



Press Release

RedHill Biopharma Announces Allowance of Two New RHB-104 Patents Ahead of Top-Line Phase III Results for Crohn's Disease

- **RedHill has received Notices of Allowance for two new patents covering RHB-104 in the U.S. and Europe which are expected to be valid until at least 2029, once granted**
- **Top-line results from the first Phase III study with RHB-104 for Crohn's disease are expected to be announced in the coming weeks**
- **RedHill's robust RHB-104 patent portfolio is comprised of 30 patents worldwide, including five patents in the U.S., with additional patent claims being pursued**
- **Worldwide sales of Crohn's disease therapies are estimated to exceed \$10 billion in 2018**

TEL-AVIV, Israel / RALEIGH, N.C., July 2, 2018 -- [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 (GI) diseases, today announced that it has received a Notice of Allowance from the United States Patent and Trademark Office (USPTO) and an Intention to Grant from the European Patent Office (EPO) for two new patents covering RHB-104, expected to be valid until at least February 5, 2029, once granted.

RHB-104 is a potentially ground-breaking, proprietary, orally-administered antibiotic combination therapy, with potent intracellular, antimycobacterial and anti-inflammatory properties. The development of RHB-104 for Crohn's disease is based on the hypothesis that Crohn's disease is caused by *Mycobacterium avium subspecies paratuberculosis* (MAP) infection in susceptible patients.

RedHill's robust patent portfolio covering RHB-104 is comprised of 30 patents in many countries, including five patents in the U.S., with additional patent claims being pursued.

RedHill is conducting a first Phase III study of RHB-104 in Crohn's disease (the MAP US study). The last patient enrolled in the study completed 26 weeks of treatment for primary endpoint evaluation in early May 2018, and top-line results from the study are expected to be announced in the coming weeks.

The MAP US study is a randomized, double-blind, placebo-controlled first Phase III study evaluating the safety and efficacy of RHB-104 in subjects with moderately to severely active Crohn's disease (defined as Crohn's Disease Active Index (CDAI) between 220 and 450). The primary endpoint is disease remission, defined as CDAI value of less than 150 at week 26. The study has enrolled 331 patients across clinical sites in the U.S., Canada, Europe, Australia, New Zealand and Israel.

An independent Data and Safety Monitoring Board (DSMB) held two pre-planned meetings and unanimously recommended to continue the study, with no safety concerns. The first DSMB meeting reviewed safety data from the study and the second DSMB meeting reviewed safety and efficacy data from the first 222 subjects who had completed week 26 assessments of the study.

In addition, an open-label extension Phase III study (MAP US2 study) is ongoing to evaluate the safety and efficacy of RHB-104 in subjects who remain with active Crohn's disease (CDAI \geq 150) after 26 weeks of blinded study therapy in the ongoing Phase III MAP US study.

Additional clinical studies are most likely to be required to support a U.S. New Drug Application (NDA) for RHB-104, if filed. If the MAP US study results are positive, RedHill will meet with key opinion leaders and the U.S. Food and Drug Administration (FDA) to present the data package and discuss the preferred path to potential approval.

Approximately 1.5 million people were diagnosed with Crohn's disease worldwide in 2017¹. Worldwide sales of Crohn's disease therapies are estimated to exceed \$10 billion in 2018².

The MAP US Phase III study is registered on www.ClinicalTrials.gov, a web-based service of the U.S. National Institute of Health, which provides access to information on publicly and privately-supported clinical studies.

About RHB-104:

Currently in a first Phase III study for the treatment of Crohn's disease (MAP US study), with top-line results expected in the coming weeks, RHB-104 is a potentially ground-breaking, proprietary, orally-administered antibiotic combination therapy, with potent intracellular, antimycobacterial and

¹ GlobalData PharmaPoint: Crohn's Disease - Global Forecast 2016–2026, September 2017.

² GlobalData PharmaPoint: Crohn's Disease - Global Forecast 2016–2026, September 2017.

anti-inflammatory properties. RHB-104 is based on the hypothesis that Crohn's disease is caused by *Mycobacterium avium subspecies paratuberculosis* (MAP) infection in susceptible patients. The development of RHB-104 is consistent with the growing awareness of the possibility that a bacterially-induced dysregulated immune system may contribute to the pathogenesis of various autoimmune diseases of unknown etiology. An independent Data and Safety Monitoring Board (DSMB) held two pre-planned meetings and unanimously recommended to continue the MAP US Phase III study, with no safety concerns. Clinical trials conducted with earlier formulations of RHB-104 include an Australian Phase III study conducted by Pharmacia/Pfizer. RedHill has conducted several supportive studies with the current formulation of RHB-104 and a population pharmacokinetic (pop-PK) study is ongoing as part of the Phase III MAP US study. Additionally, an open-label extension Phase III study (MAP US2 study) is ongoing to assess the safety and efficacy of RHB-104 in subjects who have completed week 26 assessments in the ongoing Phase III MAP US study and remain with active Crohn's disease (CDAI \geq 150). Additional clinical studies are likely to be required to support a U.S. NDA for RHB-104, if filed. RHB-104 is covered by several issued and pending patents. RedHill also completed a Phase IIa, proof-of-concept clinical study evaluating RHB-104 as an add-on therapy to interferon beta-1a in subjects treated for relapsing-remitting multiple sclerosis (CEASE MS study), supporting additional studies.

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 four gastrointestinal products in the U.S.: **Donnatal**[®] - a prescription oral adjunctive drug used in the treatment of IBS and acute enterocolitis; **Mytesi**[®] - an anti-diarrheal indicated for the symptomatic relief of non-infectious diarrhea in adult patients with HIV/AIDS on anti-retroviral therapy; **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**[®] - 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**[®] (**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**[®] (**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**[®] (**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.

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, the risk that the new patents will not be valid until the dates expected, that the top-line results of the Phase III study with RHB-104 will be later than expected or that worldwide sales of Crohn’s disease will not reach the amount currently estimated and 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[®] and Esomeprazole Strontium Delayed-Release Capsules 49.3 mg and commercialize EnteraGam[®]; (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.

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