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

SCHEDULE 14D-9
(Rule 14d-101)

SOLICITATION/RECOMMENDATION STATEMENT
UNDER SECTION 14(d)(4) OF THE SECURITIES EXCHANGE ACT OF 1934

RAPID MICRO BIOSYSTEMS, INC.
(Name of Subject Company)

RAPID MICRO BIOSYSTEMS, INC.
(Name of Person(s) Filing Statement)

CLASS A COMMON STOCK, PAR VALUE $0.01 PER SHARE
CLASS B COMMON STOCK, PAR VALUE $0.01 PER SHARE
(Title of Class of Securities)

75340L104
(CUSIP Number of Class of Securities)

Robert Spignesi
President Chief Executive Officer
Rapid Micro Biosystems, Inc.
25 Hartwell Avenue
Lexington, MA
(978) 349-3200

With copies to:

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☒ Check the box if the filing relates solely to preliminary communications made before the commencement of a tender offer.

This Schedule 14D-9 filing relates solely to preliminary communications made before the commencement of a planned tender offer (the "Offer") by EMD Holdings NewCo II, Inc., a Delaware corporation ("Purchaser") and a wholly owned subsidiary of Merck KGaA, Darmstadt, Germany, a German corporation with general partners ("Parent"), to acquire all of the issued and outstanding shares of Class A common stock, par value $0.01 per share, and Class B common stock, par value $0.01 per share, of Rapid Micro Biosystems, Inc., a Delaware corporation (the "Company"), pursuant to the Agreement and Plan of Merger, dated as of November 16, 2026, by and among Parent, Purchaser and the Company (the "Merger Agreement"). Upon consummation of the Offer, Purchaser will merge with and into the Company (the "Merger") pursuant to Section 251(h) of the Delaware General Corporation Law, with the Company as the surviving corporation. This Schedule 14D-9 filing consists of the following document relating to the proposed Offer and Merger:

- Exhibit 99.1: Email from Robert Spignesi, President and Chief Executive Officer of the Company, to employees on November 16, 2026.

Additional Information about the Proposed Transaction and Where to Find It

The tender offer referred to in this filing has not yet commenced. This filing is for informational purposes only and is neither an offer to purchase nor a solicitation of an offer to sell shares, nor is it a substitute for the tender offer materials that Parent and its acquisition subsidiary will file with the SEC upon commencement of the tender offer. At the time the tender offer is commenced, Parent and Purchaser will cause to be filed a tender offer statement on Schedule TO with the SEC, and the Company will file a solicitation/recommendation statement on Schedule 14D-9 with respect to the tender offer. THE TENDER OFFER STATEMENT (INCLUDING AN OFFER TO PURCHASE, A RELATED LETTER OF TRANSMITTAL AND OTHER OFFER DOCUMENTS) AND THE SOLICITATION/RECOMMENDATION STATEMENT WILL CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ CAREFULLY AND CONSIDERED BY THE COMPANY'S STOCKHOLDERS BEFORE ANY DECISION IS MADE WITH RESPECT TO THE TENDER OFFER. Both the tender offer statement and the solicitation/recommendation statement will be mailed to the Company's stockholders free of charge. A free copy of the tender offer statement and the solicitation/recommendation statement will also be made available to all stockholders of the Company by accessing www.rapidmicrobio.com or by contacting the Company's Investor Relations contact at investors@rapidmicrobio.com. In addition, the tender offer statement and the solicitation/recommendation statement (and all other documents filed with the SEC) will be available at no charge on the SEC's website: www.sec.gov, upon filing with the SEC.

THE COMPANY'S STOCKHOLDERS ARE ADVISED TO READ THE SCHEDULE TO AND THE SCHEDULE 14D-9, AS EACH MAY BE AMENDED OR SUPPLEMENTED FROM TIME TO TIME, AND ANY OTHER RELEVANT DOCUMENTS FILED WITH THE SEC WHEN THEY BECOME AVAILABLE BEFORE THEY MAKE ANY DECISION WITH RESPECT TO THE TENDER OFFER, BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED TRANSACTION AND THE PARTIES THERETO.

