

Prospectus Supplement
(To the Prospectus dated January 6, 2023)



321,207 Shares of Common Stock

2,586,207 Series A-1 Warrants to Purchase up to 2,586,207 Shares of Common Stock

2,586,207 Series A-2 Warrants to Purchase up to 2,586,207 Shares of Common Stock

2,265,000 Pre-Funded Warrants to Purchase up to 2,265,000 Shares of Common Stock

7,437,414 Shares of Common Stock Underlying the Common Warrants and Pre-Funded Warrants

This prospectus supplement updates, supersedes and amends certain information contained in the prospectus dated January 6, 2023 (the “Original Prospectus”), relating to the registered direct offering of an aggregate of 321,207 shares of common stock, par value \$0.01 per share, or the Common Stock, 2,586,207 series A-1 warrants to purchase up to an aggregate amount 2,586,207 shares of Common Stock, at an exercise price of \$2.65 per share (the “Series A-1 Warrants”), 2,586,207 series A-2 warrants to purchase up to an aggregate amount of 2,586,207 shares of Common Stock, at an exercise price of \$2.65 per share (the “Series A-2 Warrants” and together with the Series A-1 Warrants, the “Existing Warrants”), and 2,265,000 pre-funded warrants to purchase up to 2,265,000 shares of Common Stock. The Existing Warrants have been amended as described below under “Amendments to Existing Warrants.”

This prospectus supplement should be read in conjunction with the Original Prospectus, and is qualified by reference to the Original Prospectus, except to the extent that the information presented herein supersedes the information contained in the Original Prospectus. This prospectus supplement is not complete without, and may only be delivered or used in connection with, the Original Prospectus, including any amendments or supplements thereto. We may amend or supplement the Original Prospectus from time to time by filing amendments or supplements as required. You should read the entire Original Prospectus and any amendments or supplements carefully before you make an investment decision.

Our common stock is listed on the NASDAQ Capital Market under the symbol “OPGN.” On May 1, 2023, the last reported sale price of our common stock on the NASDAQ Capital Market was \$0.7785 per share.

Investing in our securities involves a high degree of risk. See “Risk Factors” in the Original Prospectus and documents incorporated therein by reference for a discussion of such risk factors, which factors should be read carefully in connection with an investment in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

AMENDMENTS TO EXISTING WARRANTS

This Supplement is being filed to disclose the following:

On May 1, 2023, we entered into a securities purchase agreement entered with a single institutional investor (the “Registered Direct Offering”), and the accompanying base prospectus under our registration statement on Form S-1 (Registration No. 333-271190). In connection with the Registered Direct Offering, the Company entered into a warrant amendment agreement (the “Warrant Amendment Agreement”) with the purchaser in the Registered Direct Offering under which the Company agreed to amend certain outstanding warrants to purchase up to an aggregate of 6,396,903 shares of common stock that were previously issued in 2018, 2021, 2022 and 2023 to the purchaser, with exercise prices ranging from \$2.65 to \$7.54 per share, in consideration for their purchase of approximately \$3.5 million of securities in the Registered Direct Offering.

Under the Warrant Amendment Agreement, with respect to Existing Warrants to purchase up to an aggregate of 6,396,903 shares of common stock held by the institutional investor in the Registered Direct Offering and covered by the Warrant Amendment Agreement, the Company agreed to (i) lower the exercise price of such Existing Warrants to \$0.7785 per share, (ii) provide that such Existing Warrants, as amended, will not be exercisable until the receipt of stockholder approval for the exercisability of the common stock purchase warrants issued to the Investor in the Registered Direct Offering and (iii) extend the original expiration date of such Existing Warrants to five years following the receipt of such stockholder approval. These amendments will become effective on the closing of the Registered Direct Offering, when each investor has satisfied its purchase commitment to the Company, which is expected to occur on May 4, 2023.

Prospectus supplement dated May 1, 2023