INVESTMENT CASE:
Virtus LifeSci Biotechnology Clinical Trials ETF
Virtus LifeSci Biotechnology Products ETF

BBC
BBP

Two Unique Ways to Play Biotech via Specialized ETFs

Biotech Basics

Biotechnology is one of the highest growth sectors in today's global economy and is entering a golden age for novel drug discovery. The field has matured dramatically since the formation in the 1980s of the industry's pioneers, which included Genentech, Amgen, and Biogen. Numerous nimble biotechnology companies are formed every month seeking cures to unmet medical needs such as cancers, viral infections, inherited genetic disorders, and cardiovascular conditions. Advances in genetic sequencing and manipulation, high throughput screening, protein manufacturing, and AI-based drug design have led to more precise treatments with greater efficacy and fewer side effects. And, therapies are moving more quickly than ever before from scientific concept to marketed drugs. Investors may be rewarded from strong clinical trial results, quarterly sales trends, as well as acquisitions by large pharmaceutical companies.

Index-Based Biotech Investing

Single-stock biotechnology investing can be challenging due to the high volatility around binary events such as clinical trial results and FDA decisions. Institutional and retail investors are often scared off by the perception of risk related to individual company events. Picking winners and avoiding losers is notoriously difficult in biotech, as is timing this dynamic market. However, investors who want to participate in the high growth potential of biotech can gain diversified exposure through liquid, transparent, and tax efficient exchange-traded funds (ETFs). Investors have the opportunity to gain broad exposure to biotech without taking on the risk of focusing their investments too narrowly when the stakes can be extremely high, while at the same time, managing the potential tax consequences of their portfolios.

Is Now a Good Time?

The outlook for biotech investing is extremely bright. The COVID-19 pandemic has put innovative biotechnology companies in the spotlight as the most dynamic and nimble movers in creating cures and vaccines against the SARS-CoV-2 virus, as well as future threats to global health. This has created one of the most benign political environments and election years in recent history, as drug pricing pressures and healthcare reforms are largely off the table for debate. In addition, sales of healthcare products including drugs and devices have been relatively insulated from the economic downturn affecting other sectors. Large pharma companies continue to acquire, relying on smaller biotechnology companies to feed future sales growth, and the biotechnology IPO calendar is robust with strong appetite from investors for new public stocks.

BBC

The Virtus LifeSci Biotechnology Clinical Trials ETF (NYSE Arca: BBC) seeks to track the LifeSci Biotechnology Clinical Trials Index. It strives to offer investors exposure to a select group of biotechnology companies with a principal focus on running human clinical trials, as opposed to sales of approved and marketed products.

BBP

The Virtus LifeSci Biotechnology Products ETF (NYSE Arca: BBP) seeks to track the LifeSci Biotechnology Products Index. It strives to offer investors exposure to a select group of constituent biotechnology companies with one or more drugs approved by the FDA and in commercial production.

Understanding BBC

What are biotechnology clinical trials, and why are they important?

In their search for innovative drugs, biotechnology trials companies conduct clinical human trials in the hopes of eventually gaining approval. Every approved drug that is administered to patients for a wide array of medical disorders began as a “lead compound,” a molecule, or therapy that showed promise in treating a disease. But, the path from clinical trials to FDA approval and production is a long one. On average, it takes more than 10 years for a drug to go from the experimental stage, through human trials, approval, and into production. The development process is challenging: just 3% of lead compounds clear all the hurdles to enter the market, and that process takes nearly 14 years on average. In addition, this process is expensive, often costing more than $1 billion for a single drug to become commercial, requiring a constant focus on financing via partnerships, licensing deals, corporate financings, and sometimes mergers and acquisitions.

Clinical trial stage biotech firms are important because they work at the cutting edge of experimental biotechnology—taking risks, testing out innovative approaches and novel compounds that, if approved, could one day become blockbuster drugs.

Understanding BBP

What are biotechnology products, and why are they important?

Biotechnology product companies have developed at least one drug that has been approved by the FDA and has gone into commercial production. Although the path from clinical trials to FDA approval can be difficult, the drugs developed by these companies have demonstrated themselves to be safe and effective treatments for disease.