Cautionary Statement Regarding Forward-Looking Statements

This filing contains forward-looking statements regarding, among other things, the proposed acquisition of the Company by Parent, the expected timetable for completing the transaction, the Company's future operating and financial performance, its business strategy and growth outlook, including with respect to its Growth Direct platform and systems, and its ability to develop and commercialize new and enhanced products and solutions. Words such as "anticipates," "continue," "could," "may," "forecasts," "expects," "intends," "plans," "potentially," "believes," "seeks," "estimates," "predict," "target," and variations of such words and similar expressions are intended to identify such forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements are not guarantees of future performance and are subject to certain risks, uncertainties, and assumptions that are difficult to predict; therefore, actual results may differ materially from those expressed or forecasted in any such statements. Such forward-looking statements are based on current expectations, estimates and projections about the Company's industry and business, management's beliefs, and certain assumptions made by the Company's management. Actual results could differ materially from those stated or implied in forward-looking statements due to a number of factors, including but not limited to: (i) risks associated with the timing of the closing of the proposed transaction, including the risks that a condition to closing would not be satisfied within the expected timeframe or at all or that the closing of the proposed transaction will not occur; (ii) uncertainties as to how many of the Company's stockholders will tender their shares in the offer; (iii) the possibility that a governmental entity may prohibit, delay or refuse to grant approval for the consummation of the transaction; (iv) the possibility that competing offers will be made; (v) the occurrence of any event, change or other circumstance that could give rise to the termination of the transaction; (vi) the outcome of any legal proceedings that may be instituted against the parties and others related to the merger agreement; (vii) unanticipated difficulties or expenditures relating to the proposed transaction, the response of business partners and competitors to the announcement of the proposed transaction, and/or potential difficulties in employee retention as a result of the announcement and pendency of the proposed transaction; (viii) the Company's ability to achieve positive cash flow and otherwise achieve its business objectives; (ix) the Company's ability to meet its publicly announced guidance and other expectations regarding its business and operations; (x) the Company's ability to fulfill customer orders on anticipated timelines or at all; (xi) the impact of the Company's existing and any future indebtedness on its ability to operate its business and its ability to access additional funding under its debt facility; (xii) the effectiveness of the Company's sales force and sales processes and its ability to maintain and expand its customer base; (xiii) the Company's ability to anticipate market needs and successfully develop and launch new and enhanced products and solutions; (xiv) the Company's ability to hire and retain qualified employees; (xv) risks related to the Company's manufacturing, supply chain, regulatory and intellectual property matters; (xvi) the impact of inflation, interest rates, tariffs, trade policy and other macroeconomic conditions on the Company's business and operations; and (xvii) those risks detailed in the Company's most recent Annual Report on Form 10-K and subsequent reports filed with the SEC, as well as other documents that may be filed by the Company from time to time with the SEC. The Company cannot assure you that the events and circumstances reflected in the forward-looking statements will be achieved or occur, and actual results could differ materially from those projected in the forward-looking statements. The forward-looking statements made in this filing relate only to events as of the date on which the statements are made. The Company undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events.

Exhibit 99.1

Team RMB,

I want to share an important company update with all of you. As announced in a public press release earlier today, Rapid Micro Biosystems, Inc. (“Rapid Micro”) has signed a definitive merger agreement under which Merck KGaA, Darmstadt, Germany will acquire all outstanding shares of the Company.

This marks an important milestone in the evolution of Rapid Micro and creates new opportunities to expand the impact of our technology, our customers, and our team. I'm incredibly proud of what the Rapid Micro team has accomplished and the transformative impact of the Growth Direct platform on pharmaceutical manufacturing. Over the past 18 months, we have built a strong partnership with Millipore S.A.S., a subsidiary of the Life Science business of Merck KGaA, Darmstadt, Germany centered on a shared commitment to innovation and helping customers modernize quality control workflows. Rapid Micro has established the Growth Direct platform as a leading solution for automating microbial quality control, with most of the world's top pharmaceutical manufacturers as customers. As part of the Life Science business of Merck KGaA, Darmstadt, Germany, we expect to significantly expand the reach of the Growth Direct platform and more fully serve our combined global customer base.

We believe this transaction reflects the strength of our technology, our world-class customer base, and most importantly the dedication, expertise, and quality of our employees.

While this announcement represents an exciting step forward, the transaction is not expected to close until December 2026, subject to customary closing conditions. Until then, Rapid Micro and Merck KGaA, Darmstadt, Germany remain separate companies, and our focus should remain on serving our customers and delivering against our commitments.

You should be proud of what we have built together. Through your dedication and hard work, we have established Growth Direct as a leading global platform for automating microbial quality control and earned the trust of many of the world’s leading pharmaceutical manufacturers. As part of Merck KGaA, Darmstadt, Germany’s Life Science business, we will have the resources and global reach to expand that impact even further.

