UNITED STATES

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 6-K

Report of Foreign Private Issuer
Pursuant to Rule 13a-16 or 15d-16
under the Securities Exchange Act of 1934

For the month of: August 2014 (Report No. 3)

ALCOBRA LTD.
(Translation of registrant's name into English)

Amot Investment Building
2 Weizman St. 9th Floor
Tel Aviv 6423902 Israel
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F x Form 40-F ☐

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulations S-T Rule 101(b)(1):_____

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulations S-T Rule 101(b)(7):_____

Indicate by check mark, whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes ☐ No ☒

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): ____

Attached hereto and incorporated by reference herein is the registrant's press release issued on August 19, 2014.

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, thereunto duly authorized.

Alcobra Ltd.
(Registrant)

By /s/ Dr. Yaron Daniely
Name: Dr. Yaron Daniely

Chief Executive Officer and President

Date: August 19, 2014

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Alcobra Announces Enrollment of First Patient in Phase IIb Clinical Trial of MDX in Fragile X Syndrome

Tel Aviv, Israel – August 19, 2014 – Alcobra Ltd. (NasdaqGM: ADHD), an emerging pharmaceutical company primarily focused on the development and commercialization of its proprietary drug candidate Metadoxine Extended Release (MDX), to treat cognitive dysfunctions, such as ADHD and Fragile X Syndrome, announced today that the first patient has been enrolled in a Phase IIb Fragile X study of MDX. The FDA granted "Orphan Drug" designation to Metadoxine in the treatment of Fragile X Syndrome in December 2013.

The Phase IIb Fragile X trial is a multi-center, randomized, placebo-controlled study and is being conducted in 11 clinical sites, primarily in the U.S. It is designed to investigate MDX for 6 weeks compared with placebo in 60 adolescent and adult subjects with Fragile X Syndrome.

“We are pleased to start enrolling patients into our Phase IIb clinical study for MDX in Fragile X Syndrome,” said Dr. Yaron Daniely, President and Chief Executive Officer of Alcobra. “Our interest in Fragile X Syndrome is based on a comprehensive data set demonstrating significant improvements in learning, social and cognitive functions in a pre-clinical model of the disease. In addition, data supporting MDX modulation of the GABA/glutamate circuit and its rapid and significant effect on attentional capabilities in the ADHD population suggest a potential benefit in the Fragile X population. Our goal is to complete patient enrollment and report top-line data in the 4th quarter of 2014.”

“We expect that this study will give us important insights into the efficacy and safety of MDX in Fragile X Syndrome,” said Elizabeth Berry Kravis, MD, PhD, Associate Professor of Biochemistry, Neurological Sciences, and Pediatrics at Rush University Medical Center, and the Principal Investigator of the Phase IIb study. “Fragile X Syndrome is a genetic condition that causes intellectual disability, and is the leading known genetic cause of autism. There are no approved treatments for Fragile X Syndrome, so the development of MDX in this indication has the potential to address a significant unmet need.”

About Fragile X Syndrome
Fragile X Syndrome (FXS) is a genetic condition that causes intellectual disability, behavioral and learning challenges and various physical characteristics. Behavioral characteristics can include ADHD, autism and autistic behaviors, social anxiety, stereotypic movements, poor eye contact, sensory disorders and increased risk for aggression. Fragile X Syndrome is the leading known genetic cause of autism, accounting for about 2-6% of cases. Fragile X Syndrome represents an unmet medical need and a rare disease, as defined by the Orphan Drug Act. According to the National Institutes of Health (NIH), approximately one in 4,000 males and one in 8,000 females have Fragile X Syndrome. The FDA has not approved any drugs specifically for the treatment of Fragile X Syndrome or its symptoms.

About Alcobra Ltd.

Alcobra Ltd. is an emerging pharmaceutical company primarily focused on the development and commercialization of a proprietary drug candidate, MDX (Metadoxine Extended Release (MG01CI)), to treat cognitive disorders including Attention Deficit Hyperactivity Disorder (ADHD) and Fragile X Syndrome. MDX has completed multiple Phase II studies in adults with ADHD and has completed enrollment in a Phase III study in adults with ADHD. The company is conducting separate Phase IIb trials in pediatric ADHD and Fragile X Syndrome. The company was founded in 2008 and is headquartered in Tel Aviv, Israel. For more information please visit the Company's website, www.alcobra-pharma.com, the content of which is not incorporated herein by reference.

Forward Looking Statements – This press release may contain forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995 and other Federal securities laws. Because such statements deal with future events and are based on Alcobra's current expectations, they are subject to various risks and uncertainties and actual results, performance or achievements of Alcobra could differ materially from those described in or implied by the statements in this press release. For example, forward-looking statements include statements regarding expected timing of completion of enrollment and completion of the Phase IIb clinical trial reported above and reporting topline results, if the trial is completed at all, the design of the Phase IIb clinical trial in question and importance of the results from such trial, if reported, to the medical community. In addition, historic results of scientific research and clinical and preclinical trials do not guarantee that the conclusions of future research or trials would not suggest different conclusions or that historic results referred to in this press release would be interpreted differently in light of additional research and clinical and preclinical trials results. The forward-looking statements contained or implied in this press release are subject to other risks and uncertainties, including those discussed under the heading "Risk Factors" in Alcobra Ltd.'s Annual Report on Form 20-F filed with the Securities and Exchange Commission ("SEC") on March 28, 2014, and in subsequent filings with the SEC. Except as otherwise required by law, Alcobra disclaims any intention or obligation to update or revise any forward-looking statements, which speak only as of the date hereof, whether as a result of new information, future events or circumstances or otherwise.

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