MTSL Issue 913

October 18, 2019

UPDATES: ALKS, INCY, IONS, NKTR, ZIOP

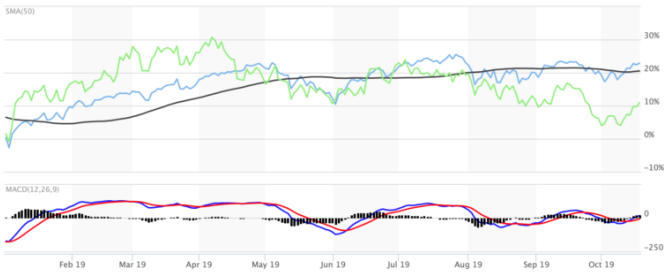
IN THIS ISSUE: The "Rs" Have It – RARX, RETA, RLMD – Pop The XBI

Since Last Issue: BTK: 2.5%; NBI: 4.3%; XBI: 3.8%; Model Portfolio: 1.9%; Trader's Portfolio: 5.8%

BIOTECH SECTOR ANALYSIS

SENTIMENT — TLS Not TLC

NASDAQ Composite Vs. XBI
(COMP Blue/XBI Green)



Smaller cap biotech stocks, which make up the majority of the MTSL Universe, were performing in line with the overall NASDAQ for 2019 until the beginning of August. Since then, the sector has underperformed meaningfully. The NASDAQ is up about 23% this year compared with 11% for the XBI. From August 1 through October 17, the COMP is flat (-0.23%) versus a drop of 8% for the XBI (see the chart above). Such

Small cap Relmada's (RLMD) shares rose sharply after the Company released findings showing that REL-1017 (dextromethadone) results in rapid onset and sustained antidepressant efficacy with statistically significant differences compared to placebo on all efficacy measures tested. The data resulted in reductions in the Montgomery-Asberg Depression Rating Scale (MADRS); the Clinical Global Impression – Severity (CGI-S) scale; the Clinical Global Impression – Improvement (CGI-I) scale; and the Symptoms of Depression Questionnaire (SDQ). The stock moved despite the relatively small (n=61) and short study (3 weeks) and the fact that REL-1017 is a methadone derivative, the study was conducted at Massachusetts General Hospital (MGH) and the compound has received Fast Track Designation from the FDA.

REGULATORY – Steady FDA Approvals

The FDA approved Eli Lilly's Reyvow (lasmiditan), an oral medication for the acute treatment of migraine, with or without aura, in adults. Reyvow has a unique mechanism of action and is the first

underperformance we believe is primarily due to the fears of government price controls and an increasingly possible chance of Elizabeth Warren wining the Democratic nomination for President, among other things (e.g., too many IPOs/financings and not enough takeovers, etc.). In this circumstance, one seasonal routine for fund managers (especially mutual funds) and other investors is tax loss selling (TLS) that begins in October. Early-stage biotechs that are down for the year are particularly vulnerable as the selling gets exacerbated when investors sell losers and clear the books. While it's difficult to pinpoint exactly when TLS begins and ends, it typically occurs in October. Hence, smart money biotech traders/portfolio managers may attempt to get a heads-up and start the TLS process sooner (e.g., September). One sign is often an increase in volume without any fresh news or stock moving catalysts. We have seen several cases of this over the past few weeks.

As biotech stocks often shoot past rational levels in both directions, pain of tax loss selling also causes extreme fear that something must be wrong that we don't know of. While we have had our share of downs in 2019 (e.g., ALKS, NKTR), several of our stocks have been punished along with the TLS despite no change in positive fundamentals. Stocks like ESPR, MDGL, SGMO and ZIOP are examples of MTSL Recommendations that have moved fundamentally in the right direction, but whose stocks have had terrible years so far. The Hillary tweets from September 2015 created an almost identical situation that led to continued downward moves until February 2016. One major difference between now and then is that most corporate balance sheets are stronger than ever and at the end of the day, anyone who has invested in this sector knows that an unexpected new blockbuster drug defies any bear market. The ACAD (Nuplazid), IONS (Spinraza) and MDCO (Inclisiran) drugs, we believe, are headed to blockbuster status. While it certainly has run into some roadblocks, Nektar has over $1.8 billion in cash on hand and more milestones on the way (see NKTR below). So for now we are

