Filed pursuant to Rule 424(b)(5)
Registration No. 333-197411

PROSPECTUS SUPPLEMENT
(To prospectus dated August 1, 2014)

6,175,000 Shares

Alcobra Ltd.

Ordinary Shares

We are offering our ordinary shares. The offering price is $6.50 per ordinary share. Our ordinary shares are listed on the NASDAQ Global Market under the symbol “ADHD.” On November 12, 2015, the last reported sales price of our ordinary shares on the NASDAQ Global Market was $7.12 per share.

We are an “emerging growth company” as defined under the federal securities laws and, as such, may elect to comply with certain reduced public company reporting requirements for future filings.

Investing in our ordinary shares involves a high degree of risk. Please read “Risk Factors” beginning on page S-6.

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.

	PER SHARE	TOTAL
Public Offering Price	$ 6.50	$ 40,137,500
Underwriting discounts and commissions[(1)]	$ 0.39	$ 2,408,250
Proceeds to us before expenses.	$ 6.11	$ 37,729,250

(1) The underwriters will also be reimbursed for certain expenses incurred in this offering. See “Underwriting” for details.

Delivery of the ordinary shares is expected to be made on or about November 18, 2015. We have granted the underwriters an option for a period of 30 days to purchase up to an additional 926,250 ordinary shares. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $2,769,488, and the total proceeds to us, before expenses, will be $43,388,638.

Joint Book-Running Managers

Jefferies **Barclays**

Co-Managers

Oppenheimer & Co. **Cantor Fitzgerald & Co.** **Roth Capital Partners**

Prospectus Supplement dated November 13, 2015

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ABOUT THIS PROSPECTUS SUPPLEMENT

A registration statement on Form F-3 (File No. 333-197411) utilizing a shelf registration process relating to the securities described in this prospectus supplement was initially filed with the Securities and Exchange Commission, or the SEC, on July 14, 2014, and was declared effective on August 1, 2014. Under this shelf registration process, of which this offering is a part, we may, from time to time, sell up to an aggregate of $100 million of our securities. In January 2015, we sold ordinary shares for a total aggregate amount of $29,900,000 under this shelf registration process.

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering of our ordinary shares, and also adds, updates and changes information contained in the accompanying prospectus and the documents incorporated herein and therein by reference. The second part is the accompanying prospectus, which gives more general information, some of which may not apply to this offering. To the extent the information contained in this prospectus supplement differs or varies from the information contained in the accompanying prospectus or any document filed prior to the date of this prospectus supplement and incorporated herein by reference, the information in this prospectus supplement will control. In addition, this prospectus supplement and the accompanying prospectus do not contain all of the information provided in the registration statement that we filed with the SEC. For further information about us, you should refer to that registration statement, which you can obtain from the SEC as described elsewhere in this prospectus under “Where You Can Find More Information and Incorporation of Certain Information by Reference.” You may obtain a copy of this prospectus supplement, the accompanying prospectus and any of the documents incorporated by reference without charge by requesting it from us in writing or by telephone at the following address or telephone number: Alcobra Ltd., Azrieli Triangle Building, 132 Derech Menachem Begin 39th Floor, Tel Aviv 6701101 Israel, Telephone: +972 72 220 4661.

You should rely only on the information contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus. We have not, and the underwriters have not, authorized anyone to provide you with information that is different. This prospectus supplement is not an offer to sell or solicitation of an offer to buy these securities in any circumstances under which the offer or solicitation is unlawful. We are offering to sell, and seeking offers to buy, our securities only in jurisdictions where offers and sales are permitted. You should not assume that the information we have included in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the date of this prospectus supplement or the accompanying prospectus, respectively, or that any information we have incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus supplement or of any of our securities. Our business, financial condition, results of operations and prospects may have changed since those dates.

Unless the context otherwise requires, all references in this prospectus supplement to “we,” “our,” “our company,” “Alcobra,” “us” and the “company” refer to Alcobra Ltd. and its wholly owned subsidiary, Alcobra, Inc.

All references in this prospectus supplement to “ordinary shares” refer to Alcobra’s ordinary shares, par value NIS 0.01 per share. We sometimes refer to our ordinary shares to be offered under this prospectus supplement as the “securities.”

All references to “NIS” are to New Israel Shekels, the lawful currency of Israel.

All references to “dollars” or “$” are to the lawful currency of the United States.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere or incorporated by reference into this prospectus supplement and the accompanying prospectus. This summary does not contain all of the information that you should consider before investing in our securities. You should carefully read the entire prospectus supplement and the accompanying prospectus, including the "Risk Factors" sections, starting on page S-6 of this prospectus supplement and page 1 of the accompanying prospectus and under Item 3.D. — "Risk Factors" in our most recent Annual Report on Form 20-F, as well as the financial statements and the other information incorporated by reference herein, before making an investment decision.

Overview

We are an emerging biopharmaceutical company primarily focused on the development and commercialization of our proprietary oral drug candidate, MDX, to treat Attention Deficit Hyperactivity Disorder, or ADHD, and other cognitive dysfunctions including Fragile X Syndrome, or Fragile X. The most common currently available treatments for ADHD are stimulants that increase the brain chemicals dopamine and norepinephrine. Stimulants have significant side effects, and are classified as controlled substances which have significant potential for misuse, abuse and addiction. MDX is not a stimulant, and works with a different mechanism of action. MDX is a proprietary, combined rapid onset/extended release formulation of the chemical pyridoxine pyroglutamate, which is more broadly known as metadoxine. Metadoxine is designed to be a monoamine-independent modulator of gamma-aminobutyric acid transmission. Metadoxine has been available since the 1980s only in immediate release forms for the acute treatment of alcohol intoxication and the chronic treatment of alcoholic liver disease in Italy, Portugal, Hungary, Russia, India, China, Mexico and Thailand.

MDX for the Treatment of ADHD

ADHD is one of the most common behavioral disorders in the world. It is estimated that between 8% and 10% of children worldwide are affected by this condition. Once believed to only affect children, ADHD is now known to persist into adolescence and adulthood in a large number of cases, with approximately 50% of all children with ADHD continuing to have symptoms of the disorder as adults. Over 90% of adults with ADHD experience impaired attention and executive function symptoms, of which approximately 35% also experience hyperactivity-impulsivity symptoms.

ADHD is a treatable condition. The most commonly used therapeutic drugs are stimulants (Schedule II, Controlled Substances), such as Ritalin, Adderall, Vyvanse and Concerta, which are all dopaminergic (related to dopamine) and noradrenergic (related to norepinephrine) compounds with significant abuse and misuse potential, as their use may lead to severe psychological or physical dependence. In addition, stimulants have numerous side effects, such as uncomfortable mental states, interference with sleep and appetite, development of nervous tics and potential cardiovascular effects resulting from increased blood pressure and heart rate. There are limited effective treatments for these side effects for patients taking the drugs. The prevalence of such side effects has also led to dramatically limited medication adherence rates. Up to 30% to 50% of those who are prescribed stimulants for ADHD either do not respond or cannot tolerate these treatments, and only about 20% of those who are prescribed stimulants are still taking them 12 months later. There also is a non-stimulant drug approved for children and adults with ADHD called Strattera (atomoxetine), approved in 2002. This drug also has significant potential side effects, such as fatigue, gastrointestinal upset, sexual problems, palpitations, increased heart rate and high blood pressure and also has regulatory warning labels relating to suicidal thoughts and liver damage. Moreover, Strattera takes six to eight weeks to achieve full clinical effectiveness. More recently, two additional non-stimulant medications were approved for use only in children and adolescents with ADHD, Intuniv (guanfacine) and Kapvay (clonidine). These two drugs have not been approved for use in adults with ADHD and have not had significant commercial success. All approved ADHD drugs need to be carefully monitored by the treating physician to optimize the dose, starting with a low dose and slowly escalating to the most effective and tolerable dose.

In contrast to the most common available treatments, which involve the use of stimulants, MDX is not a stimulant and employs a different mechanism of action that is neither dopaminergic (related to dopamine) nor noradrenergic (related to norepinephrine). Our clinical trials to date have suggested a pro-cognitive effect and favorable tolerability and safety. We therefore believe MDX potentially represents an effective treatment and a safer alternative to currently marketed treatments.

In September 2011, we completed a 120 subject double-blind placebo-controlled Phase 2 study in adult ADHD subjects in two academic sites in Israel. The study showed statistically significant improvement in clinical ADHD symptoms, and also showed favorable tolerability with no significant side effects over a placebo. The trial met all primary and secondary clinical endpoints showing statistically significant improvement over the placebo-treated control group.

In December 2013, we completed an additional 36 subject double-blind placebo-controlled Phase 2 study in adult ADHD, which confirmed our previous findings, highlighted the rapid onset of MDX, and demonstrated efficacy over placebo from the first day of dosing using a computerized assessment tool.

