Zacks Equity Research

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Applied DNA Sciences (APDN-OTC)

APDN: unique anti-counterfeiting technology, initiating with an Outperform rating.

Current Recommendation	**Outperform**
Prior Recommendation	N/A
Date of Last Change	08/12/2010
Current Price (08/31/10)	$0.04
Six- Month Target Price	**$0.20**

OUTLOOK

Applied DNA is a provider of plant-DNA based security and authentication solutions that can help protect products, brands and intellectual property of companies, governments and consumers from theft, counterfeiting, fraud and diversion. We are optimistic about the Company's unique technology and two principle anti-counterfeiting and product authentication solutions: SigNature DNA and BioMaterial Genotyping which can be used in numerous industries. With an ever booming anti-counterfeiting business worldwide, along with its unique technology and broad range of product offering, the Company is well positioned to boost its top line and bottom line in the coming years.

SUMMARY DATA

52-Week High	**$0.16**
52-Week Low	**$0.03**
One-Year Return (%)	**-70.80**
Beta	**0.25**
Average Daily Volume (sh)	**445,788**
Shares Outstanding (mil)	**302**
Market Capitalization ($mil)	**$12**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**3**
Insider Ownership (%)	**58**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2010 Estimate	**N/A**
P/E using 2011 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**High,**
Type of Stock	**N/A**
Industry	**Protection-Sfty**
Zacks Rank in Industry	**N/A**

ZACKS ESTIMATES

Revenue
(In millions of $)

	Q1 (Dec)	Q2 (Mar)	Q3 (Jun)	Q4 (Sep)	Year (Sep)
2009	0.15 A	0.06 A	0.02 A	0.06 A	0.30 A
2010	0.07 A	0.19 A	0.17 A	0.25 E	0.68 E
2011					2.00 E
2012					4.50 E

Earnings per Share
(EPS is operating earnings before non-recurring items)

	Q1 (Dec)	Q2 (Mar)	Q3 (Jun)	Q4 (Sep)	Year (Sep)
2009	-$0.01 A	-$0.01 A	-$0.01 A	-$0.00 A	-$0.03 A
2010	-$0.01 A	-$0.00 A	-$0.01 A	-$0.01 E	-$0.03 E
2011					-$0.02 E
2012					-$0.02 E

Zacks Projected EPS Growth Rate - Next 4 Years % **N/A**

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EXECUTIVE SUMMARY

- We are initiating coverage of Applied DNA Sciences Inc. (Applied DNA) with an Outperform rating. Our six to twelve month price target is $0.20.

- Applied DNA operates as a provider of botanical-DNA based security and authentication solutions. We are enthusiastic about the Company's two principle anti-counterfeiting solutions: SigNature DNA and BioMaterial Genotyping, which form the basis of its broad product offering.

- The Company's products target the extraordinary large cash-in-transit and general anti-counterfeiting markets. We expect continued rapid growth of the general anti-counterfeiting market in the next few years. Therefore, the outlook for Applied DNA is very positive in our view.

- Applied DNA utilizes a series of unique DNA manipulation technologies to create customized SigNature DNA Marker which can be embedded to a wide range of media, and can be used in numerous industries.

- Applied DNA's technology holds competitive advantages over its competitors. The Company's principle product SigNature DNA uses a unique DNA technology which can not be replicated. The core technology of Applied DNA is to use the DNA of everyday plants to mark objects in a unique manner, and then identify these objects by detecting the absence or presence of the DNA.

- Applied DNA has an experienced management team and the Company has an appropriate growth strategy in place to take advantage of the current demand for its products.

- With an ever booming anti-counterfeiting business worldwide, combined with its unique technology and broad range of product offering, the Company is well positioned to boost its top line and bottom line in the coming years.

- Cash position and competition are our chief concerns.

OVERVIEW

Applied DNA Sciences, Inc. (Applied DNA) is a biotech Company engaged in the research, development and commercialization of botanical-DNA based security and authentication solutions that can help protect the products, brands and intellectual property of companies, governments and consumers from theft, counterfeiting, fraud and diversion. The Company has authentication labs and manufacturing facilities in Stony Brook, New York and Huddersfield, Yorkshire, UK.

Currently, Applied DNA markets two principal anti-counterfeiting and product authentication solutions: **SigNature DNA** and **BioMaterial Genotyping**, both can be used in numerous industries, including cash-in-transit (transport and storage of banknotes), textiles and apparel, identity cards and other secure documents, pharmaceuticals, wine, and luxury consumer goods. Both platforms have spawned a series of product offerings which differ by the industry vertical to which the product is sold.

The Company's flagship product offering, **SigNature DNA,** uses the DNA of plants to manufacture highly customized and encrypted botanical DNA markers (SigNature DNA Markers) which are used to mark and authenticate products in a unique manner that essentially cannot be replicated. SigNature DNA Markers have been embedded into a range of products, including various inks, dyes, textile treatments, thermal ribbons, threads, varnishes and adhesives. These items can then be tested for the presence of SigNature DNA Markers through an instant field detection or a forensic level authentication. SigNature DNA

Markers provide a secure, accurate and cost-effective means for users to incorporate forensic SigNature DNA Markers in a broad range of items, such as recovered banknotes, branded textiles and apparel products, pharmaceuticals and cosmetic products, identity cards and other secure documents, digital media, artwork and collectibles and fine wine. The forensic Signature DNA Markers can then be quickly and reliably authenticated to identify original products. Having the ability to reliably authenticate and identify counterfeit versions of such items enables companies and governments to detect, deter, interdict and prosecute counterfeiting enterprises and individuals.

BioMaterial GenoTyping refers to the development of genetic assays to distinguish between varieties or strains of biomaterials, such as cotton, wool, tobacco, fermented beverages, natural drugs and foods that contain their own source DNA. Applied DNA has developed two proprietary genetic tests: **FiberTyping** and **PimaTyping**, to track American Pima cotton from the field to finished garments. These genetic assays provide the cotton industry with the first authentication tools that can be applied throughout the U.S. and worldwide cotton industry from cotton growers, mills, wholesalers, distributors, manufacturers and retailers through trade groups and government agencies. Similar genetic assays can be developed for any biologically-derived product.

