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Information about the index, including rule book, company description and historic data, can be found at:  
[www.poliwoggindexes.com](http://www.poliwoggindexes.com)

TICKERS:

Poliwogg Healthcare Innovation Index: PHIX

Poliwogg Healthcare Innovation Total Return Index: PHIXTR

December 2017

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Q3 2017 Review: Poliwogg Healthcare Innovation Total Return Index

**Index Performance.** The Poliwogg Healthcare Innovation Total Return Index (TICKER: PHIXTR) increased +10.75% from 2078.23 to 2301.61 in the quarter ended December 2017. This compares to an increase in The S-Network 500 Total Return Index (TICKER: SN500T) of +6.76% and a decrease in the Dynamic Biotech & Genome Intellidex Total Return Index (TICKER: DZOTR) of -5.54%.

The Poliwogg Healthcare Innovation Total Return Index is up +78.15% in the past 12 months. This compares to a +22.56% rise in The S-Network 500 Total Return Index and +22.04% increase in the Dynamic Biotech & Genome Intellidex Total Return Index .

**Index Description.** The Poliwogg Healthcare Innovation Index (TICKER: PHIX) is designed to capture merger and acquisition opportunities in the pharmaceutical industry. PHIX consists of companies included in the Poliwogg Biopharma Merger & Acquisition Index (PBMA) that pass additional screens .

**Inclusion Criteria.** PHIX consists of companies listed on a US stock exchange and principally engaged in one of the following healthcare sectors: a) biotechnology and b) pharmaceuticals. Constituents must have a market capitalization of no less than \$1 billion and no more than \$50 billion. Constituents must sustain an average daily trading volume in excess of \$1 million for the 90-day period preceding a reconstitution. Constituents must have one or more drugs in either Phase II or Phase III US Food and Drug Administration (FDA) clinical trials which are not in a partnership. Constituents must also have drugs which meet one of the following criteria:

- I. Breakthrough, Fast Track or Orphan drug status
- II. Expected Catalyst within the next 24 months

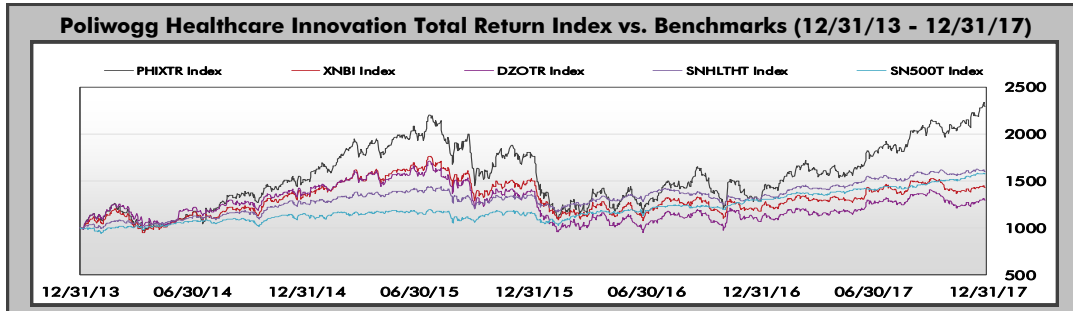
The number of stocks contained in the PHIX is fixed at 30. If more than 30 companies exhibit the above criteria the index selects the 30 companies with the highest ratio of peak forecasted sales for the drugs in clinical trials to full market capitalization. If fewer than 30 companies exhibit the above criteria the index selects the 30 companies with the highest ratio of peak forecasted sales for the drugs in clinical trials to full market capitalization.

**Weighting Methodology.** The constituents of PHIX are equal weighted .

**Rebalancing.** PHIX is reconstituted semi-annually on the third Friday of June and December of each year. In addition, PHIX is rebalanced quarterly on the third Friday of the last month of each calendar quarter .

**Index Data.** PHIX is calculated daily by S-Network Global Indexes. Daily values from December 31, 2013 are available on the Poliwogg website and through various data vendors. End-of-day index values are distributed daily via the NYSE Global Index Feed .

Leading Movers				
Company Name	Ticker	Opening	Closing	Change
NEKTAR THERAPEUTICS	NKTR US	24.00	59.72	148.83%
AIMMUNE THERAPEUTICS INC.	AIMT US	24.79	37.82	52.56%
GW PHARMACEUTICALS -ADR	GWPH US	101.49	132.01	30.07%
BLUEBIRD BIO INC	BLUE US	137.35	178.10	29.67%
GLOBAL BLOOD THERAPEUTICS INC.	GBT US	31.05	39.35	26.73%
Lagging Movers				
Company Name	Ticker	Opening	Closing	Change
DBV TECHNOLOGIES SA-SPON ADR	DBVT US	42.44	24.60	-42.04%
TESARO INC	TSRO US	129.10	82.87	-35.81%
THE MEDICINES COMPANY	MDCO US	37.04	27.34	-26.19%
ACADIA PHARMACEUTICALS INC	ACAD US	37.67	30.11	-20.07%
CLOVIS ONCOLOGY INC.	CLVS US	82.40	68.00	-17.48%



\*Note: This chart is a normalized historical graph  
Data Source: Bloomberg Data as of December 31, 2017

This chart is for illustrative purposes only. Historical information is not indicative of future results; current data may differ from data quoted. Investors cannot invest directly in index. Index returns do not reflect any management fees or brokerage expenses.