Whereas clinical trials stage companies are primarily focused on research and development, product stage companies devote more of their energies toward sales and marketing, attempting to raise awareness of their new products. Product stage companies may also be attractive acquisition targets by large pharmaceutical companies looking to enhance their revenue growth.

Pure, Targeted Exposure

We believe that pure biotech exposure has the potential to generate the highest returns over the long term. In order to achieve pure targeted exposure, BBC and BBP exclude companies such as generic and specialty pharmaceuticals, life science tools, and medical device manufacturers. Such firms are frequently included in biotech ETFs, but are actually “related biotech industries” and do not share the same financial and investment characteristics of pure biotechnology companies. As such, BBC and BBP offer pure, targeted exposure:

BBC

Investors gain pure exposure to a crucial segment of the biotechnology sector: companies with promising drugs that are in clinical human trials but have not yet been approved by the FDA or gone into production.

BBP

Investors gain pure exposure to a crucial segment of the biotechnology sector: companies with drugs that have been FDA approved and are in commercial production.

No other ETF on the market allows investors to target their biotech exposure with these critical distinctions

How are biotechnology clinical trials companies and products companies different?

Clinical Trials Companies

> No product sales; focused on success of clinical trials
> Major binary event risk (trial results, FDA)
> Managing cash burn rate and equity financing strategy
> Typically smaller market-cap companies
> Higher-volatility stocks

Product Companies

> Focused on driving sales ramp
> Less significant binary event risk
> Cash flow positive, or expected in near term
> Typically larger market-cap companies
> Lower-volatility stocks

Most other biotechnology indexes and ETFs include exposure to these other sectors:

		Lifesci Biotech Indexes		Other Biotech Indexes
	Company Type	BBC	BBP	
Pure Biotech	Clinical Trials	✓	No	✓
	Products	No	✓	✓
Biotech Related	Generic & Specialty Pharma	No	No	✓
	Life Science Tools	No	No	Maybe
	Medical Device and Diagnostics	No	No	Maybe
	Other Healthcare Companies	No	No	Maybe

> **Generic & Specialty Pharmaceuticals** – Lower innovation pharmaceutical companies which typically repurpose generic drugs into new formulations or drug delivery mechanisms or combine multiple drugs. These companies typically rely on loopholes in the FDA approval process to extend patents on older drugs; on novel pricing and reimbursement schemes; and generally spend very little on R&D. Examples of companies include Mylan, Valeant Pharmaceuticals/ Bausch Health, and Endo International.

> **Life Science Tools** – Companies that manufacture and sell the reagents and equipment used by laboratories and researchers, such as advanced microscopy equipment and tissue/media for experiments. These companies generally grow at the rate of scientific research spending, but are different from biotechnology companies developing breakthrough drugs. Examples include Illumina, ThermoFisher Scientific, and Agilent Technologies.

> **Diagnostics** – Companies that offer equipment and services for testing of disease, conditions, and blood chemistry. These companies are generally lower growth than biotechnology companies, but have historically offered stable growth over time as a result of increased demand for testing from the aging global population. Examples include CareDx, Cepheid, Exact Sciences, and Foundation Medicines.

> **Medical Devices** – These companies are governed by the device division of the FDA, rather the drug division as biotechnology and pharmaceutical companies are governed. Medical device companies manufacture physical devices such as spinal implants, cardiovascular stents and respirator equipment rather than pills/injectable treatments. Examples include Novocure, Cerus, Cardiovascular Systems and MiMedx.

Equal Weighting

The equal weighting approach of BBC and BBP allows each security's performance to affect the ETF equally, regardless of the size of the company. In this way, a relatively small firm enjoying a major breakthrough can have a meaningful impact on the ETF. An equal weighting also serves to minimize the outsize impact that a handful of mega-cap biotech companies can have on more traditional, market-cap weighted indexes.

Constituent Selection

Potential ETF constituents are first screened for market capitalization: a minimum market cap $250 million (BBC) and $500 million (BBP) is required for inclusion, and demonstrates institutional backing. Potential constituents are further screened for liquidity, and, for example, must have a minimum average daily volume of $1 million, ensuring that the security can be easily bought and sold on the open market.