Currently, revenue from SigNature DNA roughly accounts for 75% of total revenue with the balance coming from BioMaterial Genotyping business.

In 2009, Applied DNA discontinued BioActive Ingredients program, which dated back in 2007. The Company developed BioActive Ingredients for personal care products, such as skin care products, based on the biofermentation expertise developed during the manufacturing of DNA for SigNature DNA and BioMaterial Genotyping solutions, and the Company has decided to focus its business on these security and authentication solutions.

Applied DNA Sciences was formerly known as Datalink Systems, Inc. and changed its name to Applied DNA Sciences, Inc. in 2002. The Company was founded in 1983 and is headquartered in Stony Brook, New York. New management assumed responsibility for the Company in July 2005, and has since converted the Company from technology development to sales and marketing.

INVESTMENT THESIS

Products target two large markets

Applied DNA is currently focusing its efforts on the **cash-in-transit business** and the general **anti-counterfeiting** industry.

Cash-in-transit businesses

Cash-in-transit businesses transport and store cash and ATM cassettes. This is a multi-billon dollar market. In the U.K. alone, there is an estimated £500 billion being transported each year, or £1.4 billion per day. The nature of this business makes cash-in-transit an attractive target for criminals. The incidence of cash-in-transit based crime has increased over 170% in London since 2006, according to the Metropolitan Police. As a result, the industry invests in excess of £100 million per year in security equipment and devices. Currently, a system of cash degradation, using a smoke or liquid dye to permanently mark and essentially destroy stolen cash, is used.

Applied DNA uses its proprietary SigNature DNA platform to offer a forensic security solution for banks and institutions operating in the cash-in-transit industry, including automated teller machine (ATM) operations and banknote transportation and storage. The Company can embed SigNature DNA Markers into cash degradation inks that are placed in cash-in-transit boxes. If a cash box is compromised or illegally accessed, the security device discharges the liquid cash degradation dye into the banknotes,

which can be detected after the banknotes are recovered by police. One of the advantages of the SigNature DNA marker is that it's more substantive than dyes and persists even after exhaustive washing with powerful solvents.

Since January 2008, Applied DNA has been engaged with Loomis Group U.K., a cash-handling Company, and Spinnaker International, a cash-in-transit box manufacturer, pursuant to which the Company provides SigNature DNA for use in boxes and authentication and expert witness reports. In July 2009, the Company joined Banknote Watch, a national U.K.-based crime prevention initiative.

Anti-counterfeiting industry

Counterfeiting, product diversion, piracy, forgery and identity theft, create significant and growing problems to companies in a wide range of industries as well as governments and individuals worldwide. The U.S. Chamber of Commerce reported in 2007 that counterfeiting and piracy cost the U.S. economy between $200-$250 billion per year, or an estimated 750,000 American jobs, and pose a real threat to consumer health and safety. The World Customs Organization and Interpol estimate that annual global trade in illegitimate goods was $650 billion in 2007.

Governments are increasingly vulnerable to counterfeiting, terrorism and other security threats at least in part because currencies, identity and security cards and other official documents can be counterfeited with relative ease. Governments must also enforce the various anti-counterfeiting and anti-piracy laws of their respective jurisdictions. Enforcement becomes increasingly difficult with the continued expansion of global trade. Applied DNA's SigNature DNA solution can provide secure, forensic, and cost-effective anti-counterfeiting, anti-piracy and identification solutions to local, state, and federal governments as well as the defense contractors and other companies that do business with them. The Company's SigNature solution can be used for all types of identification and official documents such as passports, Green cards, driver's licenses, social security cards, etc.

The pharmaceutical industry is a particularly attractive target for counterfeit drugs due to higher profit margins. These counterfeit drugs can get into the healthcare system at various stages, posing a serious health threat to patients and a financial burden to insurers, drug makers and distributors. According to the Center for Medicine in the Public Interest, counterfeit drug sales will reach $75 billion globally in 2010. The World Health Organization (WHO) estimated that counterfeits account for more than 10% of the global pharmaceuticals market, and 25% of pharmaceuticals consumed in developing countries and that as much as 50% in some countries, are counterfeit. According to the WHO, counterfeiting can apply to both branded and generic products and may include different types such as wrong ingredients, fake packaging, and insufficient active ingredients. The challenges presented by traditional counterfeiters have recently been supplemented by the many websites, from direct retailers to auction sites that offer counterfeit prescription drugs online. As a result, the pharmaceutical industry and regulators need better technologies to contain counterfeiters in this area. Applied DNA's unique SigNature DNA technology provides a easy-to-use, accurate and cost-effective method to help stem the wave of counterfeit drugs and better track legitimate drugs from manufacturing through the supply chain.

The digital and recording media industry has long been a victim of piracy and counterfeiting. Counterfeit CD, DVDs, videotapes, computer software and other digital and recording media that appears identical to genuine products are sold at substantial discounts by vendors at street and night markets, via mail order catalogs and on the internet at direct retail websites or at auction sites. The Business Software Alliance (BSA) reported that in 2009, the commercial value of unlicensed software put into the market totaled $51.4 billion. The BSA also estimated that 33 percent of software programs in the U.S. are unlicensed and that since January 1, 2000, the BSA has settled with 1,668 companies for a total of $82 million. In a white paper published in May 2010, the BSA and the IDC also reported that they found that for every $100 worth of legitimate software sold, an additional $75 worth of unlicensed software made its way onto the market.

The artworks and collectibles markets are also particularly vulnerable to counterfeiting, forgery and fraud. New works are produced and then passed off as originating from a particular artistic period or source, authentic fragments are pieced together to simulate an original work, and existing works are modified in order to increase their purported value. Such phony artwork and collectibles are then often sold with fake or questionable signatures and "provenance," or documented ownership histories that confirm authenticity.

Counterfeit items are a significant and growing problem with all kinds of consumer packaged goods, especially in the **retail and apparel industries**. According to the World Customs Organization, up to $12 billion worth of clothing and accessories worldwide are fake, and Interpol reported $3 billion worth of fragrances and cosmetics are counterfeit each year. In the United States, $1.29 billion dollars worth of seizures and losses were incurred as a result of counterfeit apparel and other consumer products.

