

PROSPECTUS SUPPLEMENT
(To Prospectus and Prospectus Supplement dated September 12, 2024)



Relmada Therapeutics, Inc.

Up to \$7,976,000
Common Stock

This prospectus supplement (this “Sticker Supplement”) amends and supplements certain information in our prospectus dated September 12, 2024 (the “Base Prospectus”), as supplemented by our prospectus supplement dated September 12, 2024 (the “Prospectus Supplement” and together with the Base Prospectus, the “ATM Prospectus”), both filed with the Securities and Exchange Commission as part of our registration statement on Form S-3 (333-281877), relating to the offer and sale of shares of our common stock, par value \$0.001 per share, from time to time pursuant to the terms of the Open Market Sale AgreementSM, dated April 7, 2022 (the “Sale Agreement”), with Jefferies LLC as sales agent. This Sticker Supplement should be read in conjunction with the ATM Prospectus, and is qualified by reference thereto, except to the extent that the information herein amends or supersedes the information contained in the ATM Prospectus. This Sticker Supplement is not complete without, and may only be delivered or utilized in connection with, the ATM Prospectus, and any future amendments or supplements thereto.

Our common stock is listed on The Nasdaq Global Select Market under the symbol “RLMD.” On April 25, 2025, the last reported sale price of our common stock on Nasdaq was \$0.645 per share.

On March 27, 2025, the date we filed our Annual Report on Form 10-K for the year ended December 31, 2024, we became subject to the offering limit set forth in General Instruction I.B.6 of Registration Statement on Form S-3. We are filing this Sticker Supplement to amend the ATM Prospectus to update the amount of our common stock we are eligible to sell in any 12-calendar-month period under General Instruction I.B.6 of Form S-3.

As of the date of this Sticker Supplement, the aggregate market value of our common stock held by non-affiliates calculated pursuant to General Instruction I.B.6 of Form S-3 (our “public float”) is \$23,928,915, based on 32,467,998 shares of our outstanding common stock held by non-affiliates as of April 25, 2025, and a price of \$0.737 per share, the closing price of our common stock on April 24, 2025, which is the highest closing sale price of our common stock on the Nasdaq Global Select Market within 60 days prior to the date of this Sticker Supplement.

Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities in public primary offerings on Form S-3 with a value exceeding one-third of our public float (as calculated pursuant to General Instruction I.B.6) in any 12-calendar-month period so long as our public float remains below \$75.0 million. During the 12 calendar months prior to and including the date of this Sticker Supplement, we have not offered and sold any common stock pursuant to General Instruction I.B.6 of Form S-3. As a result, we may currently only offer and sell shares of our common stock having an aggregate offering price to the public of up to \$7,976,000 pursuant to this Sticker Supplement and the ATM Prospectus from time to time.

If our public float increases such that we may sell additional amounts of common stock in excess of the aforementioned aggregate offering price under the Sales Agreement and the registration statement and ATM Prospectus which this Sticker Supplement amends, we will file another prospectus supplement prior to making such additional sales in excess of the aforementioned aggregate offering price. In the event that our public float increases above \$75.0 million, we will no longer be subject to the limit in General Instruction I.B.6 of Form S-3, and in such event we will file another prospectus supplement prior to making additional sales above such limit.

Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page S-3 of the Prospectus Supplement, Page 2 of the Base Prospectus, and the risks discussed under similar headings in documents incorporated by reference into the ATM Prospectus, as they may be amended, updated or modified periodically in our reports filed with the Securities and Exchange Commission.

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

Jefferies

The date of this prospectus supplement is April 28, 2025.
