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: December 2013

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 December 16, 2013.

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: December 16, 2013

Alcobra Ltd. Announces Highly Statistically Significant Positive Phase IIb Clinical Trial Results in Adults with Predominantly Inattentive Attention Deficit Hyperactivity Disorder

- Primary endpoint analysis of improvement over placebo highly statistically significant at p<0.01
- MG01CI, a non-stimulant, is superior to placebo starting at first dosing
- Trial shows no significant differences in adverse event profiles between treatment and placebo groups

TEL AVIV, ISRAEL – December 16, 2013 – Alcobra Ltd. (NASDAQ CM: ADHD) (the "Company"), an emerging biopharmaceutical company primarily focused on the development and commercialization of its proprietary non-stimulant drug candidate, MG01CI (Metadoxine extended-release), to treat cognitive dysfunctions, such as ADHD and Fragile X Syndrome, announced today highly statistically significant positive results from a Phase IIb clinical trial with MG01CI in adults with Predominantly Inattentive Attention Deficit Hyperactivity Disorder (PI-ADHD).

This Phase IIb trial was a randomized, double-blind, placebo-controlled, cross-over single center study that enrolled 36 adult subjects with PI-ADHD at Geha Mental Health Center in Petach Tikva, Israel. Eligible subjects were randomly assigned in a 1:1:1 ratio to one of three treatment sequences that varied the order of investigational product administration. In each treatment sequence, subjects received a single administration, approximately one week apart and in different orders, of MG01CI 1,400 mg, MG01CI 700 mg and placebo. The primary outcome was the change from baseline of the Test of Variables of Attention (TOVA®) ADHD score. The TOVA is a computerized continuous performance test that provides information about an individual's sustained attention, speed and consistency of responding, and behavioral self-regulation.

In an intent-to-treat analysis of the primary endpoint, the study demonstrated a statistically significant change from baseline for MG01CI 1,400 mg compared with placebo on the TOVA ADHD score (mean change 2.0, SD 4.2, p = .009). The study also demonstrated a statistically significant change from baseline for MG01CI 1,400 mg compared with placebo on the TOVA sub-score of reaction time variability (mean change 7.9, SD 19.2, p=.022). In addition, the study found a statistically significant change from baseline for MG01CI 1,400 mg compared with the 700 mg dose on the TOVA ADHD score (mean change 1.8, SD 4.7, p=.032). There were no serious adverse events or any meaningful differences in adverse events profile between the drug and placebo groups.

Jonathan Rubin, the Chief Medical Officer of Alcobra Ltd, commented, "This study provides confirmation of the immediate effects of a single 1,400 mg dose of MG01CI in adults. The statistical significance and magnitude of effect in this study replicate and confirm the TOVA findings observed in our previous placebo-controlled Phase IIb trial with MG01CI in 120 adults with ADHD. There are now two placebo-controlled Phase II studies that demonstrate the significant efficacy and tolerability attributes of MG01CI in adults with ADHD."

The results from this study will be presented in detail at an investor event in New York, NY on Friday December 20th at 8.30 am EST. To listen to the webcast for this event please go to http://www.alcobra-pharma.com/

About PI-ADHD

The Predominantly Inattentive subtype of Attention Deficit Hyperactivity Disorder (PI-ADHD) is characterized by symptoms of inattentiveness. Individuals tend to be easily distracted and forgetful of details of daily routines and typically have problems organizing or finishing tasks, paying attention to details, and/or following instructions or conversations. The PI-ADHD subtype differs from the more commonly recognized combined subtype of ADHD in that symptoms of hyperactivity and impulsivity may be absent or minimal.

About Alcobra Ltd.

Alcobra Ltd. is an emerging biopharmaceutical company primarily focused on the development and commercialization of a proprietary drug candidate, MG01CI, to treat cognitive dysfunctions including Attention Deficit Hyperactivity Disorder (ADHD) and Fragile X Syndrome. MG01CI has completed Phase II studies to treat Attention Deficit Hyperactivity Disorder. 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. 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 registration statement on Form F-1/A filed with the Securities and Exchange Commission ("SEC") on October 22, 2013, 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.

U.S. Investor Contacts:
LifeSci Advisors, LLC
Michael Rice
646-597-6992
mrice@lifesciadvisors.com

Israel Investor Contact:
Investor Relations Ltd.
Mor Dagan
+972-3-5167620
mor@km-ir.co.il

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