Vintners and purveyors of fine wine are also vulnerable to counterfeiting or product diversion. The Company's SigNature and BioMaterial Genotyping solutions can provide vintners, purveyors of fine wines and organizations within the wine community several benefits:

- Verified authenticity increases potential customers' confidence in the product and their purchase decision;
- For the vintner, the SigNature and BioMaterial Genotyping solutions can strengthen brand support and recognition, and offers the potential for improved marketability and sales;
- SigNature DNA Markers can be embedded in bottles, labels, or both at the winery, and easily authenticated at the location of the wine distributor or auctioneer; BioMaterial Genotyping allows the identification of wine based on the varietals of grape and the region it is grown in.

Counterfeiting can occur in almost every industry and to every product. Applied DNA provides novel, effective, accurate, and easy to use anti-counterfeiting solutions to governments, companies and individuals to protect their tangible and intangible products.

Applied DNA's unique technology has competitive advantages

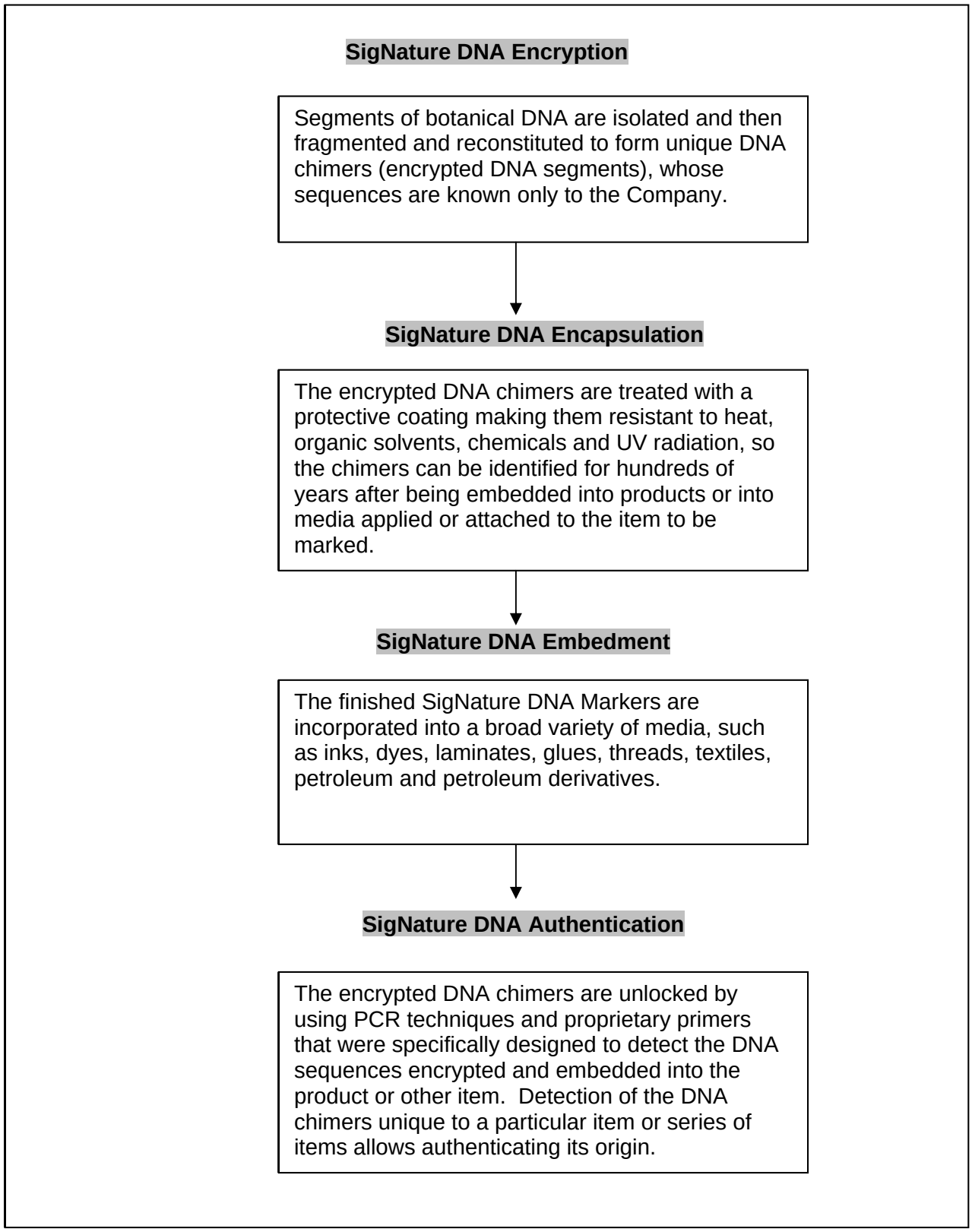
Counterfeiting has become a worldwide problem and as companies in almost every industry begin to address this problem of counterfeiting, this will create huge opportunities for companies engaged in anti-counterfeiting business, such as Applied DNA.

Historically, counterfeiting, product diversion and other types of fraud have been combated by embedding various authentication systems and rare and easily distinguishable materials into products, such as radio frequency identification (RFID) devices and banknote threads in packaging, integrated circuit chips and magnetic strips in automatic teller machine cards, holograms on currency, elemental taggants in explosives, and radioactivity and rare molecules in crude oil. These techniques are effective but have generally been reverse-engineered and are easily replicated by counterfeiters, which limits their utilization as forensic methods for authentication of the sources of products and other items.

However, Applied DNA's principal product SigNature DNA uses a unique **DNA technology** which can not be replicated. Every living organism has a unique DNA code that determines the character and composition of its cells. The core technology of Applied DNA is to use the DNA of everyday plants to mark objects in a unique manner, and then identify these objects by detecting the absence or presence of the DNA.

The Company uses a series of patented technologies to create unique SigNature DNA Markers from plant DNA and apply them to a broad range of products. The process is described in the following figure.

