

Prospectus Supplement No. 4
(To Prospectus filed on April 28, 2017, as supplemented
by Prospectus Supplement No. 1 dated May 22, 2017, Prospectus Supplement No. 2 dated May 22, 2017, and Prospectus Supplement No. 3 dated June 2,
2017)

ENUMERAL BIOMEDICAL HOLDINGS, INC.

This Prospectus Supplement No. 4 supplements the information contained in the Prospectus, dated as of April 28, 2017, as supplemented by Prospectus Supplement No. 1 dated May 22, 2017, Prospectus Supplement No. 2 dated May 22, 2017, and Prospectus Supplement No. 3 dated June 2, 2017, relating to the resale of up to 133,674,598 shares of our common stock by selling stockholders.

This Prospectus Supplement No. 4 is being filed to include the information set forth in our Current Report on Form 8-K, which was filed with the Securities and Exchange Commission on June 14, 2017.

You should read this Prospectus Supplement No. 4 in conjunction with the Prospectus. This Prospectus Supplement No. 4 is qualified by reference to the Prospectus, except to the extent that the information contained in this Prospectus Supplement No. 4 supersedes the information contained in the Prospectus. This Prospectus Supplement No. 4 is not complete without, and may not be utilized except in connection with, the Prospectus.

You should consider carefully the risks that we have described in “Risk Factors” beginning on page 7 of the Prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this Prospectus Supplement is June 14, 2017

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **June 9, 2017**

Enumeral Biomedical Holdings, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or Other Jurisdiction
of Incorporation)

000-55415
(Commission File
Number)

99-0376434
(I.R.S. Employer
Identification Number)

200 CambridgePark Drive, Suite 2000
Cambridge, Massachusetts
(Address of Principal Executive Offices)

02140
(Zip Code)

(617) 945-9146
(Registrant's telephone number, including area code)

N/A
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter). Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 5.02 **Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.**

On June 9, 2017, Enumeral Biomedical Holdings, Inc. (the “Company”) entered into an amendment (the “Amendment”) to that certain separation letter agreement (the “Separation Agreement”), dated as of August 4, 2016, by and between the Company and Arthur H. Tinkelenberg, Ph.D., the Company’s former President and Chief Executive Officer. Pursuant to the terms of the Separation Agreement, the Company had agreed, among other things, to make certain payments to Dr. Tinkelenberg in connection with his separation of employment with the Company.

Pursuant to the terms of the Amendment, Dr. Tinkelenberg agreed to forego the remaining amounts of the severance payments due to him under the Separation Agreement, effective as of June 1, 2017. In addition, the Company agreed that all remaining unvested options to purchase shares of the Company’s common stock held by Dr. Tinkelenberg fully vest and become exercisable as of June 1, 2017. The Company also waived the non-competition restrictions on Dr. Tinkelenberg under the Separation Agreement.

The foregoing summary of the Amendment does not purport to be complete and is qualified in its entirety by reference to the Amendment, which is filed as Exhibit 10.1 to this Current Report on Form 8-K and incorporated by reference herein.

Item 8.01 **Other Events.**

On June 9, 2017, the Company implemented a restructuring plan that eliminates a significant portion of the Company’s existing headcount, including its research and development function.

The Company has previously announced that it has sufficient liquidity to fund operations into June 2017. The Company’s board of directors is continuing to explore various cost reduction strategies, in addition to the research and development headcount reductions, to potentially extend the Company’s cash runway beyond June 2017. The Company has previously reported that it is exploring a range of potential transactions, which may include public or private equity offerings, debt financings, collaborations and licensing arrangements, and/or other strategic alternatives, including a merger, sale of assets or other similar transactions. If the Company is unable to effect a strategic transaction or raise additional capital on a timely basis in the near term, the Company will be required to further downsize or wind down its operations through liquidation, bankruptcy, or a sale of its assets.

Item 9.01 **Financial Statements and Exhibits.**

(d) Exhibits

<u>Exhibit Number</u>	<u>Description</u>
10.1	Amendment No. 1 to Letter Agreement, dated as of June 9, 2017, between Arthur H. Tinkelenberg, Ph.D. and Enumeral Biomedical Holdings, Inc.

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 hereunto duly authorized.

ENUMERAL BIOMEDICAL HOLDINGS, INC.

Dated: June 14, 2017

By: /s/ Kevin G. Sarney
Name: Kevin G. Sarney
Title: Vice President of Finance, Chief Accounting Officer and
Treasurer

Exhibit Index

<u>Exhibit Number</u>	<u>Description</u>
10.1	Amendment No. 1 to Letter Agreement, dated as of June 9, 2017, between Arthur H. Tinkelenberg, Ph.D. and Enumeral Biomedical Holdings, Inc.

AMENDMENT NO. 1 TO LETTER AGREEMENT

This Amendment No. 1 to Letter Agreement (the "Amendment"), dated as of June 9, 2017, amends that certain letter agreement (the "Letter Agreement"), dated as of August 4, 2016, by and between Enumeral Biomedical Holdings, Inc. (with its subsidiaries, the "Company") and Arthur H. Tinkelenberg, Ph.D. ("Executive"). Capitalized word used but not otherwise defined herein shall have the respective meanings ascribed to such terms in the Letter Agreement.

Pursuant to the terms of the Letter Agreement, the Company agreed to make certain payments to Executive in connection with Executive's separation of employment with the Company. In consideration of the mutual covenants and promises contained herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Company and Executive agree to amend the Letter Agreement as follows:

1. Executive foregoes, and the Company shall have no further obligation to pay, any and all remaining amounts of the Severance Payment due to Executive, effective as of June 1, 2017. Executive acknowledges and agrees that the installment of the Severance Payment made by the Company to Executive on May 31, 2017 will be the last installment of the Severance Payment due under the Letter Agreement.
2. All of Executive's options to purchase shares of the Company's common stock and restricted stock grants in the Company held by the Executive or in a trust established by Executive for the benefit of Executive's spouse, children or heirs that were unvested as of the Separation Date have continued to vest during the Severance Period pursuant to the vesting schedules set forth in such option agreements and restricted stock agreements, as applicable. All remaining unvested options and shares of restricted stock shall now fully vest and become exercisable as of June 1, 2017. For the avoidance of doubt, the period for exercising all such options to purchase common stock of the Company is extended to July 28, 2022 (which is the date that is five years following the expiration of the Severance Period).
3. Effective June 1, 2017, Paragraphs 11 and 12 of the Letter Agreement ("Post-Termination Restrictions") are hereby deleted in their entirety. Similarly, effective June 1, 2017, the Company hereby waives, cancels and forgives all restrictions, of any kind, imposed on Executive pursuant to Section 7 ("Non-Competition") of the Amended Employment Agreement. For the avoidance of doubt, effective June 1, 2017, Paragraphs 11 and 12 of the Letter Agreement and Section 7 of the Amended Employment Agreement shall be null and void.
4. Except as explicitly set forth herein, the terms and conditions of the Letter Agreement remain unchanged and in full force and effect.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of the day and year set forth above.

ENUMERAL BIOMEDICAL HOLDINGS, INC.

By: /s/ Matthew A. Ebert
Name: Matthew A. Ebert
Title: General Counsel and Corporate Secretary

EXECUTIVE

/s/ Arthur H. Tinkleberg, Ph.D.
Name: Arthur H. Tinkleberg, Ph.D.