In October 2014, we announced the results of a 300 subject double-blind placebo-controlled Phase 3 study in adult ADHD in 20 sites (18 in the United States and 2 in Israel). The study's primary efficacy endpoint did not reach statistical significance. A non-significant favorable trend was observed on the primary endpoint. Other secondary measures showed strong or statistically significant trends. Similar to previous studies, MDX showed a favorable safety profile.

In March 2015, we reported that our Phase 2 safety and tolerability study of a single administration of MDX in adolescent patients with ADHD achieved its primary endpoint. In the study, MDX showed good tolerability and no safety concerns were identified.

In the first quarter of 2015, we met with the U.S. Food and Drug Administration (FDA) to discuss the results of our first Phase 3 study in adults with ADHD, the proposed protocol for our second Phase 3 study in adults, the requirements for clinical development of MDX for pediatric ADHD, as well as the requirements for a new drug application (NDA) submission. The FDA confirmed that a single additional study showing efficacy in adult ADHD may provide a sufficient basis of efficacy for approval of MDX in this sub-population. The FDA also confirmed that a single Phase 2 study, followed by a single Phase 3 study, in a pediatric ADHD population can provide a sufficient basis of efficacy for approval of MDX in this population. We expect to launch the first of two adequate, well-controlled, short-term efficacy studies in children with ADHD in 2016 after receiving comments from the FDA on our Pediatric Study Plan for the indication of ADHD. The study will be a multi-center, Phase 2, placebo-controlled, short-term efficacy study.

In the second quarter of 2015, we launched the MEASURE study (MDX Evaluation in Adults — StUdy of Response and Efficacy). The MEASURE study is our second Phase 3 study of MDX in adults with ADHD. The study includes design and operational elements to potentially mitigate placebo response and reduce response variability, and we expect to report data in the middle of 2016.

If the data from these and future clinical trials demonstrate the safety and efficacy of MDX, we will seek to obtain marketing approval from the FDA for MDX for use in ADHD. We have similar plans to seek marketing approval in other territories.

MDX for the Treatment of Fragile X

We are also studying MDX for the treatment of Fragile X, a rare neurogenetic disorder related to autism marked by severe intellectual disability. In June 2015, we reported that our Phase 2 exploratory clinical study of MDX in adolescent and adult patients with Fragile X did not achieve statistical significance on the primary endpoint, yet demonstrated statistically significant improvements in certain clinically meaningful behavioral and cognitive endpoints, including the Vineland II Daily Living Skills Assessment. The FDA has granted Fast Track designation and Orphan Drug status to MDX for the treatment of Fragile X.

In October 2015, we met with the FDA to discuss the results of our Phase 2 study in Fragile X and the requirements for NDA submission of MDX in this therapeutic indication. The FDA concurred that results from a

single short-term, adequate and well-controlled efficacy study in adolescents and adult patients with Fragile X may be sufficient to support a claim of efficacy for approval of MDX in this indication (in line with the FDA's Guidance for Industry — Providing Evidence of Effectiveness for Human Drug and Biological Products, May 1998). We plan to submit a separate application for pediatric patients (ages 4-11) following FDA approval via a supplemental NDA. The FDA confirmed that the Vineland II Daily Living Skills Assessment could serve as the primary endpoint in the adolescents and adults Fragile X pivotal study. The study is scheduled to begin in 2016.

To date, we have not generated revenue from the sale of any product, and we do not expect to generate significant revenue unless and until we obtain marketing approval of, and commercialize, MDX. As of September 30, 2015, we had an accumulated deficit of $66 million, as described below under “Capitalization and Indebtedness.”

Our Strategic Plan

Our objective is to develop and commercialize proprietary pharmaceutical products for treatment of central nervous system disorders, and cognitive dysfunctions in particular. To this effect, we intend to seek approval to conduct additional clinical trials for our most advanced product (MDX) and, if those trials are successful, seek marketing approvals from the FDA and other worldwide regulatory bodies for MDX for the treatment of ADHD in adults and children. We also plan to advance clinical studies and commercialization plans for MDX in Fragile X. To achieve these objectives, we plan to:

- seek the necessary regulatory approvals to complete the clinical development of MDX for the treatment of ADHD in adults and children, and, if successful, file for marketing approval in the United States;
- seek the necessary regulatory approvals to complete the clinical development of MDX for the treatment of Fragile X in adults and children, and, if successful, file for marketing approval in the United States; and
- prepare to commercialize MDX for the treatment of patients with ADHD and Fragile X by establishing independent distribution capabilities or in conjunction with other pharmaceutical companies in the United States and other key markets.

Corporate Information

We were incorporated under the laws of the State of Israel in 2008. Our principal executive offices are located at Azrieli Triangle Building, 132 Derech Menachem Begin 39th Floor, Tel Aviv 6701101 Israel, and our telephone number is +972 72 220 4661. In 2013, we established a wholly-owned subsidiary in the United States, Alcobra Inc., a Delaware corporation. Alcobra, Inc. is located at 600 West Germantown Pike, Suite 400, Plymouth Meeting, PA, 19462, and its telephone number is (610) 940-1631. Our website address is *www.alcobra-pharma.com*. The information contained on our website is not incorporated by reference and should not be considered as part of this prospectus supplement.

THE OFFERING

Ordinary shares offered	6,175,000 shares
Ordinary shares to be outstanding after this offering	27,356,722 shares
Underwriters' Option	We have granted the underwriters an option for a period of 30 days after the date of the underwriting agreement to purchase up to 926,250 additional ordinary shares.
Use of proceeds	To fund our future clinical development program and for general corporate purposes
Risk factors	See "Risk Factors" beginning on page S-6 of this prospectus supplement and page 1 of the accompanying prospectus and in the documents incorporated by reference herein (including under Item 3.D. — "Risk Factors" in our most recent Annual Report on Form 20-F) for a discussion of the risks you should carefully consider before deciding to invest in our ordinary shares.
NASDAQ Global Market symbol	ADHD

Unless otherwise stated, all information in this prospectus supplement is based on 21,181,722 ordinary shares outstanding as of September 30, 2015, and assumes no exercise of the underwriters' option to purchase additional shares and does not include the following as of that date:

- 1,836,979 ordinary shares issuable upon the exercise of share options outstanding under our 2010 Incentive Option Plan, at a weighted average exercise price of $5.80 per share; and
- 104,167 ordinary shares issuable upon the exercise of outstanding warrants, at a weighted average exercise price of $18.00 per share.

SUMMARY CONSOLIDATED FINANCIAL DATA

We derived the summary consolidated financial statement data for the years ended December 31, 2014, 2013 and 2012, set forth below from our audited consolidated financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus. We derived the summary consolidated financial data as of September 30, 2015, and for the nine months ended September 30, 2015, and 2014, from our unaudited condensed consolidated financial information incorporated by reference in this prospectus supplement and the accompanying prospectus. The unaudited condensed financial data as of and for the nine months ended September 30, 2015, in the opinion of management, contains all adjustments (consisting of only normal recurring adjustments) necessary to present fairly our financial position and results of operations for the period. Our unaudited quarterly results as of and for the nine months ended September 30, 2015 have not been reviewed by our independent auditors. Accordingly, we cannot assure you that upon completion of the review of our independent auditors and of the audit by our independent auditors of our results for the year ending December 31, 2015, we will not report different financial results than those set forth below. Further, our results for interim periods are not necessarily indicative of the results that may be expected for the entire year. You should read the information presented below together with our consolidated financial statements, the notes to those statements and the other financial information incorporated by reference in this prospectus supplement and the accompanying prospectus.

(in thousands of U.S. dollars, except share amounts)

	Nine Months Ended September 30,		Year Ended December 31,		
	2015	2014	2014	2013	2012
	(unaudited)	(unaudited)			
Statements of Operations Data:					
Research and development expenses	$ 10,126	$ 20,197	$ 25,105	$ 7,066	$ 818
Pre commercialization expenses	931	1,651	2,134	—	—
General and administrative expenses	3,667	4,403	5,839	3,224	683
Financial (income) expense, net	(196)	(194)	(227)	197	78
Taxes on income (benefits)	34	(25)	(17)	61	—
Loss attributable to holders of ordinary shares	$ 14,562	$ 26,032	$ 32,834	$ 10,548	$ 1,579
Weighted average number of ordinary shares used in computing basic and diluted net loss per share	20,796,235	13,665,459	13,674,818	10,177,786	7,791,932

RISK FACTORS

Investing in our securities involves significant risks. Before making an investment decision, you should carefully consider the risks described below, in the accompanying prospectus and under Item 3.D. — "Risk Factors" in our most recent Annual Report on Form 20-F, or in any updates in our Reports on Form 6-K, together with all of the other information appearing in this prospectus supplement or the accompanying prospectus or incorporated by reference herein or therein, including in light of your particular investment objectives and financial circumstances. The risks so described are not the only risks facing us. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations. Our business, financial condition and results of operations could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. The discussion of risks includes or refers to forward-looking statements; you should read the explanation of the qualifications and limitations on such forward-looking statements discussed elsewhere in this prospectus supplement under the caption "Warning Regarding Forward-Looking Statements" below.

