



S-Network Medical Breakthroughs Index (PMBI)

Q3 2020

Industry Overview

- ❑ Healthcare is expected to grow to \$4 trillion and 20% of GDP by 2020
- ❑ Big Pharma Pipelines Refilled Through M&A not R&D
- ❑ Pharmaceutical company research emphasizes extending patents, not new innovations
- ❑ The biotech and molecular diagnostic industries are creating the innovations that can impact disease
- ❑ The patented drugs become generics
- ❑ Big Pharma has begun to acquire biotech companies to replenish revenues

Market Overview

❑ Trial outcomes drive virtually all key capital market events in biotech

- Partnering/licensing
- M & A
- Add-on financing

❑ Existing indexes do not adequately capture this

- Market cap weighting creates established-company bias

Index Rationalization

- ❑ **Currently there are more products in Phase II or III clinical trials with the Food and Drug Administration (“FDA”) than at any other time in history**
- ❑ **Therapies that are successful often represent significant progress against a particular disease and are therefore potentially quite valuable**
- ❑ **Most of these trials are NOT being conducted by “Big Pharma”**
- ❑ **Heretofore, there has been no financial product that captures this extraordinary level of activity and innovation**

Index Description

❑ 90 public companies with therapies in Phase II or III clinical trials

- Market capitalization greater than \$200 million
- Market capitalization under \$5 billion
- Adequate cash to guard against dilution before trial completion
 - Cash to cover 24 months of burn rate
- Potential for significant price moves upon announcements

❑ Reconstituted semiannually

❑ Rebalanced quarterly

□ Universe of small-cap and mid-cap firms is regularly rejuvenated

- 490 public companies with products in trial
- 29 biotech IPOs in 2019 alone (YTD as of 10.28.19)
- Big Pharma only performs 1/3 of clinical trials

Historical Performance

Poliwogg Medical Breakthroughs Index vs. Benchmarks
(12/31/2006–9/30/2020)



*To ensure fair comparisons, all of the starting index values are normalized to 1,000 as of December 31, 2006.

Source: Bloomberg, as of 09/30/2020

Top Ten Constituents

Company	Ticker	Country	Weight
Mirati Therapeutics Inc	MRTX US	United States	5.33%
Acceleron Pharma Inc	XLRN US	United States	4.86%
Emergent BioSolutions Inc	EBS US	United States	3.94%
Blueprint Medicines Corp	BPMC US	United States	3.69%
United Therapeutics Corp	UTHR US	United States	3.23%
Arrowhead Pharmaceuticals Inc	ARWR US	United States	3.17%
Vir Biotechnology Inc	VIR US	United States	3.14%
Arena Pharmaceuticals Inc	ARNA US	United States	3.11%
MorphoSys AG	MOR US	Germany	3.03%
Allakos Inc	ALLK US	United States	2.87%

Source: Bloomberg, as of 09/30/2020

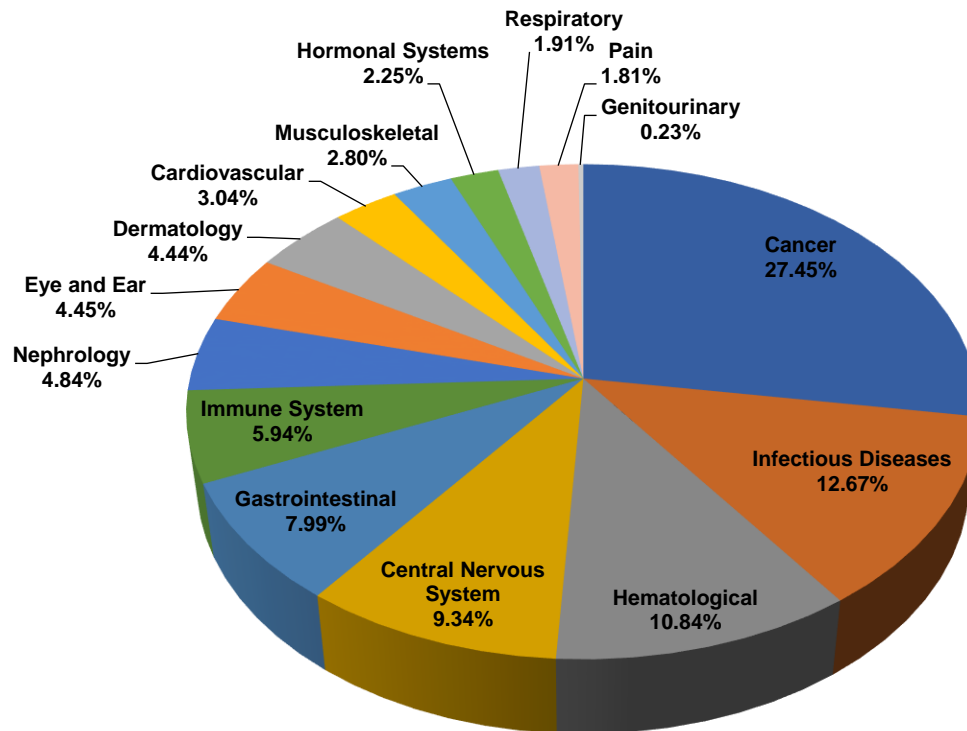
Market Capitalization Profile

Market Capitalization Profile	
Number of Constituents	89
Total Market Capitalization	138.80 Billion USD
Largest Market Capitalization	7.40 Billion USD
Smallest Market Capitalization	75.29 Million USD
Average Market Capitalization	1.56 Billion USD
Median Market Capitalization	969.31 Million USD