Figure 1: Creation of SigNature DNA Marker



Source: Applied DNA and Zacks Investment Research

We believe the key characteristics and benefits of the SigNature DNA offering are as follows:

- **The SigNature DNA markers are virtually impossible to copy:** The Company uses DNA segments from one or more botanical sources, rearranges them into unique encrypted sequences, and then implement anti-counterfeit techniques. Because the portion of DNA in a SigNature DNA Marker used to identify the marker is so minute, it cannot be detected unless it is amplified. This amplification can only be achieved by applying matching strands of DNA (primer), and polymerase chain reaction (PCR) techniques. The sequence of the relevant DNA in a SigNature DNA Marker must be known in order to manufacture the primer for that DNA. As a result, the effort required to find, amplify, select and clone the relevant DNA in a SigNature DNA Marker would involve such enormous effort and expense that SigNature DNA Markers are virtually impossible to copy.

- **Simple and rapid authentication:** The Company offers rapid readers capable of instantly testing for the presence or absence of any of the SigNature DNA Markers. In addition, when a forensic level of authentication is necessary, the Company offers in-house forensic DNA authentication, that will confirm authentication sequences in approximately 24-48 hours.

- **Low cost and high accuracy: T**he amount of DNA required for each marker is minute. The Company manufactures the identifying segment of DNA to be used in a SigNature DNA Marker by cloning them inside microorganisms such as yeast or bacteria, which are highly productive and inexpensive to grow. As a result, SigNature DNA Markers are relatively inexpensive when compared to other anti-counterfeiting devices. The probability of mistakenly identifying a SigNature DNA Marker is less than 1 in 1 trillion, so the authentication systems are highly accurate, and in fact, the SigNature PCR Kits can authenticate to a forensic level.

- **Easily integrated with other anti-counterfeit technologies:** The Company's SigNature DNA Markers can be embedded onto RFID devices, banknote threads, labels, serial numbers, holograms, and other marking systems using inks, threads and other media. By so doing, poorly resolved platforms can be elevated to a forensic level and those that may be copied (such as holograms, UV and IR markers, RFID's and others) are now rendered uncopiable by the DNA.

- **Broad applicability and ingestible:** The SigNature DNA Markers can be embedded into almost any consumer product, and virtually any other item. For instance, the indelible SigNature DNA Markers are safe to consume and can be used in pharmaceutical drug tablets and capsules. Use of SigNature DNA in ingestible products and drugs may require approval of the U.S. Food and Drug Administration.

The **competitive advantages** of SigNature DNA are summarized below:

Figure 2: SigNature DNA® Out Performs Others

Platform	Forensic Quality	Size of Marker	Scope	Security	Stability	Safety
SigNature DNA	√ Highest	√ large Complex	√ Unlimited Markers	√ Can not be copied	√ Stable and Tested	√ Safe, "Green" Botanical
Non DNA Taggants	x Low to None	x Varies	x Limited Markers	x Can be copied	x can be unstable	x Varies

Source: Applied DNA and Zacks Investment Research

Applied DNA Sciences is the only company that offers botanical DNA-based anti-counterfeiting solutions. Synthetic DNA is also used by other companies, but we believe Applied DNA's botanical DNA has many advantages over synthetic DNA.

- Botanical DNA is double stranded vs synthetic DNA which is typically single stranded; Single stranded DNA is less stable
- Botanical DNA is more complex making it harder to duplicate than synthetic DNA
- Synthetic DNA has shorter sequences, limited size and requires sequencing for authentication. Sequencing is more prone to contamination than genotyping which is what Applied DNA uses to detect DNA.

Broad applicability of products and services

The Company's **SigNature DNA** offering is as broadly applicable, convenient and inexpensive as existing authentication systems, while highly resistant to reverse-engineering or replication, so that it can either be applied independently or supplement existing systems in order to allow for a forensic level of authentication of the sources of a broad range of items, such as artwork and collectibles, fine wine, consumer products, digital and recording media, pharmaceuticals, financial instruments, identity cards and official documents.

The SigNature DNA solution consists of three steps: creating and encapsulating a specific encrypted DNA segment, applying it to a product or other item, and detecting the presence or absence of the specific segment. The first two steps are controlled exclusively by Applied DNA and its certified agents ensure the security of SigNature DNA Markers. Once applied, the presence of any of the SigNature DNA Markers can be detected by either Applied DNA or a customer in a simple spot test, or a sample taken from the product or other item can be analyzed forensically to obtain definitive proof of the presence or absence of a specific type of SigNature DNA Marker.

The SigNature DNA Markers may be directly embedded in products or other items, or otherwise attached by embedding them into media that is incorporated in or attached to the product or item. For example, the SigNature DNA Markers can be directly embedded in paper, metal, plastics, stone, ceramic, and other materials. The SigNature DNA Marker can be embedded in different media such as ink, adhesive, varnish, and thermal transfer ribbon to form a ready to use product.

SigNature DNA Ink: The Company's SigNature DNA Ink can be applied directly or on a label that is then affixed to the product or item. SigNature DNA Ink is highly durable and degradation resistant. SigNature DNA Ink can be visible (colored) or invisible. This makes it possible to mark products with a visible (overt), and/or invisible (covert) SigNature DNA Marker on any tangible surface such as a label. The location of covert Signature DNA Markers on a product are recorded and stored in a secure database. Similar media like varnish and paints can also be used instead of ink. Sporting event tickets have been prototyped using the SigNature DNA Ink. In addition, the SigNature DNA Ink is being tested in government documents, auto parts, luxury goods and consumer products. Other examples of where the SigNature DNA Inks can be used include: artwork and collectibles, corporate documents, financial instruments, retail items such as event tickets, clothing labels, pharmaceuticals, and other miscellaneous items such as lottery tickets, inspection stamps etc.

Applied DNA also developed a portfolio of SigNature DNA containing **thermal transfer ribbons**. These products will allow retailers to protect at the point-of-sale by printing price labels, hang tags, event tickets and even credentials with customized SigNature markers. The Company is also able to mark cartridges of laser printers with SigNature DNA.

Cashield™ Security Inks: In collaboration with its Swiss partner, Printcolor Screen AG, Applied DNA recently launched Cashield, a new cash degradation ink, which can be used to provide a better performing, and safer alternative to permanently staining banknotes stolen from cash-handling or ATM systems.

