

**Prospectus Supplement**  
**(To the Prospectus dated August 19, 2021)**



**Up to \$3,500,000 of Common Stock**

---

This prospectus supplement updates and amends certain information contained in the prospectus supplement dated June 24, 2022 (the “Original Supplement”), to the prospectus dated August 19, 2021 (the “Base Prospectus” and, together with the Original Supplement, the “Original Prospectus”), relating to the offer and sale of shares of our common stock, par value \$0.01 per share, having an aggregate offering price of up to \$10.65 million from time to time through H.C. Wainwright & Co., LLC, or Wainwright, as sales agent, in “at-the-market” offerings (as defined in Rule 415 promulgated under the Securities Act of 1933, as amended) pursuant to the at-the-market common stock sales agreement (the “Sales Agreement”), dated June 24, 2022, that we entered into with Wainwright.

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.

Our common stock is listed on the NASDAQ Capital Market under the symbol “OPGN.” On September 29, 2022, the last reported sale price of our common stock on the NASDAQ Capital Market was \$0.38 per share.

The aggregate market value of our outstanding common stock held by non-affiliates pursuant to General Instruction I.B.6 of Form S-3 was approximately \$30,316,860, which was calculated based on 48,338,500 shares of common stock outstanding, as of September 29, 2022, of which 48,122,000 shares were held by non-affiliates, and a price per share of \$0.63, which was the closing sale price of our common stock on the NASDAQ Capital Market on August 11, 2022. During the 12 calendar months prior to and including the date of this prospectus supplement, we have sold \$1,029,507 of securities pursuant to General Instruction I.B.6 of Form S-3.

Under the Original Supplement, we initially registered up to \$10,650,000 of our common stock, \$0.01 par value per share, for offer and sale pursuant to the Sales Agreement. From June 24, 2022, the date of the Sales Agreement, through the date of this prospectus supplement, we sold an aggregate of 1,714,882 shares of common stock for an aggregate gross purchase price of \$1,029,507 under the Original Prospectus. As of the date of this prospectus supplement, we are decreasing the amount of common stock that we are offering pursuant to the Sales Agreement, such that we are offering up to an aggregate of \$3,500,000 of our common stock for sale under the Sales Agreement from and after the date hereof, not including the shares of common stock previously sold.

**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.**

---

**H.C. Wainwright & Co.**

---

**Prospectus supplement dated September 30, 2022**