and only FDA-approved medicine in a new class of acute treatment for migraine (serotonin (5-HT)1F receptor agonists). It is not a CGRP antibody like AMGN's Aimovig but it is yet another new option for migraines sufferers. Secuado (asenapine) is a transdermal atypical antipsychotic formulation indicated for the treatment of adults with schizophrenia developed by Noven Pharmaceuticals (owned by transdermal patch developer Hisamistu) and received FDA approval. Secuado is the first-and-only schizophrenia treatment approved as a transdermal patch formulation. Asenapine, the atypical antipsychotic contained in Secuado, is currently available as a sublingual tablet formulation under the brand name Saphris. Big Pharma NVS received approval for Beovu (brolucizumab-dbll) injection, also known as RTH258, for the treatment of wet age-related macular degeneration (AMD). According to NVS, "Beovu is the first FDA-approved anti-VEGF to offer both greater fluid resolution versus aflibercept (REGN's Eylea) and the ability to maintain eligible wet AMD patients on a three-month dosing interval immediately after a three-month loading Phase 1 with uncompromised efficacy."

M&A – RARX/ACHN Get 100% Premiums For Complement

UCB will acquire Ra Pharma (RARX) for $2.1 billion, a premium of more than double the stock's previous day's closing price. Ra Pharma shareholders will receive $48 in cash for each Ra Pharma share at closing. Ra Pharma develops drugs for rare diseases based upon, among other targets, inhibiting the complement C5 pathway. The lead compound is zilucoplan, a potential rival to Alexion's Soliris. Zilucoplan is in a Phase III study (called RAISE) for patients with generalized myasthenia gravis, a condition in which the immune system attacks the body's tissues, causing muscle weakness.

experiencing the usual TSL (tax loss selling) and not the needed TLC (tender loving care).

The "R"s have it! Since the last Issue, three SMID cap biotech companies with names beginning with the letter R have skyrocketed due to a takeover at a huge premium and two unexpected clinical trial wins. As a result, around press time the XBI has staged an impressive little rebound – as two of the major industry stock driving catalysts surprised the majority of investors. On each of their respective good news, the associated stocks were up a whopping +56% (RETA), +101% (RARX) and +162% (RLMD). Of the three, only RLMD was a relatively small cap name before the news, while the others were already at >$1 billion valuations pre-catalysts.

As we went to press, ALXN announced that it was acquiring ACHN (+75%), so in addition to the "R" stocks, two "A"s have helped the recent rally as well. These are perfect examples of why biotech stocks can be very rewarding investments, and also why staying the course with fundamentally sound stocks that have plenty of cash and upcoming catalysts can be rather fruitful. Before this nice new list, MTSL's MDCO (+185% YTD) and ACAD (+147% YTD) stood virtually alone as top 2019 performers. Now there are at least 4 more home run names that taken together are starting to bring investors and traders back to the XBI. Stay tuned, as year-end window dressing for performance fees (e.g., keep powder dry until then) and the JPMorgan Healthcare Conference (San Francisco, January 6-9. 2020) are less than three months away. An updated clinical/investor calendar is below. Still a frustrating year for sure, but the clouds may be parting.

Will Impeachment Drama Allow Drug Prices To Be Pushed Aside?

Politicians are notably experts at playing "kick the can" and that has happened time and again with drug and health care policy. Despite the daily impeachment headlines, we believe it is unlikely that the drug and

Interestingly and maybe not coincidentally, a few days after the RARX/UCB deal, ALXN announced that it is buying small cap Achillion (ACHN) for $960 million, or $6.30 per share (+75%) plus another potential $2 per share in two CVRs. ACHN is developing oral small molecule Factor D inhibitors to treat people with complement (C5) alternative pathway-mediated rare diseases, such as paroxysmal nocturnal hemoglobinuria (PNH) and C3 glomerulopathy (C3G). Achillion has two clinical-stage medicines in development, including danicopan (ACH-4471) in Phase II and ACH-5228 in Phase 1. The CVRs will be based upon FDA approval of danicopan and for ACH-5228 Phase III initiation, $1 per share each. Danicopan could have eventually competed and/or be synergistic with Alexion's blockbuster C5-inhibitor Soliris.