First conceptualized to facilitate the penetration of the Company's SigNature DNA into piles of cash, Cashield yields a non-removable stain that allows police and officials to identify stolen cash. When present in Cashield, SigNature DNA allows the police to track the stolen cash to a specific robbery. The solvent system used in Cashield is safe, non-reactive and provides a stable environment for the colorants and for DNA markers. Studies in the lab and field show that Cashield does not interfere with the polymerization of cyanoacrylate glues, from which DNA is readily recovered.

It has been certified for use in the EU by Laboratoire National de Métrologie et d'Essais (LNE) and independently validated by the University of Leeds as "best-in-industry." Cashield's performance clearly leaving visible stains after various solvent immersion tests, much stronger than the stains retained by other commercially available staining fluids. Cashield is now available in six colors including Red, Violet, Green, Teal, Indigo and the original AzSure blue.

SigNature DNA Thread: Applied DNA's SigNature DNA Thread, which can consist of any fabric from cotton to wool, is embedded with SigNature DNA Markers and can be used to mark and authenticate products and other items incorporating textiles. For example, SigNature DNA Thread can be incorporated in a finished garment, bag, purse, shoe or other product or item. SigNature DNA Thread can help textile vendors, clothing and accessory manufacturers and governments authenticate thread, yarn and fabric at any stage in the supply chain. The SigNature DNA Markers can also be embedded into raw cotton fiber before manufacture of a finished cotton textile product (e.g., a t-shirt) and authenticate a finished cotton product. The Company is currently working with the Textile Centre of Excellence consortium of companies (Leeds, UK) to demonstrate how the SigNature DNA can be used to authenticate textiles at all points of the supply chain through to the end user. In addition, the Company is working to demonstrate the integration of SigNature DNA with existing manufacturing processes to produce threads, labels and fabrics manufactured by Yorkshire-based companies.

Applied DNA has recently introduced two new product lines that utilize its SigNature DNA technology. The first, **DNANET** is a tactical forensic system providing unique DNA codes for covert operations that require absolute proof of authentication. DNANET products are designed to coat the surface of products with an invisible solution that can be used to provide forensic quality evidence. DNANET products are available in two basic formats depending on the purpose of the covert operation – either Permanent Tactical Marker spray or Transferable Tactical Marker spray or grease.

DNANET is suitable for a range of surfaces such as paper, metals, wood, laminates, glass, UPVC, plastics, masonry and cabling. For special operations, Applied DNA can also create unique DNA codes to mark security inks, thermal transfer ribbons, laser toners, adhesives, and other carriers that can be used to print time-date sensitive or confidential documents.

The second platform, **RapiDNA™,** a DNA Magneto-Optical security system that delivers fast, machine-readable verification, combined with forensic DNA fingerprints. Unique and tamper-evident, the proprietary DNA-Magneto-Optical Fingerprinting system will provide forensic proof of originality while allowing detailed logistic control. The "fingerprints" can be instantly read by scanners and are stored on a secure server. Reading can be done virtually anywhere in the world by communicating back to remote database using a mobile phone or personal computer. Unlike conventional systems, the database allows scanners and labels to be deactivated if they are stolen or lost. Beyond provenance and authenticity, the RapiDNA system functions in logistics, inventory and enterprise resource planning systems.

Other Security Devices: SigNature DNA Markers can also be embedded onto printed barcodes, RFID tags, optical memory strips, holograms, tamper proof labels and other security devices incorporated into products and other items for various security-related purposes.

Cumulatively, over 1 billion products have been marked with SigNature DNA. SigNature DNA is recognized as the only platform funded by the EU in its UK anti-counterfeit program in collaboration with the Textile Center of Excellence. The false positive rate for SigNature DNA is only one in trillions, making it an excellent forensic tool. SigNature DNA can withstand aggressive solvents.

Applied DNA offers a full range of detection options from instant rapid screening to more detailed forensic level authentication:

Level 1 "Spot Test" Detection: Applied DNA offers rapid readers capable of instantly testing for the presence or absence of any of SigNature DNA Markers.

Level 2 Forensic DNA Authentication: When a forensic level of authentication is necessary, the Company offers in-field or in-house forensic DNA authentication with a handheld battery powered PCR-based device that will confirm authentication sequences in approximately 24-48 hours.

Applied DNA also offers **BioMaterial Genotyping** services. BioMaterial Genotyping solution offers a unique means for determining the authenticity of biomaterials, such as cotton, wool, tobacco, fermented beverages, natural drugs and foods. Just as a person's DNA specifies all of their unique qualities, biomaterials typically contain genomic DNA or fragments thereof that can be utilized to authenticate originality.

The Company initially developed two proprietary **genetic-based assays** and protocols to identify DNA markers that are endogenous (internal) to a particular product in order to differentiate between biological strains. **Fibertyping™** is able to differentiate between Pima cotton (G. barbadense) and upland cotton (G. hirsutum). The FiberTyping offering enables customers and potential clients to cost-effectively give assurance to manufacturers, suppliers, distributors, retailers and end-users that their products are authentic, that they are made from the fibers and textiles as labeled. The process of **Pimatyping™** is able to differentiate between Pima cotton grown in different regions of the world. Cotton classification and the authentication of cotton geographic origin are issues of global significance, important to brand owners and to governments that must regulate international cotton trade. Similar offerings are currently being developed for use in biomaterials other than cotton. Biomaterials can now be tracked from field to final purchase guaranteeing the authenticity of the item.

Applied DNA has begun offering its products and services in Europe, the United States and Asia. We believe the Company's new DNA extraction protocol and methodologies are more effective than existing forensic systems. The **combination of the SigNature DNA and BioMaterial Genotyping** solutions covers the total authentication market, is applicable to multiple industry verticals, and can mark physical products on the front end and authenticate forensic DNA sequences on the back end.

A clear growth strategy is in place

Applied DNA has begun to generate revenues principally from sales of SigNature DNA and BioMaterial Genotyping offerings. The Company is implementing a series of strategy to expand its product offering and penetrate new markets.

One of the strategies to expand its product offering is to customize and refine solutions to meet potential customers' needs. The Company is continuously attempting to improve its SigNature DNA solution by testing the incorporation of SigNature DNA Markers into different media, such as newly configured labels, inks or packaging elements, for use in new applications. Each prospective customer has specific needs and employs varying levels of existing security technologies with which SigNature DNA must be integrated. The ultimate goal is to develop a secure and cost-effective system for each potential customer that can be incorporated into that potential customer's products or items themselves or their packaging so that they can, for instance, be tracked throughout the entire supply chain and distribution system.