We may be subject to any number of legal proceedings.

On December 16, 2014, a class action lawsuit was filed against us and certain of our current and former officers and directors in the United States District Court for the Southern District of New York. The complaint, brought by a putative class of investors, alleges, among other things, that our officers and directors made false or misleading statements relating to the results of our Phase 3 study for our MDX drug candidate. On May 20, 2015, we moved to dismiss the complaint. The motion to dismiss has been fully briefed, and oral argument occurred on September 22, 2015, and the court's decision remains pending. Such legal proceedings, regardless of their outcome, could be costly, divert management attention, or damage our reputation and demand for our products. Litigation, particularly in the United States, is inherently unpredictable and unexpectedly high awards of damages can result if we receive an adverse verdict. In many cases, particularly in the United States, the practice of the plaintiffs' bar is to claim damages (compensatory, punitive and statutory) in extremely high amounts. Accordingly, it is difficult to quantify the potential exposure to claims in many proceedings of the type mentioned above. Unfavorable resolution of current and similar future proceedings could have a material adverse effect on our financial condition and results of operations. We may become subject to monetary and/or non-monetary sanctions and/or may be required to make significant provisions in our accounts related to legal proceedings, which could have a material adverse effect on our financial condition and results of operations.

We have filed multiple patent applications and have three issued patents by the U.S. Patent and Trademark Office, or the USPTO, and three issued patents in other jurisdictions. There can be no assurance that any of our other patent applications will result in issued patents. As a result, we may have limited protection of our proprietary technology in the marketplace.

We have filed patent applications in many countries worldwide. These applications cover a range of areas including: different formulations of metadoxine, the use of metadoxine for all cognitive impairments, combination therapy including metadoxine, new molecular derivatives of metadoxine and the manufacturing and production of metadoxine API. The USPTO has issued three patents to us, covering the composition of the sustained release form of MDX, the use of metadoxine for ADHD, and new molecular derivatives of metadoxine. We also have three issued patents in Australia and New Zealand. Unless and until other pending applications issue, their additional protective scope is impossible to determine. It is impossible to predict whether or how many of these additional applications will result in issued patents. Even if pending applications issue, they may issue with claims significantly narrower than those we currently seek. The patent position of biotechnology and pharmaceutical companies is generally uncertain because it involves complex legal and factual considerations. The standards applied by the USPTO and foreign patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in biotechnology and pharmaceutical patents. Consequently, patents may not issue from our pending patent applications. As such, we do not know the degree of future protection that we will have on our proprietary products and technology.

If we were to be characterized as a "passive foreign investment company" for U.S. tax purposes, U.S. holders of our ordinary shares could have adverse U.S. income tax consequences.

If we were to be characterized as a passive foreign investment company, or PFIC, under the U.S. Internal Revenue Code of 1986, as amended, or the Code, in any taxable year during which a U.S. taxpayer owns ordinary shares, such U.S. holder could be liable for additional taxes and interest charges upon certain distributions by us and any gain recognized on a sale, exchange or other disposition, including a pledge, of the ordinary shares, whether or not we continue to be a PFIC. Based on the nature of our business, the projected composition of our income and the projected composition and estimated fair market values of our assets, we cannot rule out a PFIC designation. In particular, in light of the complexity of PFIC rules, we cannot assure you that we have not been a PFIC in prior years or are not a PFIC or will avoid becoming a PFIC in the future. Were we to be classified as a PFIC, a U.S. investor may be able to mitigate some of the adverse U.S. federal income tax consequences with respect to owning the ordinary shares for our taxable year ending December 31, 2015, provided that such U.S. investor is eligible to make, and successfully makes, a "mark-to-market" election. U.S. investors could also mitigate some of the adverse U.S. federal income tax consequences of us being classified as a PFIC by making a "qualified electing fund" election, provided that we provide the information necessary for a U.S. investor to make such an election. We intend to make available to U.S. investors upon request the information necessary for U.S. holders to make qualified electing fund elections. U.S. Holders are strongly urged to consult their tax advisors about the PFIC rules, including tax return filing requirements and the eligibility, manner, and consequences to them of making a QEF or mark-to-market election with respect to our Ordinary Shares in the event we that qualify as a PFIC. For more information see "U.S. Federal Income Tax Consequences" in our Annual Report on Form 20-F incorporated by reference herein.

Since we have broad discretion in how we use the proceeds from this offering, we may use the proceeds in ways with which you disagree.

We intend to use the net proceeds of this offering to fund the company's future clinical development program and for general corporate purposes. Accordingly, our management will have significant flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used in ways with which you would agree. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for the company. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

Investors will incur an immediate dilution from the public offering price.

Because the price per share of our ordinary shares being offered is substantially higher than the book value per share of our ordinary shares, you will suffer substantial dilution in the net tangible book value of the ordinary shares you purchase in this offering. Based on the initial public offering price of $6.50 per share, if you purchase ordinary shares in this offering, you will suffer immediate and substantial dilution of $3.85 per ordinary share in the net tangible book value of the ordinary shares, as of September 30, 2015. See "Dilution" for a more detailed discussion of the dilution you will incur in this offering.

A substantial percentage of our authorized shares may be sold in this offering, which could cause the price of our ordinary shares to decline.

Pursuant to this offering, we will sell 6,175,000 ordinary shares, or approximately 29.2%, of our outstanding ordinary shares as of September 30, 2015. This sale and any future sales of a substantial number of ordinary shares in the public market, or the perception that such sales may occur, could adversely affect the price of our ordinary shares. We have issued a substantial number of ordinary shares upon exercise of warrants and options to purchase our ordinary shares, which are eligible for, or may become eligible for, unrestricted resale. Any sales or registration of such shares in the public market or otherwise could reduce the prevailing market price for our ordinary shares, as well as make future sales of equity securities by us less attractive or even not feasible. The sale of shares issued upon the exercise of options and warrants granted pursuant to our employee stock purchase plan could also further dilute the holdings of our then existing shareholders.

We may need additional funds in the future. We may be unable to obtain additional funds or if we obtain financing it may not be on terms favorable to us. You may lose your entire investment.

Based on our current plans, we believe our existing cash and cash equivalents along with cash generated from this offering will be sufficient to fund our operating expenses and capital requirements through 2017, although there is no assurance of this result, and we may need funds in the future. If our capital resources are insufficient to meet future capital requirements, we will have to raise additional funds. If we are unable to obtain additional funds on terms favorable to us, we may be required to cease or reduce our operating activities.

Our share price may be volatile.

The market price of our ordinary shares has been subject to fluctuation in the past. Consequently, the current market price of our ordinary shares may not be indicative of future market prices, and we may be unable to sustain or increase the value of an investment in our ordinary shares.

WARNING REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement contains, “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995 and other U.S. Federal securities laws. Also, documents that we incorporate by reference into this prospectus supplement, including documents that we subsequently file with the SEC, will contain forward-looking statements. These forward-looking statements include, but are not limited to, those statements regarding anticipated expenses, capital requirements and our needs for additional financing; timing, design, the initiation and successful completion of the clinical trials and studies we are or anticipate conducting, if at all; FDA approval of, or other regulatory action in the United States and elsewhere, with respect to MDX; the commercial launch and future sales of MDX or any other future products or product candidates; our ability to achieve favorable pricing for MDX; and our expectations regarding licensing, acquisitions and strategic operations. In some cases, forward-looking statements are identified by terminology such as “may,” “will,” “could,” “should,” “expects,” “plans,” “anticipates,” “believes,” “intends,” “estimates,” “predicts,” “potential,” or “continue” or the negative of these terms or other comparable terminology. Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results or performance to differ materially from those projected. These statements are only current predictions and are subject to known and unknown risks, uncertainties, and other factors that may cause our or our industry’s actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. 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 prospectus supplement would be interpreted differently in light of additional research and clinical and preclinical trials results. Also, while the FDA has indicated to us that positive efficacy results from certain clinical studies may be sufficient to demonstrate efficacy for approval of MDX, the FDA is not bound by these communications and accordingly may change its position in the future due to reasons within or outside of our control. The forward-looking statements contained in this prospectus supplement are subject to risks and uncertainties, including those described herein under “Risk Factors” and in our most recent Annual Report on Form 20-F, under Item 3.D. — “Risk Factors” and in our other filings with the SEC. You are cautioned not to place undue reliance on these forward looking statements, which speak only as of the date on which that statement is made. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements. Except as otherwise required by law, we are under no obligation to (and expressly disclaim any such obligation to) update or revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, after the date of this prospectus supplement.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of 6,175,000 shares of our ordinary shares in this offering will be approximately $37.4 million, after deducting underwriting discounts and commissions and offering expenses payable by us. If the underwriters exercise the option to purchase additional shares in full, we estimate that the net proceeds from this offering will be approximately $43.1 million, after deducting underwriting discounts and commissions and offering expenses payable by us.

We currently expect to use the net proceeds from this offering to fund our future clinical development program and for general corporate purposes.

