



INDEXES

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Information about the index, including rule book, company description and historic data, can be found at:
www.poliwoggindexes.com

TICKERS:

**Poliwogg Biopharma M&A Index :
PBMA**

**Poliwogg Biopharma M&A Total Return
Index : PBMATR**

December 2016

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Q4 2016 Review: Poliwogg Biopharma M&A Total Return Index

Index Performance. The Poliwogg Biopharma M&A Total Return Index (TICKER: PBMATR) decreased -10.22% from 4571.66 to 4104.33 in the quarter ended December 2016. This compares to an increase in the The S-Network 500 Total Return Index (TICKER: SN500T) of +3.86% and a decrease in the NASDAQ Biotechnology Total Return Index (TICKER: XNBI) of -8.31%.

The best performing stocks were Amag Pharmaceuticals Inc (TICKER: AMAG US), which rose +41.98%; Aimmune Therapeutics Inc (TICKER: AIMT US), which rose +36.33%; and TESARO Inc (TICKER: TSRO US), which rose +34.16%. The worst performing stocks were Ophthotech Corp (TICKER: OPHT US), which declined -89.53%; Sarepta Therapeutics Inc (TICKER: SRPT US), which declined -55.33%; and Puma Biotechnology Inc (TICKER: PBYI US), which declined -54.21%.

The Poliwogg Biopharma M&A Total Return Index is down -25.14% in the past 12 months. This compares to a +11.65% rise in the The S-Network 500 Total Return Index and -21.35% decrease in the NASDAQ Biotechnology Total Return Index.

Index Description. The Poliwogg Medical Breakthroughs Index (TICKER: PMBI) is designed to capture research and development opportunities in the pharmaceutical industry. PMBI consists of small-cap and mid-cap pharmaceutical and biotechnology stocks listed on US stock exchanges that have one or more drugs in either Phase II or Phase III US FDA clinical trials.

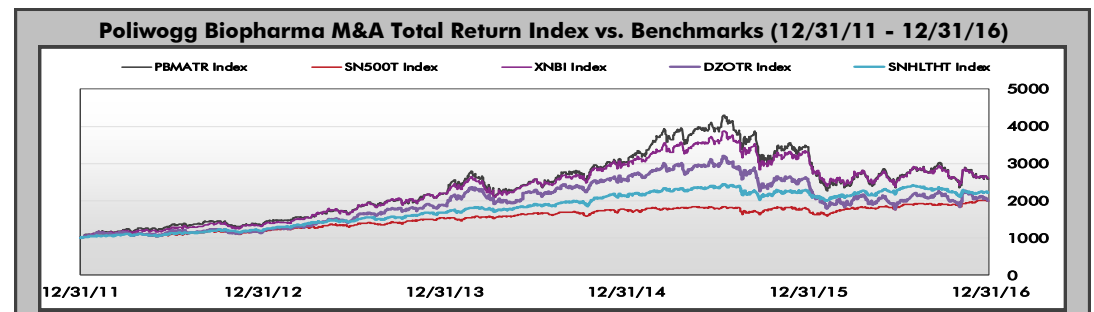
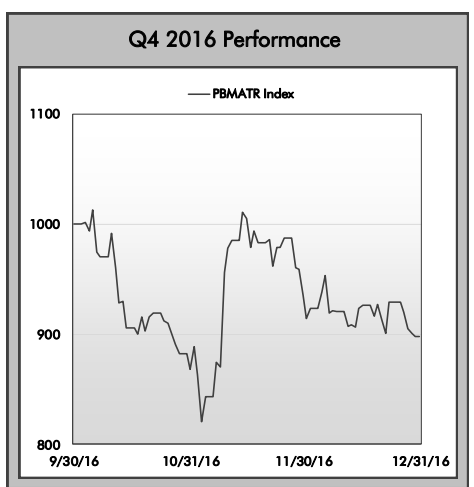
Inclusion Criteria. PMBI consists of companies listed on US stock exchanges principally engaged in one of the following healthcare industries: a) Biotechnology and b) Pharmaceuticals. Constituents must have a market capitalization of no less than \$200 million and no more than \$5 billion. Constituents 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 FDA clinical trials. Constituents must be able to sustain their cash burn rates for at least 24 months.

Weighting Methodology. PMBI uses a modified capitalization weighting methodology, which is not adjusted for float. The index weight of the largest stock is capped at 4.5% and the excess weight is redistributed proportionately over the remainder of the index.

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

Index Data. PMBI is calculated daily by S-Network Global Indexes. Daily values from December 31, 2006 are available on the Poliwogg website and through various data vendors. End-of-day index values are distributed via daily the NYSE Global Index Feed.