Experienced Biotechnology Investment Professionals

BBC and BBP have been structured from the ground up by a seasoned team of experts to provide previously unavailable, highly targeted exposure to both clinical trials stage and product stage biotechnology companies. Headed by scientists with Ph.D.s in organic chemistry, molecular biology, and medicinal chemistry, as well as investment professionals with decades of experience in the health care sectors, LifeSci Index Partners has brought its unique insight to bear on the biotech investment space through Virtus ETFs.

About LifeSci Index Partners, LLC

LifeSci Index Partners, LLC is a New York-based index provider of healthcare-based stock market indices and is part of LifeSci Partners, a leading global healthcare consultancy with more than 170 employees including 35+ PhDs and MDs. The LifeSci team is comprised of investment professionals with experience in biotechnology equity research, in organic chemistry research in academia, and at pharmaceutical and biotechnology companies. LifeSci Index Partners, LLC is the index provider to the Fund.

VIRTUS ETFs

For more information, contact us at 1-800-243-4361 or visit www.virtus.com.

IMPORTANT RISK CONSIDERATIONS

Exchange-Traded Funds (ETF): The value of an ETF may be more volatile than the underlying portfolio of securities it is designed to track. The costs of owning the ETF may exceed the cost of investing directly in the underlying securities. **Equity Securities:** The market price of equity securities may be adversely affected by financial market, industry, or issuer-specific events. Focus on a particular style or on small or medium-sized companies may enhance that risk. **Industry/ Sector Concentration:** A fund that focuses its investments in a particular industry or sector will be more sensitive to conditions that affect that industry or sector than a non-concentrated fund. **Passive Strategy/Index Risk:** A passive investment strategy seeking to track the performance of the underlying Index may result in the fund holding securities regardless of market conditions or their current or projected performance. This could cause the fund's returns to be lower than if the fund employed an active strategy. **Correlation to Index:** The performance of the fund and its index may vary somewhat due to factors such as fund flows, transaction costs, and timing differences associated with additions to and deletions from its index. **Market Price/NAV:** At the time of purchase and/or sale, an investor's shares may have a market price that is above or below the fund's NAV, which may increase the investor's risk of loss. **Market Volatility:** Local, regional or global events such as war, acts of terrorism, the spread of infectious illness or other public health issue, recessions, or other events could have a significant impact on the fund and its investments, including hampering the ability of the fund's portfolio manager(s) to invest the fund's assets as intended. **Prospectus:** For additional information on risks, please see the fund's prospectus.

The **LifeSci Biotechnology Clinical Trials Index** is designed to track the performance of U.S.-listed biotechnology stocks with a lead drug in the clinical trial stage of development, typically a Phase 1, Phase 2 or Phase 3 trial, but prior to receiving marketing approval. The **LifeSci Biotechnology Products Index** is designed to track the performance of U.S.-listed biotechnology stocks with at least one drug therapy approved by the U.S. Food and Drug Administration for marketing. The indices are unmanaged, their returns do not reflect any fees, expenses, or sales charges, and are not available for direct investment.

The Funds are exchange-traded funds ("ETF"). The "net asset value" (NAV) of the Fund is determined at the close of each business day, and represents the dollar value of one share of the Fund; it is calculated by taking the total assets of the Fund, subtracting total liabilities, and dividing by the total number of shares outstanding. The NAV of the Fund is not necessarily the same as its intraday trading value. Fund investors should not expect to buy or sell shares at NAV because shares of ETFs such as the Fund are bought and sold at market price (not NAV) and are not individually redeemed from the Fund. Thus, shares may trade at a premium or discount to their NAV in the secondary market. Brokerage commissions will reduce returns. NAV returns are calculated using the Fund's daily 4:00 pm NAV, and include the reinvestment of all dividends and other distributions (reinvested at the Fund's NAV on distribution ex-date). Market price returns are calculated using the 4:00 pm midpoint between the bid and offer, and include the reinvestment of all dividends and other distributions (reinvested at the 4:00 pm bid/offer midpoint on distribution ex-date). Market price returns do not represent the return you would receive if you traded at other times.

Please consider a Fund's investment objectives, risks, charges, and expenses carefully before investing. For this and other information about any Virtus Fund, contact your financial representative, call 800-243-4361, or visit virtus.com for a prospectus or summary prospectus. Read it carefully before investing.

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