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Index Statistical Profile

Capitalization Profile	
Number of Constituents	30
TOTAL MARKET CAPITALIZATION	125.16 Billion USD
LARGEST MARKET CAPITALIZATION	26.72 Billion USD
SMALLEST MARKET CAPITALIZATION	1.16 Billion USD
AVERAGE MARKET CAPITALIZATION	4.17 Billion USD
MEDIAN MARKET CAPITALIZATION	2.52 Billion USD

Total Return Appreciation					
	PHIXTR	XNBI	DZOTR	SNHLTHT	SN500T
Since Inception	130.16%	43.71%	30.16%	60.68%	57.46%
3 Year	52.62%	6.92%	-4.69%	28.11%	38.82%
1 Year	78.15%	21.63%	22.04%	22.91%	22.56%

Compound Annual Growth Rate (CAGR)					
	PHIXTR	XNBI	DZOTR	SNHLTHT	SN500T
Since Inception	23.17%	9.49%	6.81%	12.59%	12.02%
3 Year	15.13%	2.26%	-1.59%	8.61%	11.55%
1 Year	78.15%	21.63%	22.04%	22.91%	22.56%

Annualized Standard Deviation (Monthly)					
	PHIXTR	XNBI	DZOTR	SNHLTHT	SN500T
Since Inception	32.95%	23.13%	25.31%	11.90%	9.64%
3 Year	35.67%	23.57%	25.40%	12.62%	10.15%
1 Year	20.26%	14.54%	16.06%	7.52%	3.88%

Sharpe Ratio					
	PHIXTR	XNBI	DZOTR	SNHLTHT	SN500T
Since Inception	0.7992	0.4964	0.3766	1.0309	1.1946
3 Year	0.5707	0.1961	0.0509	0.6832	1.0864
1 Year	2.9626	1.3583	1.2639	2.6714	5.0596

\*All data as of December 31, 2017

\*\*Dependent variable shown in Column Headers, Independent shown in Row Headers

Top Ten Constituents			
Company	Ticker	Country	Weight
IMMUNOMEDICS INC	IMMU US	United States	4.18%
ACCELERON PHARMA INC.	XLRN US	United States	3.82%
DBV TECHNOLOGIES SA-SPON ADR	DBVT US	France	3.69%
ARRAY BIOPHARMA INC	ARRY US	United States	3.66%
AIMMUNE THERAPEUTICS INC.	AIMT US	United States	3.56%
NEKTAR THERAPEUTICS	NKTR US	United States	3.56%
CLOVIS ONCOLOGY INC.	CLVS US	United States	3.52%
GW PHARMACEUTICALS -ADR	GWPH US	United Kingdom	3.44%
EMERGENT BIOSOLUTIONS INC	EBS US	United States	3.43%
DERMIRA INC	DERM US	United States	3.43%

Beta Matrix** (3 Year/Monthly)					
	PHIXTR	XNBI	DZOTR	SNHLTHT	SN500T
PHIXTR	1.0000	0.6335	0.6815	0.2921	0.1669
XNBI	1.4508	1.0000	1.0637	0.4741	0.2600
DZOTR	1.3434	0.9155	1.0000	0.4289	0.2454
SNHLTHT	2.3320	1.6530	1.7372	1.0000	0.6104
SN500T	2.0596	1.4011	1.5362	0.9433	1.0000

Correlation Matrix** (3 Year/Monthly)					
	PHIXTR	XNBI	DZOTR	SNHLTHT	SN500T
PHIXTR	1.0000				
XNBI	0.9587	1.0000			
DZOTR	0.9568	0.9868	1.0000		
SNHLTHT	0.8253	0.8853	0.8632	1.0000	
SN500T	0.5863	0.6036	0.6140	0.7588	1.0000

R-Square Matrix** (3 Year/Monthly)					
	PHIXTR	XNBI	DZOTR	SNHLTHT	SN500T
PHIXTR	1.0000				
XNBI	0.9190	1.0000			
DZOTR	0.9156	0.9738	1.0000		
SNHLTHT	0.6811	0.7837	0.7450	1.0000	
SN500T	0.3438	0.3643	0.3770	0.5758	1.0000

Index Composition