Leading Movers				
Company Name	Ticker	Opening	Closing	Change
AMAG PHARMACEUTICALS INC	AMAG US	24.51	34.80	41.98%
AIMMUNE THERAPEUTICS INC	AIMT US	15.00	20.45	36.33%
TESARO INC	TSRO US	100.24	134.48	34.16%
IONIS PHARMACEUTICALS INC	IONS US	36.64	47.83	30.54%
ARRAY BIOPHARMA INC	ARRY US	6.75	8.79	30.22%
Lagging Movers				
Company Name	Ticker	Opening	Closing	Change
OPHTHOTECH CORP	OPHT US	46.13	4.83	-89.53%
SAREPTA THERAPEUTICS INC	SRPT US	61.41	27.43	-55.33%
PUMA BIOTECHNOLOGY INC	PBYI US	67.05	30.70	-54.21%
ALNYLAM PHARMACEUTICALS INC	ALNY US	67.78	37.44	-44.76%
IMPAX LABORATORIES INC	IPXL US	23.70	13.25	-44.09%



*Note: This chart is a normalized historical graph
Data Source: Bloomberg Data as of December 31, 2016

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	73	
TOTAL MARKET CAPITALIZATION	266.38	Billion USD
LARGEST MARKET CAPITALIZATION	27.44	Billion USD
SMALLEST MARKET CAPITALIZATION	172.42	Million USD
AVERAGE MARKET CAPITALIZATION	3.65	Billion USD
MEDIAN MARKET CAPITALIZATION	1.75	Billion USD

Total Return Appreciation					
	PBMATR	SN500T	XNBI	DZOTR	SNHLTHT
5 Year	157.54%	98.31%	159.41%	99.49%	121.53%
3 Year	17.40%	28.70%	18.15%	6.66%	31.52%
1 Year	-25.14%	11.65%	-21.35%	-23.17%	-2.23%

Compound Annual Growth Rate (CAGR)					
	PBMATR	SN500T	XNBI	DZOTR	SNHLTHT
5 Year	20.83%	14.68%	21.00%	14.81%	17.24%
3 Year	5.49%	8.77%	5.72%	2.17%	9.56%
1 Year	-25.14%	11.65%	-21.35%	-23.17%	-2.23%

Annualized Standard Deviation (Monthly)					
	PBMATR	SN500T	XNBI	DZOTR	SNHLTHT
5 Year	26.72%	10.48%	22.85%	24.45%	12.16%
3 Year	30.90%	10.84%	25.47%	27.82%	13.02%
1 Year	37.05%	10.30%	31.12%	33.64%	14.15%

Sharpe Ratio					
	PBMATR	SN500T	XNBI	DZOTR	SNHLTHT
5 Year	0.8476	1.3548	0.9517	0.6877	1.3671
3 Year	0.3288	0.8178	0.3425	0.2136	0.7573
1 Year	-0.5925	1.0895	-0.6229	-0.6177	-0.1160

*All data as of December 31, 2016

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

Top Ten Constituents				
Company	Ticker	Country	Weight	
GRIFOLS SA	GRFS US	SPAIN	3.33%	
JAZZ PHARMACEUTICALS PLC	JAZZ US	IRELAND	3.28%	
UNITED THERAPEUTICS CORP	UTHR US	UNITED STATES	3.23%	
TESARO INC	TSRO US	UNITED STATES	3.18%	
PERRIGO COMPANY PLC	PRGO US	IRELAND	3.11%	
ALKERMES PLC	ALKS US	IRELAND	3.08%	
BIOMARIN PHARMACEUTICAL INC	BMRN US	UNITED STATES	3.08%	
IONIS PHARMACEUTICALS INC	IONS US	UNITED STATES	3.07%	
INCYTE CORP	INCY US	UNITED STATES	3.07%	
DR. REDDY'S LABORATORIES LTD	RDY US	INDIA	2.99%	

Beta Matrix**					
	PBMATR	SN500T	XNBI	DZOTR	SNHLTHT
PBMATR	1.0000	0.2317	0.8314	0.8753	0.3802
SN500T	1.5069	1.0000	1.3501	1.4086	0.9357
XNBI	1.1366	0.2838	1.0000	1.0284	0.4542
DZOTR	1.0452	0.2586	0.8982	1.0000	0.4140
SNHLTHT	1.8347	0.6942	1.6031	1.6730	1.0000

Correlation Matrix** (5 Year/Monthly)					
	PBMATR	SN500T	XNBI	DZOTR	SNHLTHT
PBMATR	1.0000				
SN500T	0.5909	1.0000			
XNBI	0.9721	0.6190	1.0000		
DZOTR	0.9565	0.6036	0.9611	1.0000	
SNHLTHT	0.8352	0.8060	0.8533	0.8323	1.0000

R-Square Matrix** (5 Year/Monthly)					
	PBMATR	SN500T	XNBI	DZOTR	SNHLTHT
PBMATR	1.0000				
SN500T	0.3491	1.0000			
XNBI	0.9450	0.3832	1.0000		
DZOTR	0.9149	0.3643	0.9237	1.0000	
SNHLTHT	0.6976	0.6496	0.7282	0.6927	1.0000

Index Composition