FINANCE – Deals Yes, Follow-Through No

Despite the market's growing satiation of new biotech offerings of late, two of the more anticipated IPOs got done since the last Issue. VIR Biotechnology (VIR), focused on new anti-infection drugs using the immune system led by ex-BIIB CEO George Scangos, came out at $20 per share and traded last around $14 per share, a drop of almost 30%. Germany's BioNTech Se (BNTX), which focuses on individualized immunotherapies for cancer, was priced at $15. The stock closed at $13, for a negative 13% return. The lineup of IPOs isn't stopping but the market for these deals is. Usually the closing of the finance window correlates with a bottoming of the public biotech stock market, although in this POTUS election cycle who really knows. The charts say maybe we are coming back to public names, after so much cash and attention has been paid to the private ones.

biotech companies will be able to escape the political rhetoric and eventually some compromise will be reached. We doubt Warren/Sanders' Medicare For All will ever become a reality. The recent Democratic debate focused on that specific item and less about how to attack high drug prices. In the meantime, the pharmaceutical industry needs to find truly innovative compounds and they often come from early-to-mid-stage biotech companies like those of the recent M&A targets, RARX and ACHN.

Technicals – Back To Positively Neutral

While we are still a bit away from the mid-September high (84) and also below the moving averages (closing just below 80), though the past week's XBI bounce was a positive sign. Last Issue at press time, it looked like we were close to a pop when volatile laggard SRPT presented early gene therapy data that saw its depressed stock bounce ~10% – only to completely reverse itself after that weekend. (It has since recovered the 10% once more.) On the trio of good company news and possibly the easing of tax loss selling, the XBI has had a solid comeback. Key technical levels remain with the 200-day MA above (see XBI daily above), but the 200-WEEK support level has both held and bounced (see XBI weekly below). This is critical to us, as we always believe that the longer-term technicals are the best sign of underlying biotech health and also helps long-term investors hold. The daily index is right near the 50-day moving average (80), and we all know that a breakout above

October/November Biotech Events - Scientific & Investor Meetings

Date	Host	Event	Location
10/22-25	ESGCT	European Society for Cell & Gene Therapy	Barcelona
10/22-23	BIO	Investor Forum	San Francisco
10/25-30	ACG	American College of Gastroenterology	San Antonio
10/31-11/2	CF Foundation	North American Cystic Fibrosis Conference	Nashville
11/6-10	SITC	Annual Meeting	Maryland
11/7-11	ACAAI	American College of Asthma, Allergy, Immunology	Houston
11/8-12	AASLD	The Liver Meeting 2019	Boston
11/8-13	ACR	American Academy of Rheumatology	Atlanta
11/13	Credit Suisse	Annual Healthcare Conference	Scottsdale
11/16-19	AHA	Annual Meeting	Philadelphia
11/19-20	Stifel	Healthcare Conference	New York
11/20-24	SNO	Society for Neuro-Oncology	Phoenix

CALENDAR/KEY EVENTS – Conference Season In Top Gear

At least five major scientific symposia will take place in November, including the American Heart Association presentations of the MDCO Inclisiran ORION 9 and 10 studies (11/16-18). MRTX will release initial data of its KRAS inhibitor and AMG510 competitor, MRTX849, on October 28, while AMRN will learn of FDA's analysis and questions before deciding Vascepa's label expansion (November 12 briefing documents; AdCom November 14). The Liver meetings will also include an update of MTSL Rec MDGL's resmetiron in NASH (11/8-12) and possibly the initiation of a second Phase III study (in NAFLD). Another meeting to watch is the SNO conference for an update on ZIOP brain cancer compound. Earnings season is up next and the world's largest Big Pharma JNJ has led off with a single, now its up to the rest of the group to drive them home.