The amounts and timing of our actual expenditures will depend upon numerous factors, including the progress of our development and commercialization efforts, the status of and results from our clinical trials, whether or not we enter into strategic collaborations or partnerships, and our operating costs and expenditures. Accordingly, our management will have significant flexibility in applying the net proceeds of this offering.

We have no current commitments or binding agreements with respect to any material acquisition of or investment in any technologies, products or companies.

PRICE RANGE OF ORDINARY SHARES

Our ordinary shares are listed on the NASDAQ Global Market under the symbol “ADHD”. From May 22, 2013, until March 28, 2014, our ordinary shares were listed on the NASDAQ Capital Market. Prior to May 22, 2013, there was no public trading market for our ordinary shares.

The following table sets forth, for the periods indicated, the high and low sales prices of our ordinary shares on the NASDAQ Global Market or the NASDAQ Capital Market, as applicable:

	High	Low
Year		
2015 (through November 12, 2015)	$ 9.50	$ 3.68
2014	$ 25.44	$ 3.12
2013	$ 26.96	$ 6.50
Calendar Quarter		
2015		
First quarter	$ 8.30	$ 3.68
Second quarter	$ 8.84	$ 5.38
Third quarter	$ 9.50	$ 5.61
Fourth quarter (through November 12, 2015)	$ 8.78	$ 5.28
2014		
First quarter	$ 25.44	$ 17.11
Second quarter	$ 21.33	$ 13.63
Third quarter	$ 22.19	$ 14.77
Fourth quarter	$ 15.68	$ 3.12
2013		
Second quarter (from May 22, 2013)	$ 8.30	$ 6.50
Third quarter	$ 18.99	$ 6.80
Fourth quarter	$ 26.96	$ 14.78
Month		
May 2015	$ 7.88	$ 5.38
June 2015	$ 8.84	$ 5.91
July 2015	$ 7.84	$ 5.92
August 2015	$ 9.50	$ 7.13
September 2015	$ 9.14	$ 5.61
October 2015	$ 8.34	$ 5.28
November 2015 (through November 12, 2015)	$ 8.78	$ 7.11

On November 12, 2015, the last reported sale price of our ordinary shares on the NASDAQ Global Market was $7.12 per share.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our ordinary shares and do not anticipate paying any cash dividends in the foreseeable future. Payment of cash dividends, if any, in the future will be at the discretion of our Board of Directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our Board of Directors may deem relevant. The Israeli Companies Law imposes further restrictions on our ability to declare and pay dividends and payment of dividends may be subject to Israeli withholding taxes.

CAPITALIZATION

The following table sets forth our cash and cash equivalents, short-term investments and shareholders' equity as of September 30, 2015, as follows:

- on an actual basis; and
- on an as adjusted basis to give effect to the issuance and sale of 6,175,000 ordinary shares by us in this offering at the public offering price of $6.50 per ordinary share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

The financial data in the following table should be read in conjunction with our consolidated unaudited financial information included in the report of foreign private issuer on Form 6-K furnished to the SEC on November 12, 2015, for the period ended September 30, 2015, which has been incorporated by reference in this prospectus.

	As of September 30, 2015	
	Actual	As Adjusted
	(unaudited, U.S. Dollars, in thousands)	
Cash and cash equivalents	$ 9,970	$ 47,384
Short-term bank deposit	25,537	25,537
Total Cash and cash equivalents and Short-term bank deposit	$ 35,507	$ 72,921
Shareholders' equity:		
Ordinary Shares of NIS 0.01 par value: Authorized – 50,000,000 as of September 30, 2015; Outstanding (Actual) – 21,181,722 shares as of September 30, 2015; Outstanding (As Adjusted) – 27,356,722 shares as of September 30, 2015	58	74
Additional paid-in capital	101,155	138,553
Accumulated deficit during the development stage	(66,130)	(66,130)
Total shareholders' equity	35,083	72,497
Capitalization	$ 35,083	$ 72,497

DILUTION

If you invest in our ordinary shares, you will experience immediate and substantial dilution to the extent of the difference between the public offering price of our ordinary shares and the pro forma net tangible book value per share of our ordinary shares immediately after the offering.

Our historical net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the actual number of outstanding ordinary shares. The historical net tangible book value of our ordinary shares as of September 30, 2015, was $35,083,000 or $1.66 per share.

The as adjusted net tangible book value of our ordinary shares as of September 30, 2015, was $72,497,250, or $2.65 per share. The as adjusted net tangible book value gives effect to the issuance and sale of 6,175,000 ordinary shares in this offering at a public offering price of $6.50 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. This represents an immediate increase in net tangible book value of $0.99.

The following table illustrates this dilution on a per share basis to new investors:

Public offering price per share		$ 6.50
Net tangible book value per share as of September 30, 2015	$ 1.66	
Increase in net tangible book value per share attributable to this offering	0.99	
As adjusted net tangible book value per share as of September 30, 2015, after giving effect to this offering		2.65
Dilution per share to new investors in this offering		$ 3.85

If the underwriters' option to purchase additional shares from us is exercised in full, and based on a public offering price of $6.50 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, the as adjusted net tangible book value per share after this offering would be approximately $2.76 per share, the increase in the as adjusted net tangible book value per share would be approximately $1.10 per share and the dilution per share to new investors purchasing shares in this offering would be approximately $3.74 per share.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement, dated November 13, 2015, between us and Jefferies LLC, 520 Madison Avenue, New York, New York 10022, and Barclays Capital Inc., 745 Seventh Avenue, New York, New York 10019, as the representatives of the underwriters named below and the joint book-running managers of this offering, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of ordinary shares shown opposite its name below:

Underwriter	Number of Ordinary Shares
Jefferies LLC	2,470,000
Barclays Capital Inc.	1,852,500
Oppenheimer & Co. Inc.	926,250
Cantor Fitzgerald & Co.	463,125
Roth Capital Partners, LLC	463,125
Total	6,175,000

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the ordinary shares if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the ordinary shares as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the ordinary shares, that you will be able to sell any of the ordinary shares held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the ordinary shares subject to their acceptance of the ordinary shares from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part. In addition, the underwriters have advised us that they do not intend to confirm sales to any account over which they exercise discretionary authority.

Commission and Expenses

The underwriters have advised us that they propose to offer the ordinary shares to the public at the initial public offering price set forth on the cover page of this prospectus supplement and to certain dealers, which may include the underwriters, at that price less a concession not in excess of $0.234 per ordinary share. After the offering, the initial public offering price and concession to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus supplement.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional ordinary shares.

	Per Ordinary Share		Total	
	Without Option to Purchase Additional Ordinary Shares	With Option to Purchase Additional Ordinary Shares	Without Option to Purchase Additional Ordinary Shares	With Option to Purchase Additional Ordinary Shares
Public offering price	$ 6.50	$ 6.50	$ 40,137,500	$ 46,158,125
Underwriting discounts and commissions	$ 0.39	$ 0.39	$ 2,408,250	$ 2,769,488
Proceeds to us, before expenses	$ 6.11	$ 6.11	$ 37,729,250	$ 43,388,638

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $315,000, including reimbursement to the underwriters for up to $15,000 for their FINRA counsel fee. In accordance with Financial Industry Regulatory Authority, Inc., or FINRA, Rule 5110, this reimbursed counsel fee is deemed underwriting compensation for this offering. In addition, we may at our absolute and sole discretion pay Jefferies LLC an incentive fee of up to $100,000. In accordance with FINRA Rule 5110, this incentive fee is deemed underwriting compensation for this offering.

Listing

Our ordinary shares are listed on The NASDAQ Global Market under the trading symbol "ADHD".

Stamp Taxes

If you purchase ordinary shares offered in this prospectus supplement, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus supplement.

Option to Purchase Additional Ordinary Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of the underwriting agreement, to purchase, from time to time, in whole or in part, up to an aggregate of 926,250 ordinary shares from us at the public offering price set forth on the cover page of this prospectus supplement, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional ordinary shares proportionate to that underwriter's initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more ordinary shares than the total number set forth on the cover page of this prospectus supplement.

No Sales of Similar Securities

We, our officers and our directors have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-l(h) under the Securities Exchange Act of 1934, as amended, or
- otherwise dispose of any share capital, options or warrants to acquire share capital, or securities exchangeable or exercisable for or convertible into share capital currently or hereafter owned either of record or beneficially, or
- publicly announce an intention to do any of the foregoing for a period of 90 days after the date of this prospectus supplement without the prior written consent of Jefferies LLC and Barclays Capital Inc.

This restriction terminates after the close of trading of the ordinary shares on and including the 90th day after the date of this prospectus supplement.

Jefferies LLC and Barclays Capital Inc. may, in their sole discretion and at any time or from time to time before the termination of the 90-day period release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our shareholders who will execute a lock-up agreement, providing consent to the sale of share capital prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that they, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, and certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the ordinary shares at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either “covered” short sales or “naked” short sales.

“Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional ordinary shares in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional ordinary shares or purchasing our ordinary shares in the open market. In determining the source of ordinary shares to close out the covered short position, the underwriters will consider, among other things, the price of ordinary shares available for purchase in the open market as compared to the price at which they may purchase ordinary shares through the option to purchase additional ordinary shares.

“Naked” short sales are sales in excess of the option to purchase additional ordinary shares. The underwriters must close out any naked short position by purchasing ordinary shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our ordinary shares in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of ordinary shares on behalf of the underwriters for the purpose of fixing or maintaining the price of the ordinary shares. A syndicate covering transaction is the bid for or the purchase of ordinary shares on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriter’s purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our ordinary shares or preventing or retarding a decline in the market price of our ordinary shares. As a result, the price of our ordinary shares may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the ordinary shares originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we, nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our ordinary shares. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

The underwriters may also engage in passive market making transactions in our ordinary shares on The NASDAQ Global Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of our ordinary shares in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker’s bid, that bid must then be lowered when specified purchase limits are exceeded.

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of ordinary shares for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus supplement, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

Other Activities and Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the ordinary shares offered hereby. Any such short positions could adversely affect future trading prices of the ordinary shares offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

NOTICE TO INVESTORS

Canada

Resale Restrictions

The distribution of the securities in Canada is being made only in the provinces of Ontario, Quebec, Alberta and British Columbia on a private placement basis exempt from the requirement that we prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of the securities in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

Representations of Canadian Purchasers

By purchasing the securities in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

- the purchaser is entitled under applicable provincial securities laws to purchase the securities without the benefit of a prospectus qualified under those securities laws as it is an "accredited investor" as defined under National Instrument 45-106 — Prospectus Exemptions,
- the purchaser is a "permitted client" as defined in National Instrument 31-103 — Registration Requirements, Exemptions and Ongoing Registrant Obligations,
- where required by law, the purchaser is purchasing as principal and not as agent, and
- the purchaser has reviewed the text above under Resale Restrictions.

Conflicts of Interest

Canadian purchasers are hereby notified that Jefferies LLC and Barclays Capital Inc. are relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105 — Underwriting Conflicts from having to provide certain conflict of interest disclosure in this document.

Statutory Rights of Action

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the prospectus (including any amendment thereto) such as this document contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser of these securities in Canada should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Enforcement of Legal Rights

All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

Taxation and Eligibility for Investment

Canadian purchasers of the securities should consult their own legal and tax advisors with respect to the tax consequences of an investment in the securities in their particular circumstances and about the eligibility of the securities for investment by the purchaser under relevant Canadian legislation.

Australia

This prospectus is not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
- a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the shares issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

European Economic Area

In relation to each member state of the European Economic Area which has implemented the Prospectus Directive, each referred to herein as a Relevant Member State, with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, referred to herein as the Relevant Implementation Date, no offer of any securities which are the subject of the offering contemplated by this prospectus has been or will be made to the public in that Relevant Member State other than any offer where a prospectus has been or will be published in relation to such securities that has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the relevant competent authority in that Relevant Member State in accordance with the Prospectus Directive, except that with effect from and including the Relevant Implementation Date, an offer of such securities may be made to the public in that Relevant Member State:

- to any legal entity which is a "qualified investor" as defined in the Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives of the underwriters for any such offer; or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of securities shall require the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe the securities, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending

Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32) of Hong Kong. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the Initial Purchaser will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means, unless otherwise provided herein, any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been and will not be lodged or registered with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or the invitation for subscription or purchase of the securities may not be issued, circulated or distributed, nor may the securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person as defined under Section 275(2), or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions, specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of any other applicable provision of the SFA.

Where the securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor as defined under Section 4A of the SFA) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor,

shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for six months after that corporation or that trust has acquired the Offer Shares under Section 275 of the SFA except:

- to an institutional investor under Section 274 of the SFA or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than $200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions, specified in Section 275 of the SFA;
- where no consideration is given for the transfer; or
- where the transfer is by operation of law.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, or FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In the State of Israel, this document is being distributed only to, and is directed only at, and any offer of the ordinary shares is directed only at, investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals", each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors will be required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

United Kingdom

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, referred to herein as the Order, and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated. Each such person is referred to herein as a Relevant Person.

This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a Relevant Person should not act or rely on this document or any of its contents.

LEGAL MATTERS

The validity of the securities offered hereby and certain matters of Israeli law will be passed upon for us by Zysman, Aharoni, Gayer & Co., Tel Aviv, Israel. Certain matters of United States federal securities law relating to this offering will be passed upon for us by Zysman, Aharoni, Gayer and Sullivan & Worcester, LLP, New York, New York. Legal counsel to the underwriters are Gornitzky & Co., Tel Aviv, Israel, with respect to Israeli law, and Covington & Burling LLP, New York, New York, with respect to U.S. law.

EXPERTS

The consolidated financial statements of Alcobra Ltd. as of December 31, 2014, have been incorporated by reference herein in reliance upon the report of Kost Forer Gabbay & Kasier, a member firm of EY Global, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION AND INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We are an Israeli company and are a “foreign private issuer” as defined in Rule 3b-4 under the Exchange Act. As a result, (1) our proxy solicitations are not subject to the disclosure and procedural requirements of Regulation 14A under the Exchange Act, and (2) transactions in our equity securities by our officers and directors are exempt from Section 16 of the Exchange Act.

In addition, we are not required to file reports and financial statements with the SEC as frequently or as promptly as U.S. companies whose securities are registered under the Exchange Act. However, we file with the SEC an Annual Report on Form 20-F containing financial statements audited by an independent registered public accounting firm. We also furnish reports on Form 6-K containing unaudited financial information for each calendar quarter and other material information that we are required to make public, that we file with, and that is made public by, any stock exchange on which our shares are traded, or that we distribute, or that is required to be distributed by us, to our shareholders.

You can read and copy any materials we file with the SEC at its Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You can obtain information about the operation of the SEC Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site that contains information we file electronically with the SEC, which you can access over the Internet at *http://www.sec.gov.*

This prospectus supplement and the accompanying prospectus are part of a registration statement on Form F-3 filed by us with the SEC under the Securities Act. As permitted by the rules and regulations of the SEC, this prospectus does not contain all the information set forth in the registration statement and the exhibits thereto filed with the SEC. For further information with respect to us and the ordinary shares offered hereby, you should refer to the complete registration statement on Form F-3, which may be obtained from the locations described above. Statements contained in this prospectus or in any prospectus supplement about the contents of any contract or other document are not necessarily complete. If we have filed any contract or other document as an exhibit to the registration statement or any other document incorporated by reference in the registration statement, you should read the exhibit for a more complete understanding of the document or matter involved. Each statement regarding a contract or other document is qualified in its entirety by reference to the actual document.

The following documents filed with or furnished to the SEC by our Company are incorporated by reference in this registration statement:

- The description of the Company's Ordinary Shares, par value NIS 0.01 per share contained in the Company's registration statement on Form 8-A filed pursuant to the Exchange Act on May 17, 2013 (File No. 001-35932), including any amendment or report filed which updates such description.
- The Company's Annual Report on Form 20-F for the fiscal year ended December 31, 2014.
- The first three paragraphs in the press release incorporated by reference into the Company's report of foreign private issuer on Form 6-K furnished to the SEC on March 10, 2015.
- The notice of annual general meeting of the Company incorporated by reference into the Company's report of foreign private issuer on Form 6-K furnished to the SEC on June 3, 2015.
- The first and the fifth through the ninth paragraphs in the press release incorporated by reference into the Company's report of foreign private issuer on Form 6-K furnished to the SEC on June 24, 2015.
- The first paragraph in the press release incorporated by reference into the Company's report of foreign private issuer on Form 6-K furnished to the SEC on July 13, 2015.
- The Company's Interim GAAP Financial Statements included in the report of foreign private issuer on Form 6-K furnished to the SEC on August 13, 2015.
- The first paragraph in the press release incorporated by reference into the Company's report of foreign private issuer on Form 6-K furnished to the SEC on September 21, 2015.
- The Company's Interim GAAP Financial Statements and Management's Discussion and Analysis of Financial Condition and Results of Operations included in the Company's report of foreign private issuer on Form 6-K furnished to the SEC on November 12, 2015.
- The Company's Interim GAAP Financial Statements included in the report of foreign private issuer on Form 6-K furnished to the SEC on November 12, 2015 (Report Number 2).
- The Company's report of foreign private issuer on Form 6-K furnished to the SEC on November 13, 2015.

All subsequent Annual Reports filed by us pursuant to the Exchange Act on Form 20-F prior to the termination of the offering shall be deemed to be incorporated by reference to this prospectus and to be a part hereof from the date of filing of such documents. We may also incorporate any Form 6-K subsequently submitted by us to the SEC prior to the termination of the offering by identifying in such Forms 6-K that they are being incorporated by reference herein, and any Forms 6-K so identified shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of submission of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

The information we incorporate by reference is an important part of this prospectus, and later information that we file with the SEC will automatically update and supersede the information contained in this prospectus.