The Company is also continuing to enhance detection technologies for authentication of its SigNature DNA Markers. The Company has also identified and is further examining opportunities to collaborate with companies and universities to develop a new line of detection technologies that will provide faster and more convenient ways to authenticate its SigNature DNA Markers.

At the front of market penetration and new market identification, Applied DNA is taking measures to target potential high-volume markets. The Company will continue to focus its efforts on target vertical markets that are characterized by a high level of vulnerability to counterfeiting, product diversion, piracy, fraud, identity theft, and unauthorized intrusion into physical locations and databases. Currently, the Company's target markets include art and collectibles, cash-in-transit, fine wine, consumer products, digital and recording media, pharmaceuticals, textile and apparel authentication and secure documents/homeland security. Once these markets have been significantly penetrated, Applied DNA intends to expand into additional related high volume markets.

If deemed appropriate, the Company also intends to pursue strategic acquisitions. These acquisitions should strengthen and complement the Company's core technologies, improve its competitive positioning, allow it to penetrate new markets, and grow its customer base. The Company also intends to work in collaboration with potential strategic partners in order to continue to market and sell new product lines derived from, but not limited to, DNA technology.

With respect to international expansion, in addition to its customers in the UK, the Company is working with Safe Solution to market its product and technology in Scandinavia and has already done some work with the Swedish police. The Company is also partnered with Printcolor who has offices in Switzerland and Germany to sell security inks in Europe, including the recently launched Cashield. The Company also has signed a contract with an international printing company with headquarters in Asia and preliminary work has begun.

We believe Applied DNA is heading into the right direction. If executed correctly, these strategies will strengthen the Company's leadership position in the anti-counterfeiting industry and will ultimately boost the Company's top line and bottom line in the coming years in our view.

Strong intellectual properties

Applied DNA has strong intellectual properties (IP) covering all aspects of its technologies. Currently, the Company holds 14 patents, 13 provisional patents, 8 patents pending, 6 registered trademarks, and 5 registered trademarks pending. We think these IP, combined with its trade secrets, copyrights and other intellectual property rights, are important assets for the Company which will sustain its competitive advantages and will provide long term growth for its business.

Experienced management team

Dr. James A. Hayward is Chairman, President and CEO. He has over 20 years of experience in the biotechnology, pharmaceutical, life science and consumer product industries. He was one of the founding principals and research director of Europe's first liposome Company, Biocompatibles Ltd. From 1984 to 1989, he was responsible for product development at Esteé Lauder Companies, where he served as director of research worldwide. Between 1990 and July 2004, Dr. Hayward was the Chairman, President and CEO of The Collaborative Group, Ltd., a provider of products and services to the biotechnology, pharmaceutical and consumer-product industries based in Stony Brook, New York. Since 2000, Dr. Hayward has been a General Partner of Double D Venture Fund, a venture capital firm based in New York, New York.

Dr. Hayward received his Bachelor's degree in Biology and Chemistry from the State University of New York at Oneonta in 1976, his Ph.D. in Molecular Biology from the State University of New York at Stony Brook in 1983, and an honorary Doctor of Science from Stony Brook in 2000. He also serves on the boards of the Stony Brook Foundation, the Research Foundation of the State of New York, Long Island Life Sciences Initiative and the Ward Melville Heritage Foundation.

Kurt H. Jensen is the Chief Financial Officer. He has more than 20 years of experience in finance and accounting, and was previously employed by Point of Woods Homes. Mr. Jensen was awarded a M.Sc. in Economics and Business Administration from the Copenhagen Business School in 1983.

Ming-Hwa Benjamin Liang is Corporate Secretary and Strategic Technology Development Officer. Between May 1999 and September 2005, Dr. Liang was the director of research and development at Biowell Technology Inc. Dr. Liang received a B.S. in Bio-Agriculture from Colorado State University in 1989, a M.S. in Horticulture from the University of Missouri at Columbia in 1991, his Ph.D. in Plant Science from the University of Missouri at Columbia in 1997 and his LL.M. in Intellectual Property Law from Shih Hsin University, Taiwan in 2004.

RECOMMENDATION AND VALUATION

We are initiating coverage of Applied DNA with an Outperform rating. Our six to twelve-month price target is $0.20.

Our call is based on the strong fundamentals of the Company. Applied DNA operates in the rather large anti-counterfeiting and authentication market. The Company's technology is unique and has competitive advantages over its peers.

We are optimistic about the Company's prospect. With an ever growing anti-counterfeiting business worldwide, combined with its unique technology and broad range of product offering, the Company is well positioned to boost both its top line and bottom line in the coming years. According to our long term financial model, the Company's revenue will grow at a huge compound annual growth rate (CAGR) of 105% in the next five fiscal years from 2010 to 2015. The Company will become profitable in fiscal 2014 with earnings per share (EPS) of $0.01.

Currently, the Company trades around $0.03 per share with a market cap of $9 million. We believe this undervalues the Company based on the strong fundamentals. We understand that market discounts the value of the Company because the Company has only limited revenue base and has been losing money since its inception. We also understand that the Company has a weak balance sheet and further financing is needed very soon. However, when we look at the Company and the industry in which the Company operates in more detail, we realize that this is a Company with huge opportunity and can grow its revenue and earnings at a tremendous rate in the next a few years.

We think the Company should trade around a P/E of 15x, which is only half of the average P/E multiple of the biotech industry. If we apply this P/E to our estimated EPS of $0.04 in fiscal 2015, discounted at 30% for 4 years, we get our price target of $0.20 per share. As long as the Company can execute its growth strategy correctly, we believe this goal is achievable.