You will receive a meeting invitation for a special Town Hall meeting today at 11:00 a.m. ET in Lowell where we will discuss these announcements in further detail and answer your questions. For all local employees, please plan to join us in person.

Thank you all for your unwavering dedication and commitment to our company and our customers.

Best,

Rob

Additional Information and Where to Find It

The tender offer described in this communication has not yet commenced, and this communication is neither an offer to purchase nor a solicitation of an offer to sell securities. At the time the tender offer is commenced, Merck KGaA, Darmstadt, Germany and EMD Holdings NewCo II, Inc. ("Purchaser") will file a tender offer statement on Schedule TO with the U.S. Securities and Exchange Commission (the "SEC"), and Rapid Micro Biosystems ("Rapid") will file a solicitation/recommendation statement on Schedule 14D-9 with the SEC. INVESTORS AND SECURITY HOLDERS ARE STRONGLY ADVISED TO READ THE TENDER OFFER STATEMENT (INCLUDING AN OFFER TO PURCHASE, LETTER OF TRANSMITTAL AND RELATED TENDER OFFER DOCUMENTS) THAT WILL BE FILED BY MERCK KGAA, DARMSTADT, GERMANY AND PURCHASER WITH THE SEC AND THE RELATED SOLICITATION/RECOMMENDATION STATEMENT ON SCHEDULE 14D-9 THAT WILL BE FILED BY RAPID WITH THE SEC, WHEN THEY BECOME AVAILABLE, BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION. These materials (once they become available) will be made available to Rapid shareholders at no cost by the information agent for the tender offer. Once filed, these documents will be available at no charge on the SEC's website at www.sec.gov. In addition, a copy of the offer to purchase, letter of transmittal and certain other related tender offer documents (once they become available) may be obtained free of charge from Merck KGaA, Darmstadt, Germany under the "Investors" section of Merck KGaA Darmstadt, Germany's website at https://www.emdgroup.com/en. A copy of the solicitation/recommendation statement (once it becomes available) also may be obtained free of charge from Rapid under the "Investor Relations" section of Rapid's website at https://www.rapidmicrobio.com/.

Forward-Looking Statements

This communication includes "forward-looking statements" regarding the potential acquisition of Rapid. All statements, other than statements of historical fact, may be forward-looking statements. These forward-looking statements may be accompanied by such words as "outlook," "aim," "anticipate," "assume," "believe," "contemplate," "continue," "could," "due," "estimate," "expect," "goal," "intend," "may," "objective," "plan," "predict," "potential," "positioned," "seek," "should," "target," "will," "would" and other words and terms of similar meaning. Readers are cautioned that any such forward-looking statements are not guarantees of future performance and involve risks and uncertainties and are cautioned not to place undue reliance on these forward-looking statements. Actual results may differ materially from those currently anticipated due to a number of risks and uncertainties.

Risks and uncertainties include, but are not limited to: the risk that the closing conditions for the proposed acquisition will not be satisfied; uncertainty as to the percentage of Rapid stockholders that will support the proposed acquisition and tender their shares in the offer; the risk of stockholder litigation relating to the proposed acquisition, including resulting expense or delay; the possibility that the proposed acquisition will not be completed in the expected timeframe or at all; potential adverse effects to the businesses of Merck KGaA, Darmstadt, Germany or Rapid during the pendency of the proposed acquisition, such as employee departures or distraction of management from business operations; the potential that the expected benefits and opportunities of the proposed acquisition, if completed, may not be realized or may take longer to realize than expected; the occurrence of any event, change or other circumstance that could give rise to the termination of the merger agreement" and "potential adverse reactions or changes to business relationships resulting from the proposed acquisition, including the effect of the acquisition on the ability to maintain key vendor, supplier or partner relationships; and risks related to the integration of Rapid into Merck KGaA, Darmstadt, Germany subsequent to the closing of the proposed acquisition and the timing of such integration.

A further list and descriptions of these risks, uncertainties and other factors can be found in Rapid Micro Biosystems' Annual Report on Form 10-K for the fiscal year ended December 31, 2025, including in the sections captioned "Forward-Looking Statements" and "Item 1A. Risk Factors," and in Rapid's subsequent Quarterly Reports on Form 10-Q, and other filings with the SEC. Copies of these filings are available online at www.sec.gov or https://investors.rapidmicrobio.com/. Rapid Micro Biosystems is not under any obligation, and expressly disclaim any obligation, to update or otherwise revise any forward-looking statements, whether as a result of new information, future events, or otherwise.