We will provide you without charge, upon your written or oral request, a copy of any of the documents incorporated by reference in this prospectus, other than exhibits to such documents which are not specifically incorporated by reference into such documents. Please direct your written or telephone requests to us at Alcobra Ltd., Azrieli Triangle Building, 132 Derech Menachem Begin. 39th Floor, Tel Aviv 6701101, Israel, attention: Dr. Tomer Berkovitz, Chief Financial Officer, telephone number: +972-72-220-4661.

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Prospectus

$100,000,000

Ordinary Shares

We may offer and sell from time to time in one or more offerings up to a total amount of $100,000,000 of our ordinary shares. Each time we sell ordinary shares pursuant to this prospectus, we will provide in a supplement to this prospectus the price and any other material terms of any such offering. We may also authorize one or more free writing prospectuses to be provided to you in connection with each offering. Any prospectus supplement and related free writing prospectuses may also add, update or change information contained in the prospectus. You should read this prospectus, any applicable prospectus supplement and related free writing prospectuses, as well as the documents incorporated by reference or deemed incorporated by reference into this prospectus, carefully before you invest in our ordinary shares.

Our ordinary shares are traded on the NASDAQ Global Market under the symbol “ADHD”.

Investing in our ordinary shares involves a high degree of risk. Risks associated with an investment in our ordinary shares will be described in any applicable prospectus supplement and are and will be described in certain of our filings with the Securities and Exchange Commission, as described in “Risk Factors” on page 1.

The ordinary shares may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers, or through a combination of such methods, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled “Plan of Distribution” in this prospectus. If any agents or underwriters are involved in the sale of our ordinary shares with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of our ordinary shares and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed on completeness or the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is August 1, 2014

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form F-3 that we filed with the Securities and Exchange Commission, or the SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may offer from time to time up to an aggregate of $100,000,000 of our ordinary shares in one or more offerings. We sometimes refer to our ordinary shares as the “securities” throughout this prospectus.

Each time we sell ordinary shares, we will provide you with a prospectus supplement that will describe the specific amounts, prices and terms of such offering. We may also authorize one or more free writing prospectuses to be provided to you in connection with such offering. The prospectus supplement and any related free writing prospectuses may also add, update or change information contained in this prospectus. You should read carefully both this prospectus, the applicable prospectus supplement and any related free writing prospectus together with additional information described below under “Where You Can Find More Information and Incorporation by Reference” before buying the ordinary shares being offered.

This prospectus does not contain all of the information provided in the registration statement that we filed with the SEC. For further information about us or our ordinary shares, you should refer to that registration statement, which you can obtain from the SEC as described below under “Where You Can Find More Information and Incorporation by Reference.”

You should rely only on the information contained or incorporated by reference in this prospectus, a prospectus supplement and related free writing prospectuses. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained in this prospectus and the accompanying prospectus supplement or related free writing prospectuses is accurate on any date subsequent to the date set forth on the front of the document or that any information that we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since those dates.

In this prospectus, references to the terms “Alcobra,” “the Company,” “we,” “us,” “our” and similar terms, refer to Alcobra Ltd., unless we state or the context implies otherwise. References to our “ordinary shares” mean our ordinary shares, par value New Israeli Shekels, or NIS, 0.01 per share.

ABOUT ALCOBRA LTD.

This summary highlights information contained in the documents incorporated herein by reference. Before making an investment decision, you should read the entire prospectus, and our other filings with the SEC, including those filings incorporated herein by reference, carefully, including the sections entitled "Risk Factors" and "Warning Regarding Forward-Looking Statements."

We are an emerging biopharmaceutical company primarily focused on the development and commercialization of proprietary pharmaceutical products for treatment of Central Nervous System (CNS) disorders, and cognitive dysfunctions in particular. Our lead drug candidate is MDX for the treatment of Attention Deficit and Hyperactivity Disorder, or ADHD, and other cognitive dysfunctions including Fragile X Syndrome.

The most common currently available treatments for ADHD are stimulants that increase the brain chemicals dopamine and norepinephrine. Stimulants have significant side effects, and are classified as controlled substances which have significant potential for misuse, abuse and addiction. MDX is not a stimulant, and works with a different mechanism of action. MDX is a proprietary, combined rapid onset/extended release formulation of the chemical Pyridoxine Pyroglutamate, which is more broadly known as Metadoxine. In September 2011, we completed a 120 subject double-blind placebo-controlled Phase 2 study in adult ADHD subjects that showed statistically significant improvement in clinical ADHD symptoms, and also showed favorable tolerability with no significant side effects over a placebo. The trial met all primary and secondary clinical endpoints showing statistically significant improvement over the placebo-treated control group. In December 2013, we completed an additional 36 subject double-blind placebo-controlled Phase 2 study in adult ADHD confirming our previous findings and highlighting the rapid onset of the drug, demonstrating efficacy over placebo from first day of dosing.

In March 2014, following the U.S. Food and Drug Administration, or FDA, acceptance of our investigational new drug application (IND) for MDX, we initiated patient enrollment in a Phase 3 clinical trial for the use of MDX to treat ADHD in adults. This study is a 300-patient, randomized, placebo-controlled trial conducted at 20 sites — 18 in the U.S. and 2 in Israel. If this and any future clinical trials demonstrate the safety and efficacy of MDX, we will seek to obtain marketing approval from the FDA for MDX for use in adults. We have similar plans to seek marketing approval in the European Union, Japan and other territories.

Subject to obtaining the necessary regulatory clearances, we further plan to conduct a Phase II study in pediatric ADHD in 2014, followed by a Phase 3 study in this population in 2015, and, if the data supports it, proceed to request a marketing authorization. The requirements to conduct pediatric clinical trials are more stringent than those for adults.

We also plan to advance clinical studies and commercialization plans for MDX in additional indications of cognitive dysfunction which present significant market opportunities, such as Fragile X Syndrome, where we announced positive results from pre-clinical studies. Fragile X Syndrome is a neurogenetic disorder characterized by intellectual disability, behavioral and learning challenges. It is the leading known genetic cause of autism, and accounts for approximately 2-5% of autism cases. According to the U.S. Centers for Disease Control and Prevention, approximately 1 in 4,000 males and 1 in 8,000 females have Fragile X Syndrome.

In May 2014, the FDA has accepted our Phase IIb clinical trial protocol for MDX for the treatment of adolescent and adult patients with Fragile X Syndrome. This trial will be a multi-center, randomized, placebo-controlled study and will be conducted primarily in the U.S. including 10 clinical sites.

RISK FACTORS

Investing in our securities involves significant risks. Before making an investment decision, you should carefully consider the risks described under “Risk Factors” in the applicable prospectus supplement and under Item 3.D. — “Risk Factors” in our most recent Annual Report on Form 20-F, or any updates in our Reports on Form 6-K, together with all of the other information appearing in this prospectus or incorporated by reference into this prospectus and any applicable prospectus supplement, in light of your particular investment objectives and financial circumstances. The risks so described are not the only risks facing us. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations. Our business, financial condition and results of operations could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. The discussion of risks includes or refers to forward-looking statements; you should read the explanation of the qualifications and limitations on such forward-looking statements discussed elsewhere in this prospectus.

WARNING REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains and any prospectus supplement may contain, “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995 and other U.S. Federal securities laws. Also, documents that we incorporate by reference into this prospectus, including documents that we subsequently file with the SEC, will contain forward-looking statements. These forward-looking statements include, but are not limited to, those statements regarding anticipated expenses, capital requirements and our needs for additional financing; timing, design, the initiation and successful completion of the clinical trials we are or anticipate conducting, if at all; FDA approval of, or other regulatory action in the U.S. and elsewhere, with respect to MDX; the commercial launch and future sales of MDX or any other future products or product candidates; our ability to achieve favorable pricing for MDX; and our expectations regarding licensing, acquisitions and strategic operations. In some cases, forward-looking statements are identified by terminology such as “may,” “will,” “could,” “should,” “expects,” “plans,” “anticipates,” “believes,” “intends,” “estimates,” “predicts,” “potential,” or “continue” or the negative of these terms or other comparable terminology. Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results or performance to differ materially from those projected. These statements are only current predictions and are subject to known and unknown risks, uncertainties, and other factors that may cause our or our industry’s actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. 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 prospectus would be interpreted differently in light of additional research and clinical and preclinical trials results. The forward-looking statements contained in this prospectus are subject to risks and uncertainties, including in our most recent Annual Report on Form 20-F, under Item 3.D. — “Risk Factors” and in our other filings with the SEC. You are cautioned not to place undue reliance on these forward looking statements, which speak only as of the date hereof. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements. Except as otherwise required by law, we are under no obligation to (and expressly disclaim any such obligation to) update or revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, after the date of this prospectus.

CAPITALIZATION AND INDEBTEDNESS

The following table sets forth cash and cash equivalents, short-term investments and our shareholders' equity as of March 31, 2014. The financial data in the following table should be read in conjunction with our consolidated unaudited financial statements included in the report of foreign private issuer on Form 6-K furnished to the SEC on May 15, 2014 for the period ended March 31, 2014, which have been incorporated by reference in this prospectus.