Industry Comparables

	P/E (ttm)	EPS Gr. 5Yr Est.	P/S (ttm)
Applied DNA Sciences (APDN)	N/A	N/A	37.0 x
Biotech Mean	32.3 x	12.3%	7.7 x
S&P 500	17.3 x	7.1%	2.0 x
InkSure Technologies Inc. (INKS)	1.08 x	N/A	3.6 x
AuthenTec, Inc. (AUTH)	N/A	N/A	1.6 x
L-1 Identity Solutions (ID)	N/A	N/A	1.2 x
Intelli-Check - Mobilisa, Inc. (IDN)	N/A	N/A	2.9 x

RISKS

Cash position is our chief concern

Since its inception, Applied DNA has been losing money and has had negative operating cash flow. During the nine month period ended June 30, 2010, the Company incurred a net loss of $5.8 million, and generated a net cash flow deficit of $1.53 million. We expect the Company will continue to lose money in the near future. According to our financial model, we estimate the Company will lose $2.2 million in fiscal fourth quarter. Total net loss for fiscal 2010 ending September 30, 2010 will be $8.0 million. Additionally, the Company has a negative working capital of $2.7 million as of June 30, 2010.

As of June 30, 2010, the Company had $21,566 in cash and cash equivalents. At the same time, there is a balance of $2.30 million convertible notes sitting on its balance sheet with $1.65 million due in one year.

On July 15, 2010, the Company entered into a Securities Purchase Agreement with the purchasers. Pursuant to the agreement, the Company issued and sold to the Purchasers an aggregate of $1,100,000 in principal amount of senior secured convertible notes bearing interest at a rate of 10% per annum. The Notes are due and payable in full on July 15, 2011. The Notes are convertible, in whole or in part, at any time, at the Purchasers option, into either common shares or securities issued in any Subsequent Financing.

Current level of cash can only last through October 2010 and further financing is required within the next a few months. The Company has entered into an engagement letter with an investment bank to pursue additional financing through the sale of equity or debt securities.

We remind investors that any equity or convertible note financing will dilute the Company's current shareholder base and reduce its per share value. Actually, we have noticed that the Company's shares outstanding have increased dramatically from 135 million in fiscal 2007 to 301 million at the end of June, 2010. And we expect this trend will continue in the next few years when the Company continues to issue new shares or new convertible notes to fund its operations.

Competition is fierce in the anti-counterfeiting market

The booming counterfeiting market has long attracted many players. As more and more companies in almost every industry begin to address the problem of counterfeiting, we expect that different systems will compete to be the leading standards by which products can be tracked across world markets.

The Company competes with many existing companies. Major competitors in the anti-counterfeiting and fraud prevention markets include: American Bank Noble Holographics, Inc., Applied Optical Technologies, Authentix, ChemTAG, Collectors Universe Inc., Collotype, Data Dot Technology, De La Rue Plc., Digimarc Corp., DNA Technologies, Inc., ID Global, Informium AG, Inksure Technologies, Kodak, L-1 Identity Solutions, Manakoa, Media Sec Technologies, November AG, opSec Security Group plc, SmartWater Technology, Inc., Sun Chemical Corp, Tracetag, Prooflag SAS and Warnex.

We believe new competitors will continue to enter the market. Although the Company's technology has competitive advantages over its existing competitors, new technology with more compelling features may enter into this market in the future. If the Company can't keep its technology competitive, revenue may decline and share price will suffer.

PROJECTED INCOME STATEMENT

$ in million except per share data	Sep/08A	Sep/09A	Q1	Q2	Q3	Q4	Sep/10E	Sep/11E	Sep/12E	Sep/13E	Sep/14E	Sep/15E
Total Revenues	**$0.87**	**$0.30**	**$0.07**	**$0.19**	**$0.17**	**$0.25**	**$0.68**	**$2.00**	**$4.50**	**$8.50**	**$15.00**	**$24.50**
YOY Growth	*616.1%*	*-66.2%*	*-50.4%*	*189.6%*	*642.4%*	*309.9%*	*130.4%*	*194.0%*	*125.0%*	*88.9%*	*76.5%*	*63.3%*
CoGS	0.17	0.06	0.01	0.01	0.02	0.03	0.08	0.23	0.51	0.53	0.94	1.53
Gross Income	**0.70**	**0.23**	**0.06**	**0.17**	**0.15**	**0.22**	**0.60**	**1.77**	**3.99**	**7.97**	**14.06**	**22.97**
Gross Margin	*80.4%*	*79.3%*	*80.1%*	*92.5%*	*88.4%*	*88.4%*	*88.7%*	*88.7%*	*88.7%*	*93.8%*	*93.8%*	*93.8%*
SG&A	$4.3	$6.6	$1.5	$1.3	$2.5	$2.1	$7.4	$7.2	$7.8	$8.0	$8.5	$9.5
% SG&A	*489.9%*	*2228.1%*	*2120.8%*	*674.3%*	*1474.8%*	*840.0%*	*1090.2%*	*360.0%*	*173.3%*	*94.1%*	*56.7%*	*38.8%*
R&D	$0.15	$0.14	$0.01	$0.02	$0.02	$0.05	$0.09	$0.15	$0.18	$0.20	$0.22	$0.25
% R&D	*16.7%*	*45.9%*	*8.5%*	*11.0%*	*10.7%*	*20.0%*	*14.0%*	*7.5%*	*4.0%*	*2.4%*	*1.5%*	*1.0%*
Other	$0.4	$0.4	$0.1	$0.1	$0.1	$0.1	$0.4	$0.4	$0.4	$0.4	$0.4	$0.3
% Other	*49.8%*	*141.7%*	*128.5%*	*49.3%*	*54.5%*	*36.8%*	*54.5%*	*20.0%*	*8.9%*	*4.7%*	*2.7%*	*1.2%*
Operating Income	**($4.2)**	**($6.9)**	**($1.6)**	**($1.2)**	**($2.5)**	**($2.0)**	**($7.3)**	**($6.0)**	**($4.4)**	**($0.6)**	**$4.9**	**$12.9**
Operating Margin	*-476.0%*	*-2336.4%*	*-2177.6%*	*-642.2%*	*-1451.6%*	*-808.4%*	*-1069.9%*	*-298.8%*	*-97.5%*	*-7.4%*	*33.0%*	*52.7%*
Other Net	($2.6)	$10.8	($0.2)	($0.2)	($0.1)	($0.2)	($0.7)	($0.8)	($0.8)	($1.0)	($1.0)	($1.0)
Pre-Tax Income	**($6.8)**	**$3.9**	**($1.8)**	**($1.4)**	**($2.6)**	**($2.2)**	**($8.0)**	**($6.7)**	**($5.2)**	**($1.6)**	**$3.9**	**$11.9**
Income taxes(benefit)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Tax Rate	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Reported Net Income	**($6.8)**	**$3.9**	**($1.8)**	**($1.4)**	**($2.6)**	**($2.2)**	**($8.0)**	**($6.7)**	**($5.2)**	**($1.6)**	**$3.9**	**$11.9**
YOY Growth	-	-	-	-	-	-	-	-	-	*-68.6%*	*-342.0%*	*202.2%*
Net Margin	*-779.2%*	*1336.4%*	*-2486.1%*	*-741.8%*	*-1525.9%*	*-882.4%*	*-1176.1%*	*-336.3%*	*-115.3%*	*-19.2%*	*26.3%*	*48.7%*
Shares Out	*$191.5*	*308.9*	*275.2*	*285.7*	*301.4*	*293.0*	*288.8*	*295.0*	*298.0*	*303.0*	*308.0*	*312.0*
Reported EPS	**($0.04)**	**$0.01**	**($0.01)**	**($0.00)**	**($0.01)**	**($0.01)**	**($0.03)**	**($0.02)**	**($0.02)**	**($0.01)**	**$0.01**	**$0.04**
YOY Growth	-	-	-	-	-	-	-	-	-	*-69.1%*	*-338.1%*	*198.4%*
One time charge	*$0.00*	*-$12.02*	$0.00	*$0.00*	*$0.00*	*$0.00*	$0.00	*$0.00*	*$0.00*	*$0.00*	*$0.00*	*$0.00*
Non GAAP Net Income	**($6.8)**	**($8.1)**	**($1.8)**	**($1.4)**	**($2.6)**	**($2.2)**	**($8.0)**	**($6.7)**	**($5.2)**	**($1.6)**	**$3.9**	**$11.9**
Non GAAP EPS	**($0.04)**	**($0.03)**	**($0.01)**	**($0.00)**	**($0.01)**	**($0.01)**	**($0.03)**	**($0.02)**	**($0.02)**	**($0.01)**	**$0.01**	**$0.04**