Source: Bloomberg, as of 09/30/2020

Therapeutic Areas Distribution

Therapeutic Area Distribution



Source: Bloomberg, as of 09/30/2020

Construction Methodology

❑ Unique component weighting methodology that incorporates:

- Economic potential of therapy in relation to company size based on independent consensus estimates
- Status of trial – likelihood of success
- Basic screens for investability and liquidity

❑ Gains from successes should drive profitability in entire index

Statistical Profile I

Total Return Appreciation

	S-Network Medical Breakthroughs TR Index	NASDAQ Biotechnology TR Index	S-Network US Equity Large/Mid Health Care TR Index	S-Network US Equity Large Cap 500 TR Index
Since Inception*	869.01%	456.25%	341.09%	231.86%
10 Year	659.95%	393.74%	337.19%	275.32%
5 Year	56.60%	37.74%	81.27%	99.30%
3 Year	39.09%	23.88%	41.99%	45.74%
1 Year	30.56%	36.90%	23.39%	18.44%

Compound Annual Growth Rate

	S-Network Medical Breakthroughs TR Index	NASDAQ Biotechnology TR Index	S-Network US Equity Large/Mid Health Care TR Index	S-Network US Equity Large Cap 500 TR Index
Since Inception*	17.96%	13.29%	11.40%	9.12%
10 Year	22.48%	17.31%	15.90%	14.14%
5 Year	9.39%	6.61%	12.63%	14.79%
3 Year	11.63%	7.40%	12.40%	13.38%
1 Year	30.56%	36.90%	23.39%	18.44%

* Since S-Network Medical Breakthrough Index (PMBI) inception date of 12/31/2006

Source: Bloomberg, as of 09/30/2020

Statistical Profile II

Annualized Monthly Standard Deviation

	S-Network Medical Breakthroughs TR Index	NASDAQ Biotechnology TR Index	S-Network US Equity Large/Mid Health Care TR Index	S-Network US Equity Large Cap 500 TR Index
Since Inception*	27.18%	21.08%	14.26%	15.38%
10 Year	28.32%	21.18%	13.10%	13.38%
5 Year	30.78%	23.13%	14.59%	15.10%
3 Year	28.64%	22.41%	16.10%	18.05%
1 Year	34.54%	22.41%	18.71%	24.04%

Annualized Monthly Sharpe Ratio

	S-Network Medical Breakthroughs TR Index	NASDAQ Biotechnology TR Index	S-Network US Equity Large/Mid Health Care TR Index	S-Network US Equity Large Cap 500 TR Index
Since Inception*	0.7161	0.6584	0.7686	0.5885
10 Year	0.8443	0.8367	1.1517	1.0147
5 Year	0.4126	0.3440	0.8117	0.9171
3 Year	0.4693	0.3567	0.7080	0.6998
1 Year	0.9163	1.4835	1.1757	0.7885

* Since S-Network Medical Breakthrough Index (PMBI) inception date of 12/31/2006

Source: Bloomberg, as of 09/30/2020

Statistical Profile III

Correlation (Monthly, vs. SN500 TR)

	S-Network Medical Breakthroughs TR Index	NASDAQ Biotechnology TR Index	S-Network US Large/Mid-Cap Health Care TR Index
Since Inception*	0.6313	0.6531	0.8171
10 Year	0.6146	0.6338	0.8133
5 Year	0.6754	0.6720	0.8176
3 Year	0.7728	0.7182	0.8414
1 Year	0.7767	0.6346	0.8631

Beta (Monthly, vs. SN500 TR)

	S-Network Medical Breakthroughs TR Index	NASDAQ Biotechnology TR Index	S-Network US Large/Mid-Cap Health Care TR Index
Since Inception*	1.1156	0.8953	0.7575
10 Year	1.3003	1.0030	0.7957
5 Year	1.3769	1.0295	0.7900
3 Year	1.2262	0.8916	0.7507
1 Year	1.1160	0.5916	0.6715

* Since S-Network Medical Breakthrough Index (PMBI) inception date of 12/31/2006

Source: Bloomberg, as of 6/30/2020

Statistical Profile IV

R-Squared (Monthly, vs. SN500 TR)

	S-Network Medical Breakthroughs TR Index	NASDAQ Biotechnology TR Index	S-Network US Large/Mid-Cap Health Care TR Index
Since Inception*	0.3986	0.4265	0.6676
10 Year	0.3778	0.4017	0.6614
5 Year	0.4562	0.4516	0.6684
3 Year	0.5972	0.5159	0.7079
1 Year	0.6032	0.4027	0.7449

* Since S-Network Medical Breakthrough Index (PMBI) inception date of 12/31/2006

Source: Bloomberg, as of 09/30/2020

Portfolio Details & Distribution

- ❑ **Price and Total Return Indexes Calculated Daily (EOD) in USD**
- ❑ **Index Values Distributed via the NYSE GIF**
- ❑ **Comprehensive Historic Data (including simulated back-tests from 12/31/2006)**
 - Daily Prices for Price-Only + TR Indexes in USD + EURO
 - Semiannual Portfolio Snapshots (Historic Constituents and Weights)
- ❑ **Extensive Analytic support**
 - Quarterly Reports (“Index Insights”)
 - Industry Overviews
 - Extensive Statistical Data
- ❑ **Comprehensive web site**
- ❑ **Broad data distribution via third party vendors**
 - Bloomberg, Yahoo, Marketwatch, etc.
 - S-Network contribution page on Bloomberg: SNET

Complete data availability and index transparency facilitate more effective benchmarking and investment analytics.