	As of March 31, 2014 (unaudited, U.S. Dollars, in thousands)
Cash and cash equivalents	$ 10,392
Short-term bank deposit	34,033
Shareholders' equity:	
Ordinary Shares of NIS 0.01 par value:	
Authorized – 50,000,000 as of March 31, 2014;	
Outstanding – 13,636,709 shares as of March 31, 2014.	39
Additional paid-in capital	68,718
Deficit accumulated during the development stage	(26,500)
Total shareholders' equity	42,257
Capitalization	42,257

REASONS FOR THE OFFER AND USE OF PROCEEDS

Unless otherwise set forth in the related prospectus supplement or, if applicable, the pricing supplement, we intend to use the net proceeds from the sale of securities offered through this prospectus for general corporate purposes, which include financing our operations, capital expenditures and business development. The specific purpose of any individual issuance of securities will be described in the related prospectus supplement.

PRICE RANGE OF OUR ORDINARY SHARES

Our ordinary shares were listed on the NASDAQ Capital Market under the symbol “ADHD” from May 22, 2013 until March 27, 2014. Since March 28, 2014, our ordinary shares have been listed on the NASDAQ Global Market. Prior to May 22, 2013, there was no public trading market for our ordinary shares. Our initial public offering was priced at $8.00 per share on May 21, 2013. The following table sets forth for the periods indicated the high and low sales prices per ordinary share as reported on the NASDAQ Capital Market through March 27, 2014, and, starting March 28, 2014, on the NASDAQ Global Market:

Annual Information:	**Low**	**High**
2013	$ 6.64	$ 25.51
Quarterly Information		
Second Quarter 2013	$ 6.64	$ 7.25
Third Quarter 2013	$ 6.84	$ 18.71
Fourth Quarter 2013	$ 15.51	$ 25.51
First Quarter 2014	$ 17.86	$ 25.02
Second Quarter 2014	$ 14.03	$ 20.62
Monthly Information:		
January 2014	$ 17.86	$ 23.10
February 2014	$ 19.95	$ 25.02
March 2014	$ 18.15	$ 23.61
April 2014	$ 14.03	$ 18.49
May 2014	$ 15.85	$ 17.31
June 2014	$ 16.44	$ 20.62
July 2014 (through July 7, 2014)	$ 17.94	$ 19.73

DESCRIPTION OF OUR ORDINARY SHARES

The following is a summary description of our ordinary shares under our amended and restated articles of association, or Articles of Association. Our share capital is NIS 500,000, consisting of 50,000,000 ordinary shares NIS 0.01 par value per share. The ordinary shares do not have cumulative voting rights in the election of directors. As a result, the holders of ordinary shares that represent more than 50% of the voting power have the power to elect all the directors.

Dividend and Liquidation Rights. Our board of directors may declare a dividend to be paid to the holders of our ordinary shares according to their rights and interests in our profits and may fix the record date for eligibility and the time for payment. The directors may from time to time pay to the shareholders on account of the next forthcoming dividend such interim dividends as, in their judgment, our position justifies. All dividends unclaimed for one year after having been declared may be invested or otherwise used by the directors for our benefit until claimed. No unpaid dividend or interest shall bear interest as against us. Our board of directors may determine that a dividend may be paid, wholly or partially, by the distribution of certain of our assets or by a distribution of paid up shares, debentures or debenture stock or any of our securities or of any other companies or in any one or more of such ways in the manner and to the extent permitted by the Israeli Companies Law 1999, or the Companies Law.

Voting; annual, general and extraordinary meeting. Subject to any rights or restrictions for the time being attached to any class or classes of shares, each shareholder shall have one vote for each share of which he or she is the holder, whether on a show of hands or on a poll. Our Articles of Association do not permit cumulative voting and it is not mandated by Israeli law. Votes may be given either personally or by proxy. A proxy need not be a shareholder. If any shareholder is without legal capacity, he may vote by means of a trustee or a legal custodian, who may vote either personally or by proxy. If two or more persons are jointly entitled to a share then, in voting upon any question, the vote of the senior person who tenders a vote, whether in person or by proxy, shall be accepted to the exclusion of the votes of the other registered holders of the share and, for this purpose seniority shall be determined by the order in which the names stand in the shareholder register.

Quorum for general meetings. The quorum required for our general meetings of shareholders consists of at least two shareholders present in person, by proxy or written ballot who holds or represent between them at least one-third of the total outstanding voting rights. A meeting adjourned for lack of a quorum is generally adjourned to the same day in the following week at the same time and place or to a later time/date if so specified in the summons or notice of the meeting. At the reconvened meeting, any two or more shareholders present in person or by proxy shall constitute a lawful quorum.

Notice of general meetings. Unless a longer period for notice is prescribed by the Companies Law, at least 10 days and not more than 60 days' notice of any general meeting shall be given, specifying the place, the day and the hour of the meeting and, in the case of special business, the nature of such business, shall be given in the manner hereinafter mentioned, to such shareholders as are under the provisions of our Articles of Association, entitled to receive notices from us. Only shareholders of record as reflected on our share register at the close of business on the date fixed by the board of directors as the record date determining the then shareholders who will be entitled to vote, shall be entitled to notice of, and to vote, in person or by proxy, at a general meeting and any postponement or adjournment thereof.

Annual general meetings; agenda; calling a general meeting. General meetings are held at least once in every calendar year at such time (within a period of 15 months after the holding of the last preceding general meeting), and at such time and place as may be determined by the board of directors. At a general meeting, decisions shall be adopted only on matters that were specified on the agenda. The board of directors is obligated to call extraordinary general meeting of the shareholders upon a written request in accordance with the Companies Law. The Companies Law provides that an extraordinary general meeting of shareholder may be called by the board of directors or by a request of two directors or 25% of the directors in office, or by shareholders holding at least 5% of the issued share capital of the company and at least 1% of the voting rights, or of shareholders holding at least 5% of the voting rights of the company.

Majority vote. Except as otherwise provided in the Articles of Association, any resolution at a general meeting shall be deemed adopted if approved by the holders of a majority of our voting rights represented at the meeting in person or by proxy and voting thereon. In the case of an equality of votes, the chairman of the meeting shall not be entitled to a further vote.

No discrimination against shareholders. According to our Articles of Association, there are no discriminating provisions against any existing or prospective holders of our shares as a result of a shareholder holding a substantial number of shares.

Transfer of Shares; record dates. Fully paid up ordinary shares may be freely transferred pursuant to Articles of Association unless such transfer is restricted or prohibited by another instrument or securities laws. Each shareholder who would be entitled to attend and vote at a general meeting of shareholders is entitled to receive notice of any such meeting. For purposes of determining the shareholders entitled to notice and to vote at such meeting, the board of directors will fix a record date.

Modification of Class Rights. If, at any time, the share capital is divided into different classes of shares, the rights attached to any class (unless otherwise provided by the terms of issuance of the shares of that class) may be varied with the consent in writing of the holders of all the issued shares of that class, or with the sanction of a majority vote at a meeting of the shareholders passed at a separate meeting of the holders of the shares of the class. The provisions of our Articles of Association relating to general meetings shall apply, mutatis mutandis, to every such separate general meeting. Any holder of shares of the class present in person or by proxy may demand a secret poll.

Unless otherwise provided by the conditions of issuance, the enlargement of an existing class of shares, or the issuance of additional shares thereof, shall not be deemed to modify or abrogate the rights attached to the previously issued shares of such class or of any other class. These conditions provide for the minimum shareholder approvals permitted by the Companies Law.

Restrictions on Shareholders Rights to Own Securities. Our Articles of Association and the laws of the State of Israel do not restrict in any way the ownership or voting or our shares by nonresidents of Israel, except with respect to subjects of countries which are in a state of war with Israel.

Election of Directors. Other than external directors, as defined in the Companies Law, for whom special election requirements and terms of office apply under the Companies Law, our directors are each elected at a general meeting of our shareholders and serve for a term of roughly one year. Directors may nevertheless be removed prior to the end of their term by the majority of our shareholders at a general meeting of our shareholders or upon the occurrence of certain events, all in accordance with the Companies Law and our Articles of Association. In addition, our Articles of Association allow our board of directors to appoint directors, other than external directors, to fill vacancies on our board of directors, for a term of office which shall continue until the next annual meeting following his or her appointment.

External directors are elected for an initial term of three years and may be elected for up to two additional three-year terms (or more) under certain circumstances. External directors may be removed from office only under the limited circumstances set forth in the Companies Law.

