PolyPid Announces 100th Patient Enrolled in SHIELD I Phase 3 Clinical Trial of D-PLEX for the Prevention of Post-Abdominal Surgery Incisional Infections

Top-line Data Anticipated by Year End 2021

Enrollment Also Continues to Progress in Company's Second Phase 3 Clinical Trial, SHIELD II

PETAH TIKVA, Israel, Feb. 16, 2021 — PolyPid Ltd. (Nasdaq: PYPD), a late-stage biopharmaceutical company aiming to improve surgical outcomes through locally administered, controlled, extended-release therapeutics, today announced that the 100th patient has been enrolled and randomized in the SHIELD I (**S**urgical site **H**ospital acquired **I**nfection pr**E**vention with **L**ocal **D**-plex) trial, the Company's first of two Phase 3 clinical trials for its lead product candidate, D-PLEX$_{100}$, for the prevention of post-abdominal surgery incisional infections (soft tissue).

"Enrollment in our first Phase 3 clinical trial, SHIELD I, continues to progress as expected, and we are excited to have now enrolled and randomized the 100th patient into this important study," said Amir Weisberg, PolyPid's CEO. "We continue to anticipate the availability of top-line results from SHIELD I by end of this year. Moreover, enrollment in our second Phase 3 trial, SHIELD II, which has broader eligibility criteria than SHIELD I with the inclusion of minimally invasive surgical procedures, commenced in late 2020 and also continues to advance as expected."

SHIELD I is a prospective, multinational, multicenter, randomized, double blind Phase 3 trial designed to assess the efficacy and safety of D-PLEX$_{100}$ in the prevention of incisional surgical site infections (SSIs) post-abdominal surgery. The primary endpoint of the trial is the combination of incisional SSIs and mortality rate as measured by the proportion of subjects with either an SSIs event, as determined by a blinded and independent adjudication committee, or mortality for any reason within 30 days post-surgery. The trial will enroll a minimum of 616 patients, with a maximum of about 900 patients, as defined by the adaptive study design, in more than 60 centers in the United States, Europe and Israel.

About D-PLEX$_{100}$

PolyPid's lead product candidate, D-PLEX$_{100}$, is a novel drug product candidate designed to provide local prolonged and controlled anti-bacterial activity directly at the surgical site to prevent SSIs. Following the administration of D-PLEX$_{100}$ into the surgical site, the PLEX technology enables a prolonged and constant release of the broad-spectrum antibiotic doxycycline, resulting in high local concentration of the drug for a period of four weeks for the prevention of SSIs, with additional potential to prevent SSIs caused by antibiotic-resistant

bacteria at the surgical site. D-PLEX$_{100}$ has received Breakthrough Therapy Designation from the U.S. Food and Drug Administration (FDA) for the prevention of SSIs in patients undergoing elective colorectal surgery. D-PLEX$_{100}$ has also received two Qualified Infectious Disease Product (QIDP) designations as well as two Fast Track designations for the prevention of post-abdominal surgery incisional infection and for the prevention of sternal wound infection post-cardiac surgery.

About PolyPid

PolyPid Ltd. (Nasdaq: PYPD) is a late-stage biopharma company aiming to improve surgical outcomes through locally administered, controlled, extended-release therapeutics. PolyPid's proprietary PLEX (Polymer-Lipid Encapsulation matriX) technology pairs with medications, enables precise delivery of drugs at effective release rates, over durations ranging from several days to months. PolyPid's lead product candidate D-PLEX$_{100}$ is in Phase 3 clinical trials for the prevention of sternal and abdominal surgical site infections (SSIs).

For additional company information, please visit http://www.polypid.com and follow us on Twitter and LinkedIn.

Forward-looking Statements

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act and other securities laws. Words such as "expects," "anticipates," "intends," "plans," "believes," "seeks," "estimates" and similar expressions or variations of such words are intended to identify forward-looking statements. For example, the Company is using forward-looking statements when it discusses statements relating to the expected timing of trials and release of the results thereof, the potential benefits of PLEX and OncoPLEX, the sufficiency of the Company's cash to fund future operations, and all statements (other than statements of historical facts) that address activities, events, or developments that the Company intends, expects, projects, believes, or anticipates will or may occur in the future. Forward-looking statements are not historical facts, and are based upon management's current expectations, beliefs and projections, many of which, by their nature, are inherently uncertain. Such expectations, beliefs and projections are expressed in good faith. However, there can be no assurance that management's expectations, beliefs and projections will be achieved, and actual results may differ materially from what is expressed in or indicated by the forward-looking statements. Forward-looking statements are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the forward-looking statements. For a more detailed description of the risks and uncertainties affecting the Company, reference is made to the Company's reports filed from time to time with the Securities and Exchange Commission ("SEC"), including, but not limited to, the risks detailed in the Company's prospectus filed pursuant to Rule 424(b)(4), filed with the SEC on June 29, 2020. Forward-looking statements speak only

as of the date the statements are made. The Company assumes no obligation to update forward-looking statements to reflect actual results, subsequent events or circumstances, changes in assumptions or changes in other factors affecting forward-looking information except to the extent required by applicable securities laws. If the Company does update one or more forward-looking statements, no inference should be drawn that the Company will make additional updates with respect thereto or with respect to other forward-looking statements.

References and links to websites have been provided as a convenience, and the information contained on such websites is not incorporated by reference into this press release. PolyPid is not responsible for the contents of third-party websites.

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