MTSL Recommendations with upcoming catalysts include ACAD, ALKS, BMRN, MDCO, MDGL, INCY, IONS, NKTR, SGMO and ZIOP. Busy times indeed.

ACAD

- Nuplazid HARMONY trial in Dementia-Related Psychosis (DRP) – details of the positive top line release to be presented at the 12th Clinical Trials on Alzheimer's Disease (CTAD) Meeting, **December 4-7, 2019**

that is good for the longs. The daily RSI is back to neutral at 55, but it got there going up and not down. In other words, the momentum is now positive. The MACD has also improved and is in positive territory for the first time since September 23.

Of course, the potential start of an end to the China trade war has taken some of the "risk off " for now. Even some of the recent winners that have been decimated are coming back to life (e.g., SRPT, BLUE, GWPH). The sentiment is no longer terrible. But like our scary Santa Ana winds here in California, they often change. So does Trump and the election is still a year off. Watch the key near-term levels (80 for the 50-day, 83 for the 50-week) and any move above could set up a rally we have not seen since back in the first quarter. The event calendar is very busy (see Calendar below).

DATA – RETA and RLMD

Reata (RETA) announced positive results from the registrational Part 2 portion of a Phase II study (MOXIe) for omaveloxolone in patients with Friedreich ataxia, a rare inherited disorder that leads to a progressive loss of neurological function. The study met the primary endpoint of a statistically significant placebo-corrected 2.4-point improvement in the modified Friedreich's Ataxia Rating Scale, or mFARS, relative to placebo after 48 weeks of treatment. Since the primary endpoint had previously been agreed upon with the FDA, Reata will submit regulatory filings

ALKS

- PDUFA for VUMERITY (BIIB-098) in MS – Q4:19

BMRN

- Phase III data for vosoritide (achondroplasia) – YE:19/Q1:20
- BLA filing for ValRox in the U.S. – by year-end

IONS

- Huntington's disease data for RG6042 from partner Roche YE:19

INCY

- File NDA for pemigatinib by YE:19

NKTR

- IL-2 combos – Initial Phase I data – YE:19
- 5 abstracts at SITC including updated data from the PIVOT-02 study of bempegaldesleukin (NKTR-214) with nivolumab in first-line metastatic melanoma **(Nov. 6)**

MDCO

- Inclisiran Phase III ORION 9 and 10 study full presentations at AHA on **November 16, 18**
- File Inclisiran BLA in the U.S. (YE:19)

MDGL

- Potential initiation of Phase III MAESTRO-NAFLD of resmetiron in Q4:19

SGMO

in the U.S. and internationally. RETA's market cap is up over $2 billion since the news was announced.

- SB-525 – hemophilia A Phase II update at ASH (Q4)
- SB-920 STAAR – first patient enrollment in Fabry's disease – YE:19
- ST-400 – additional preliminary data (Q4) in beta-thal
- TX-200 – initiate Phase I/II trial in solid organ transplant (RCC)

ZIOP

- Initiation of human trials for its novel TCR program – **October**
- Ad-RTS-hIL-12 plus veledimex Phase II update at SNO (November 20-24)
- Phase 1 clinical trial of CD19-specific CAR-T, produced using a process termed rapid personalized manufacture (RPM) via Sleeping Beauty, for patients with relapsed CD19+ leukemias and lymphomas – before YE:19

Clinical Trials Watch

Relevant New Studies or Changes Posted on ClinicalTrials.gov for our MTSL Portfolio and/or Related Companies S

CELG – PARAGON Platform for Outcome, Quality of Life, and Translational Research on Pancreatic Cancer (PA

GILD/GLPG – Study to Evaluate the Efficacy and Safety of Filgotinib in Participants With Active Psoriatic Arthr Therapy

GSK – Platform Study of Belantamab Mafodotin as Monotherapy and in Combination With Anti-cancer Treat Relapsed/Refractory Multiple Myeloma (RRMM) (DREAMM 5)

INCY – INCMGA00012 in Patients With Previously Treated Unresectable or Metastatic Adenosquamous Pancr