PLAN OF DISTRIBUTION

We may sell the securities being offered hereby in one or more of the following methods from time to time:

- a block trade (which may involve crosses) in which the broker or dealer so engaged will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker or dealer as principal and resale by such broker or dealer for its own account pursuant to this prospectus;
- exchange distributions and/or secondary distributions;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- to one or more underwriters for resale to the public or to investors;
- through agents;
- in “at the market offerings,” within the meaning of Rule 415(a)(4) of the Securities Act, to or through a market maker or into an existing trading market, on an exchange or otherwise;
- transactions not involving market makers or established trading markets, including direct sales or privately negotiated transactions;
- through a combination of these methods of sale.

The securities that we distribute by any of these methods may be sold, in one or more transactions, at:

- a fixed price or prices, which may be changed;
- market prices prevailing at the time of sale;
- prices related to prevailing market prices; or
- negotiated prices.

We will set forth in a prospectus supplement the terms of the offering of securities, including:

- the name or names of any agents, dealers or underwriters;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents’ or underwriters’ compensation;
- the public offering price;
- any discounts or concessions allowed or reallowed or paid to dealers; and
- any securities exchanges or markets on which such securities may be listed.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or reallowed or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may also sell securities directly to one or more purchasers without using underwriters or agents.

Underwriters, dealers and agents that participate in the distribution of the securities may be underwriters as defined in the Securities Act and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us in the ordinary course of their businesses.

In connection with an offering, an underwriter may purchase and sell securities in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of securities than they are required to purchase in the offering.

Accordingly, to cover these short sales positions or to otherwise stabilize or maintain the price of the securities, the underwriters may bid for or purchase securities in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to syndicate members or other broker-dealers participating in the offering are reclaimed if securities previously distributed in the offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. The impositions of a penalty bid may also affect the price of the securities to the extent that it discourages resale of the securities. The magnitude or effect of any stabilization or other transactions is uncertain. These transactions may be effected on The Nasdaq Global Market or otherwise and, if commenced, may be discontinued at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum commission or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

EXPENSES

We are paying all of the expenses of the registration of our securities under the Securities Act, including, to the extent applicable, registration and filing fees, printing and duplication expenses, administrative expenses, accounting fees and the legal fees of our counsel. We estimate these expenses to be approximately $30,000 which at the present time include the following categories of expenses:

SEC registration fee	$ 12,880
Legal fees and expenses	$ 7,000
Accounting fees and expenses	$ 5,000
Miscellaneous expenses	$ 5,120
Total	**$ 30,000**

In addition, we anticipate incurring additional expenses in the future in connection with the offering of our securities pursuant to this prospectus. Any such additional expenses will be disclosed in a prospectus supplement.

LEGAL MATTERS

The validity of the ordinary shares offered in this prospectus will be passed upon for us by Zysman, Aharoni, Gayer & Co., Tel Aviv, Israel. Zysman, Aharoni, Gayer and Sullivan & Worcester LLP, New York, New York, is acting as our counsel in connection with United States securities laws.

EXPERTS

The financial statements, incorporated in this prospectus by reference from the Company's Annual Report on Form 20-F, have been audited by Kost Forer Gabbay & Kasierer, a member of EY Global, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION AND INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We are an Israeli company and are a “foreign private issuer” as defined in Rule 3b-4 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. As a result, (1) our proxy solicitations are not subject to the disclosure and procedural requirements of Regulation 14A under the Exchange Act, and (2) transactions in our equity securities by our officers and directors are exempt from Section 16 of the Exchange Act.

In addition, we are not required to file reports and financial statements with the SEC as frequently or as promptly as U.S. companies whose securities are registered under the Exchange Act. However, we file with the SEC an Annual Report on Form 20-F containing financial statements audited by an independent registered public accounting firm. We also furnish reports on Form 6-K containing unaudited financial information for each calendar quarter and other material information that we are required to make public, that we file with, and that is made public by, any stock exchange on which our shares are traded, or that we distribute, or that is required to be distributed by us, to our shareholders.

You can read and copy any materials we file with the SEC at its Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You can obtain information about the operation of the SEC Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site that contains information we file electronically with the SEC, which you can access over the Internet at *http://www.sec.gov.* You may also access the information we file electronically with the SEC through our website at *http://www.alcobra-pharma.com.* The information contained on, or linked from our website or the SEC’s website does not form part of this prospectus.

This prospectus is part of a registration statement on Form F-3 filed by us with the SEC under the Securities Act. As permitted by the rules and regulations of the SEC, this prospectus does not contain all the information set forth in the registration statement and the exhibits thereto filed with the SEC. For further information with respect to us and the ordinary shares offered hereby, you should refer to the complete registration statement on Form F-3, which may be obtained from the locations described above. Statements contained in this prospectus or in any prospectus supplement about the contents of any contract or other document are not necessarily complete. If we have filed any contract or other document as an exhibit to the registration statement or any other document incorporated by reference in the registration statement, you should read the exhibit for a more complete understanding of the document or matter involved. Each statement regarding a contract or other document is qualified in its entirety by reference to the actual document.

The following documents filed with or furnished to the SEC by our Company are incorporated by reference in this registration statement:

- The Company’s Annual Report on Form 20-F for the fiscal year ended December 31, 2013;
- The notice of annual general meeting of the Company incorporated by reference into the Company’s report of foreign private issuer on Form 6-K furnished to the SEC on April 22, 2014;
- The Company’s GAAP Financial Statements included in the report of foreign private issuer on Form 6-K furnished to the SEC on May 15, 2014;

- The Company's report of foreign private issuer on Form 6-K furnished to the SEC on May 27, 2014; and
- The description of the Company's Ordinary Shares, par value NIS 0.01 per share contained in the Company's registration statement on Form 8-A filed pursuant to the Exchange Act on May 17, 2013 (File No. 001-35932), including any amendment or report filed which updates such description.

All subsequent Annual Reports filed by us pursuant to the Exchange Act on Form 20-F prior to the termination of the offering shall be deemed to be incorporated by reference to this prospectus and to be a part hereof from the date of filing of such documents. We may also incorporate any Form 6-K subsequently submitted by us to the SEC prior to the termination of the offering by identifying in such Forms 6-K that they are being incorporated by reference herein, and any Forms 6-K so identified shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of submission of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

The information we incorporate by reference is an important part of this prospectus, and later information that we file with the SEC will automatically update and supersede the information contained in this prospectus.

We will provide you without charge, upon your written or oral request, a copy of any of the documents incorporated by reference in this prospectus, other than exhibits to such documents which are not specifically incorporated by reference into such documents. Please direct your written or telephone requests to us at Alcobra Ltd., Amot Investment Building, 2 Weizman St. 9th Floor, Tel Aviv 6423902, Israel, attention: Dr. Tomer Berkovitz, Chief Financial Officer, telephone number: +972-72-220-4661.

ENFORCEABILITY OF CIVIL LIABILITIES

We are incorporated in Israel, almost all of our executive officers and directors and the Israeli experts named herein are nonresidents of the United States, and a substantial portion of our assets and of such persons' assets are located outside the United States. Service of process upon us and upon our directors and officers and the experts named in his prospectus, may be difficult to obtain within the United States. Furthermore, because substantially all of our assets and substantially all of our directors and officers are located outside the United States, any judgment obtained in the United States against us or any of our directors and officers may not be collectible within the United States.

We have been informed by our legal counsel in Israel that it may be difficult to assert United States securities law claims in original actions instituted in Israel. Israeli courts may refuse to hear a claim based on a violation of United States securities laws because Israel is not the most appropriate forum to bring such a claim. In addition, even if an Israeli court agrees to hear a claim, it may determine that Israeli law and not U.S. law is applicable to the claim. If United States law is found to be applicable, the content of applicable U.S. law must be proved as a fact, which can be a time-consuming and costly process. Certain matters of procedure will also be governed by Israeli law. There is little binding case law in Israel addressing these matters.

Subject to specified time limitations and legal procedures, under the rules of private international law currently prevailing in Israel, Israeli courts may enforce a final U.S. judgment in a civil matter, including judgments based upon the civil liability provisions of the U.S. securities laws and including a monetary or compensatory judgment in a non-civil matter, provided that:

- the judgment is enforceable in the state in which it was given;
- adequate service of process has been effected and the defendant has had a reasonable opportunity to present his arguments and evidence;
- the judgment and the enforcement of the judgment are not contrary to the law, public policy, security or sovereignty of the state of Israel;
- the judgment was not obtained by fraud and does not conflict with any other valid judgment in the same matter between the same parties; and
- an action between the same parties in the same matter is not pending in any Israeli court at the time the lawsuit is instituted in the foreign court.

We have irrevocably appointed our subsidiary, Alcobra Inc., as our agent to receive service of process in any action against us in the state and federal courts sitting in the City of New York, Borough of Manhattan arising out of any offering under this registration statement of which this prospectus forms a part, or any purchase or sale of securities in connection therewith. We have not given consent for this agent to accept service of process in connection with any other claim.

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6,175,000 Shares

Alcobra Ltd.

Ordinary Shares

PROSPECTUS SUPPLEMENT

Joint Book-Running Managers

Jefferies

Barclays

Co-Managers

Oppenheimer & Co.

Cantor Fitzgerald & Co.

Roth Capital Partners

November 13, 2015