Source: Company filing and Zacks Investment Research estimates

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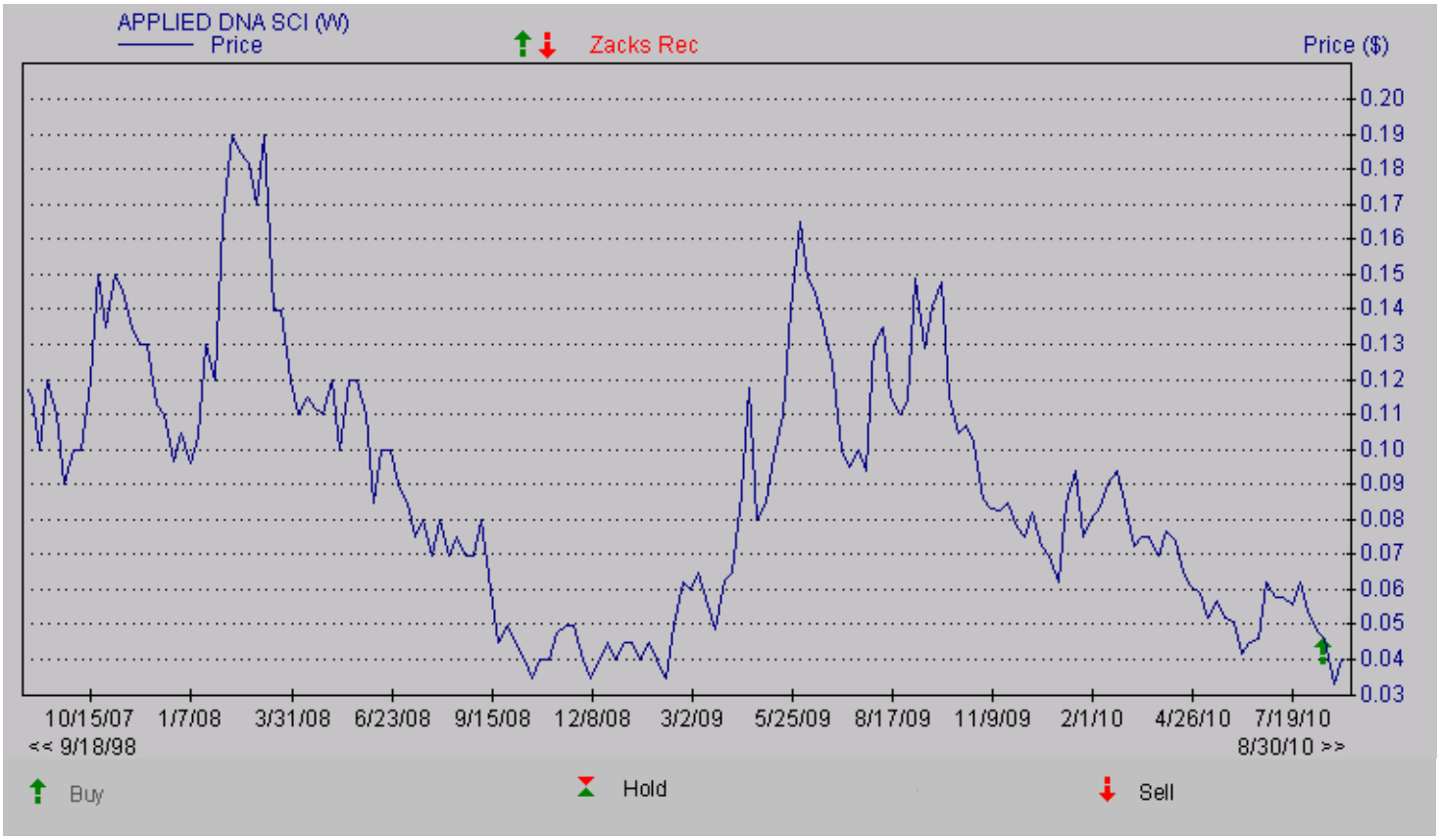
HISTORICAL ZACKS RECOMMENDATIONS



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