INCY/NVS – MITHRIDATE: Ruxolitinib Versus Hydroxycarbamide or Interferon as First Line Therapy in High Ri

National Cancer Institute (NC) – Gene Modified Immune Cells (IL13Ralpha2 CAR T Cells) After Conditioning F IIIC or IV Melanoma

NKTR/LLY – A Study of LY3471851 in Participants With Psoriasis

PCRX – Thoracic Epidural Analgesia vs Surgical Site Infiltration With Liposomal Bupivacaine Following Open

Company Updates

UPDATES: ALKS, INCY, IONS, NKTR, ZIOP

ALKS – BIIB/ALKS Receive VUMERITY FDA Approval Early

Just this Thursday night, Alkermes plc received tentative FDA approval of VUMERITYTM (diroximel fumarate) for the treatment of relapsing forms of multiple sclerosis. The tentative approval letter stated that final approval of VUMERITY is subject to the expiration of a period of patent protection and/or exclusivity. The Company believes this period relates to the term of a patent of the reference listed drug product that is scheduled to expire on ***October 20, 2019.*** The tentative approval letter is posted to the FDA Approved Drugs Product website, available at www.accessdata.fda.gov/drugsatfda_docs/appletter/2019/211855Orig1s000TAltr.pdf. Marketing partner and MS drug leader BIIB is responsible for the commercialization effort for VUMERITY.

The Company filed the new drug application for VUMERITY through the 505(b)(2) regulatory pathway in December 2018 and certified to the applicable patents of the reference listed drug product assuming a PDUFA target action date in December 2019 and with the goal of enabling a commercial launch of VUMERITY as soon as possible thereafter.

Hence, the October 17 approval is about two months early, and bodes well for both Biogen and Alkermes. With the recent destruction of ALKS shares, we are lowering our BUY and TARGET PRICE – despite the fact that we are positive on the early VUMERITY approval. With tax loss selling adding to the downside, in our view, the stock is in the process of establishing a new base and, with fundamental positives like the early VUMERITY FDA approval, we believe it will be only a matter of time until ALKS' shares begin to recover.

RECOMMENDATION

ALKS is now a BUY under 35 (was 55) with a TARGET PRICE of 55 (was 75)

INCY – Jakafi Hits In Phase III For GVHD

Incyte reported positive top-line data from the Phase III REACH2 study evaluating Jakafi (ruxolitinib) in steroid-refractory acute graft versus host disease (SR aGVHD). Jakafi met the primary endpoint of ORR at 28 days versus a basket of the best available therapies (BAT, as selected by investigator). Jakafi was previously approved for SR aGVHD in the U.S. earlier this year based on the single-arm REACH1 study. Novartis performed the REACH2 trial, and Novartis is responsible for the ex-U.S. approval process for Jakafi in SR aGVHD based on the REACH2 data. Incyte is eligible for royalties for ex-U.S. Jakafi GVHD sales. Detailed REACH2 data will be presented at an upcoming medical meeting (maybe ASH 2019).

INCY has guided the release for the Phase III REACH3 study of Jakafi in SR chronic GVHD to 2020 (likely ~mid-2020) from year-end 2019. No reason was given but management recently took an interim analysis for REACH3 (when 60% of patients had undergone the primary endpoint analysis), and based on this analysis the study was not stopped for futility, overwhelming efficacy, or safety.

Itacitinib, INCY's wholly-owned novel JAK inhibitor, started Phase III trials in first-line acute GVHD back in January and data is due by year-end. As a proprietary product (vs. Jakafi in GVHD which is shared with NVS), INCY has more potential financial leverage with itacitinib in GVHD than Jakafi. Managment confirmed that the Phase III GRAVITAS-301 study of itacitinib in first-line aGVHD is on track to readout by YE19. INCY will report Q3:19 earnings before the market opens on October 29th. We expect Jakafi to meet expectations and look forward to key R&D pipeline updates, including further data for several INCY compounds at ASH (December).

