-stage, proprietary drugs for the treatment of gastrointestinal diseases. RedHill commercializes and promotes three gastrointestinal products in the U.S.: **Donnatal**<sup>®</sup> - a prescription oral adjunctive drug used in the treatment of IBS and acute enterocolitis; **Esomeprazole Strontium Delayed-Release Capsules 49.3 mg** - a prescription proton pump inhibitor indicated for adults for the treatment of gastroesophageal reflux disease (GERD) and other gastrointestinal conditions; and **EnteraGam**<sup>®</sup> - a medical food intended for the dietary management, under medical supervision, of chronic diarrhea and loose stools. RedHill’s key clinical-stage development programs include: (i) **TALICIA**<sup>®</sup> (**RHB-105**) for the treatment of *Helicobacter pylori* infection with an ongoing confirmatory Phase III study and positive results from a first Phase III study; (ii) **RHB-104**, with an ongoing first Phase III study for Crohn’s disease; (iii) **RHB-204**, with a planned pivotal Phase III study for nontuberculous mycobacteria (NTM) infections; (iv) **BEKINDA**<sup>®</sup> (**RHB-102**), with positive results from a Phase III study for acute gastroenteritis and gastritis and positive results from a Phase II study for IBS-D; (v) **YELIVA**<sup>®</sup> (**ABC294640**), a first-in-class SK2 selective inhibitor, targeting multiple oncology, inflammatory and gastrointestinal indications, with an ongoing Phase IIa study for cholangiocarcinoma; (vi) **RHB-106**, an encapsulated bowel preparation licensed to Salix Pharmaceuticals, Ltd. and (vii) **RHB-107 (formerly MESUPRON)**, a Phase II-stage first-in-class, serine protease inhibitor, targeting cancer and inflammatory gastrointestinal diseases. More information about the Company is available at: [www.redhillbio.com](http://www.redhillbio.com).

*This press release contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements may be preceded by the words “intends,” “may,” “will,” “plans,” “expects,” “anticipates,” “projects,” “predicts,” “estimates,” “aims,” “believes,” “hopes,” “potential” or similar words. Forward-looking statements are based on certain assumptions and are subject to various known and unknown risks and uncertainties, many of which are beyond the Company’s control, and cannot be predicted or quantified and consequently, actual results may differ materially from those expressed or implied by such forward-looking statements. Such risks and uncertainties include, without limitation, risks and uncertainties associated with (i) the initiation, timing, progress and results of the Company’s research, manufacturing, preclinical studies, clinical trials, and other therapeutic candidate development efforts; (ii) the Company’s ability to advance its therapeutic candidates into clinical trials or to successfully complete its preclinical studies or clinical trials; (iii) the extent and number of additional studies that the Company may be required to conduct and the Company’s receipt of regulatory approvals for its therapeutic candidates, and the timing of other regulatory filings, approvals and feedback; (iv) the manufacturing, clinical development, commercialization, and market acceptance of the Company’s therapeutic candidates; (v) the Company’s ability to successfully promote Donnatal<sup>®</sup> and Esomeprazole Strontium Delayed-Release Capsules 49.3 mg and commercialize EnteraGam<sup>®</sup>; (vi) the Company’s ability to establish and maintain corporate collaborations; (vii) the Company’s ability to acquire products approved for marketing in the U.S. that achieve commercial success and build its own marketing and commercialization capabilities; (viii) the interpretation of the properties and characteristics of the Company’s therapeutic candidates and the results obtained with its therapeutic candidates in research, preclinical studies or clinical trials; (ix) the implementation of the Company’s business model, strategic plans for its business and therapeutic candidates; (x) the scope of protection the Company is able to establish and maintain for intellectual property rights covering its therapeutic candidates and its ability to operate its business without infringing the intellectual property rights of others; (xi) parties from whom the Company licenses its intellectual property defaulting in their obligations to the Company; (xii) estimates of the Company’s expenses, future revenues, capital requirements and needs for additional financing; (xiii) the effect of patients suffering adverse experiences using investigative drugs under the Company’s Expanded Access Program; and (xiv) competition from other companies and technologies within the Company’s industry. More detailed information about the Company and the risk factors that may affect the realization of forward-looking statements is set forth in the Company’s filings with the Securities and Exchange Commission (SEC), including the Company’s Annual Report on Form 20-F filed with the SEC on February 22, 2018. All forward-looking statements included in this press release are made only as of the date of this press release. The Company assumes no obligation to update any written or oral forward-looking statement, whether as a result of new information, future events or otherwise, unless required by law.*

<sup>1</sup> Product Development Under the Animal Rule – Guidance for Industry, U.S. Department of Health and Human Services, Food and Drug Administration, Center for Drug Evaluation and Research (CDER), Center for Biologics Evaluation and Research (CBER), October 2015.

<sup>2</sup> World Health Organization (WHO), Fact sheet No° 103, January 2016.

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