RECOMMENDATION

INCY is a BUY under 75 with a TARGET PRICE of 95

IONS – AKCA/IONS Ink $250 Million Deal With Pfizer for ANGPTL3-L, Roche Upsizes Phase III for Huntington's

Pfizer and AKCA have signed worldwide exclusive licensing agreement for AKCEA-ANGPTL3-LRx, an investigational antisense therapy being developed to treat patients with certain cardiovascular and

Some investors have assumed the worst as the increase could suggest the Phase III trial needed more patients for sufficient powering to achieve statistical significance, but many trials are upsized for various

metabolic diseases. Under the terms of the agreement, AKCA and IONS receive a $250 million upfront license fee to be split equally between the two companies, and AKCA will settle its $125 million obligation to IONS in AKCA common stock. Both companies are also eligible to receive development, regulatory and sales milestone payments of up to $1.3 billion and tiered, double-digit royalties on annual worldwide net sales following marketing approval of AKCEA-ANGPTL3-LRx. Pfizer will be responsible for all development and regulatory activities and costs beyond those associated with the ongoing Phase II study. Importantly, AKCA will also have the right at its option, prior to regulatory filing for marketing approval, to participate in certain commercialization activities with Pfizer in the U.S. and certain additional markets. This is an excellent deal with a significant upfront of $250 million and is further testament to IONS' Lica technology which allows for significantly less drug to be used.

Separately, IONS' stock sold of this week when their partner Roche disclosed that the size of their RG6042 Phase III trial in Huntington's disease had been increased from 660 patients to 801. The Company commented that the trial expansion was driven by high patient demand and the potential to increase statistical power, particularly for the Q16W dose. reasons and many result in positive outcomes. In our view, the higher patient number should improve the likelihood of statistical success while also creating more visibility among treating neurologists.

AKCEA-ANGPTL3-LRx is designed to reduce the "production of angiopoietin-like 3 (ANGPTL3) protein in the liver, a key regulator of triglycerides, cholesterol, glucose and energy metabolism. AKCEA-ANGPTL3-LRx is currently being evaluated in a Phase II trial in patients with Type 2 diabetes, hypertriglyceridemia and non-alcoholic fatty liver disease (NAFLD). IONS continues to execute and validate their Lica technology/platform with the $250 million Pfizer deal being the latest example. We recommend taking advantage of the weakness in IONS shares, as some may be due to tax loss selling. BIIB earnings are due this week, so all eyes are on Spinraza sales as well.

RECOMMENDATION

IONS is a BUY under 75 with a TARGET PRICE of 90

NKTR – Five Abstracts for Bempeg and '255 at 2019 SITC

The trial will test '255 in patients with relapsed/refractory non-Hodgkin lymphoma (NHL) or multiple myeloma (MM). The study will also assess the combination of NKTR-255 with multiple targeted antibodies.

While initially showing promise as a cancer therapeutic, the efficacy of IL-15 was limited by its short in vivo half-life. More recently, various approaches have been developed to improve the in vivo half-life and efficacy of IL-15, largely by generating IL-15/IL-15Rα conjugates. These new IL-15 based agents renew the prospect of IL-15 as a cancer

The NKTR-255 Phase I study is an open-label, dose escalation and dose expansion study in patients with select hematological malignancies (relapsed or refractory NHL or MM). The dose escalation phase of the study will evaluate the safety and tolerability of NKTR-255 as monotherapy in approximately 40 patients in order to establish a recommended Phase II dose (RP2D) for NKTR-255. The dose expansion phase of the study will enroll in two separate cohorts: the first cohort will enroll patients with MM or NHL (relapsed salvage) to evaluate the NKTR-255 RP2D as a monotherapy and the second cohort will enroll patients with MM or NHL (relapsed/refractory salvage) to evaluate the NKTR-255 RP2D in combination with targeted antibodies, including anti-CD38 monoclonal antibody, daratumumab.

NKTR-255 is an IL-15 receptor agonist designed to engage the IL-15 pathway to stimulate and expand natural killer (NK) cells and promote the survival and expansion of central memory CD8+ T cells without inducing suppressive regulatory T cells. Il-15 is very similar to IL-2, the target for bempeg, in that it has a very short half-life in the body limiting its therapeutic effectiveness. IL-15 is a cytokine that primarily stimulates the proliferation and cytotoxic functions of CD8 T cells and NK cells leading to enhanced anti-tumor responses.

immunotherapeutic agent (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5774016/).

NKTR-255 is a very novel I/O molecule that we believe is completely ignored by investors as it sits in the negative shadow of bempeg. We still believe bempeg data will begin to demonstrate the difference between the good and the bad manufactured lots and eventually lead to re-appreciate the potential of both '214 and '255. Additionally, '181 has also fallen out of favor with the current FDA delay. We believe that NKTR's stock is significantly undervalued due to it being a major target for October tax loss selling and that any good news could turn the stock around on a dime.

RECOMMENDATION

NKTR is a BUY under 35 with a TARGET PRICE of 60

ZIOP – We've Seen This Before – ZIOP Under Attack By Short Report – REITERATE BUY

ZIOP's stock has been under pressure the past two days as an error-filled Seeking Alpha (a classic site for anonymous bears) short report was released on the internet. The share drop was exacerbated as it came out during the vulnerable tax-loss selling season and right before options expiration. Without going into all the details, the report contained all of the traditional

Upcoming near-term catalysts in the remainder of 2019 will be the first patient enrolled in TCR solid tumor trial at the NCI. This should be followed by the Company's IL-12 data in GBM patients at the 2019 Society for Neuro-Oncology Annual Meeting organized by Society for Neuro-Oncology (SNO) and will be held from November 20 – 24, in Phoenix. Lastly,

one-sided only nefariously spun comments that include scientific analysis meant to confuse and create fear in a stock mostly owned by retail investors. The report's attack went after rather ancient history from the old ZIOP days even before Lawrence Cooper joined as CEO from MD Anderson in 2015. It also valued all three of ZIOP's programs at zero while also claiming that all companies formed from reverse mergers should be questioned as investments (go tell that to MTSL Recommendation MDGL). The report even attacked Dr. Drew Deniger who was recently hired to run ZIOP's TCR program claiming he was too "young and unproven" despite haven come out of the National Cancer Institute after working with cancer guru Steve Rosenberg. Its so erroneous that the report even went so far as to try and tie ZIOP to false data that Avexis submitted to the FDA earlier this year. In sum, we have seen this before with many biotech stocks and even MTSL names — ACAD is a class example where shorts called it a zero – and that stock has quadrupled since their bear raid. In our view, this latest bogus report will only be remembered as a great ZIOP buying opportunity. We will discuss more of ZIOP's scientific strengths in the next Issue.

there is a chance other data to be announced before year end and even some further data at ASH in December. The last time we had a major short attack report was with ACAD and we strongly supported ACAD against that spurious report and which has turned out very well for MTSL subscribers. In our view, ZIOP will also refute the shorts with fundamental progress just like ACAD and today's price will be remembered as a steal.

RECOMMENDATION

ZIOP is a BUY under 5 with a TARGET PRICE of 12

The Back Page

Symbol	Company	Orig.Rec.	Current	Target	Recommendation
ACAD	Acadia	33.79	39.98	60	BUY under $46
ALKS*	Alkermes*	10.13	17.73	55*	BUY under $35*
BMRN	BioMarin	12.68	67.90	130	BUY under $100
ESPR	Esperion	24.42	39.36	100	BUY under $75
FPRX	Five Prime	16.29	4.08	16	BUY under $8

INCY	Incyte	5.88	77.43	95	BUY under $75
XON	Intrexon	34.42	5.26	24	BUY under $12
IONS	Ionis	7.63	56.54	90	BUY under $75
MDGL	Madrigal	17.00	87.93	275	BUY under $200
MDCO	Medicines Company	31.98	55.99	85	BUY under $60
MYOV	Myovant	13.74	5.54	25	BUY under $17
NKTR	Nektar	4.66	17.77	60	BUY under $35
PCRX	Pacira	15.78	38.92	55	BUY under $40
SGMO	Sangamo	4.77	8.63	30	BUY under $20
ZIOP	Ziopharm	8.00	3.96	12	BUY under $5
ZYNE	Zynerba	8.00	8.36	27	BUY under $18
CRSP	Crispr	58.39	37.91	40	HOLD
EDIT	Editas	36.13	20.35	26	HOLD
NTLA	Intellia	31.63	11.35	21	HOLD

**new recommendation*

THE MODEL PORTFOLIO*

COMPANY	SHARES OWNED	TOTAL COST	TODAY'S VALUE
Long Positions			

Acadia	5,000	156,557	199,900
Alkermes	4.000	88,690	70,920
Esperion	3,491	105,316	137,406
Five Prime	7,250	91,136	29,580
Incyte	1,294	34,817	100,194
Intrexon	10,200	76,510	53,652
Ionis	3,250	49,123	183,755
Madrigal	3,292	69,980	289,466
Medicines Co	4,600	77,400	257,554
Myovant	7,500	103,853	41,550
Nektar	6,500	63,277	115,505
Pacira	2,500	63,887	97,300
Sangamo	20,479	253,596	176,734
Ziopharm	27,500	166,100	108,900
Zynerba	27,500	150,003	89,703
(10/18/19)		**Equities:**	**$1,952,118**
		Cash:	**$31,953**
	PORTFOLIO	**VALUE:**	**$1,984,071**

**The Model Portfolio is designed to reflect specific recommendations. We began the Model Portfolio on 12/23/83 with $100,000. On 4/13/84, we became fully invested. All profits are reinvested. Stocks recommended since then may be equally attractive, but may not be in the Model Portfolio. Transactions and positions are valued at closing prices. No dividends are created, and we don't use margin. Interest income is credited only on large cash balances.*

THE TRADER'S PORTFOLIO**

COMPANY	SHARES OWNED	TOTAL COST	TODAY'S VALUE
Long Positions			
Acadia	5,000	156,557	199,900
Alkermes	3,500	83,184	62,055
Esperion	4,075	100,005	160,392
Five Prime	8,020	124,919	32,722
Incyte	2,229	51,176	172,591
Intrexon	10,170	119,952	53,494
Ionis	3,300	53,501	186,582
Madrigal	2,910	49,964	255,876
Medicines Co	4,250	127,405	237,958
Myovant	7,410	102,831	41,051
Nektar	6,000	36,411	106,620

Pacira	2,000	55,918	77,840
Sangamo	20,479	253,596	176,734
Ziopharm	27,500	166,100	108,900
Zynerba	27,500	166,100	59,799
(10/18/19)		**Position Total:**	**$1,932,514**
		Margin:	**–$1,249,937**
	PORTFOLIO	**VALUE:**	**$682,577**

***The Trader's Portfolio joined the Model Portfolio on 1/6/05 with $500,000 and is designed to take advantage of short-term opportunities throughout the biotech sector. The Trader's Portfolio will hold both long and short positions in stocks, trade-in options, and use margin. These strategies increase risk. Although there is no limit on the time any purchase can be held, the time frame for most investments will be weeks to months.*

BENCHMARKS

	NASDAQ	S&P 500	MODEL	TRADER'S
Last 2 Weeks	3.6%	3.0%	1.9%	5.8%
2019 YTD	22.9%	19.6%	-8.8%	-13.1%
Calendar Year 2018	5.7%	6.6%	4.5%	11.2%
Calendar Year 2017	29.3%	19.9%	65.6%	98.9%
Calendar Year	7.5%	9.5%	-29.6%	-30.5%

2016				
Calendar Year 2015	-0.1%	-0.1%	25.1%	27.9%
Calendar Year 2014	13.4%	11.4%	29.2%	45.0%
Calendar Year 2013	38.3%	29.6%	103.4%	214.7%
Calendar Year 2012	13.4%	15.9%	25.7%	68.7%

New Money Buys

NEW MONEY BUYS

(Based on Market Cap when under our limit)

1st Tier: ALKS, BMRN, INCY, IONS, NKTR

2nd Tier: ACAD, ESPR, MDGL, MDCO, MYOV, PCRX, XON, SGMO

3rd Tier: FPRX, ZIOP, ZYNE

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