

Wong's **BioTech Stock Report**

February 2008

Volume 11, Issue 12

The investment report that gives you the essentials to wisely invest in biotechnology securities.

BioScope

BioAnalysis 1-6

Company Bio 7-8

BioUpdates 8-11

BioPortfolio 12-15

BioIndices 16

Current Issue BSR # 132

Username:

Password:

Login at <http://www.biotechsage.com>

Effective: January 26, 2008

To order visit www.biotechsage.com
or call (503) 649-1355

Concerns or comments :
info@biotechsage.com

2008 Outlook

Despite the fact that bellwether biotechs, Amgen and Genentech, suffered disappointing performances in 2007, the NASDAQ Biotech Index, NBI, rose 4.9% compared to the large cap biotech index BTK (+4.6%) and S&P500 (+3.5%). The better than expected NBI performance was due to encouraging clinical outcomes from **Onyx's (NASDAQ: ONYX: \$46.76)** Nexavar for kidney and liver cancer, combined with acquisitions of Pharmion by **Celgene (NASDAQ: CELG: \$52.09)**, and **MGI Pharma (NASDAQ: MOGN: \$41.00)** by Eisai, a large Japanese pharmaceutical company.

Unlike most years which end with a bullish year-end rally in biotechnology, 2007 turned out to be an exception. Fourth quarter performance started out on a solid footing, but lost some ground largely due to macro factors such as the subprime-credit crisis/ensuing credit crunch, housing downturn and sluggish growth forecasts for 2008. With that in mind, big market swings are expected to continue, and

investors may employ defensive strategies and/or favor large, dividend-paying companies with steady, predictable earnings, strong free cash flow and a multinational footprint. However, volatility creates opportunity, and there will be pockets of value for long-term investment, particularly among some of the beaten-down stocks.

What else should one expect to see in 2008 for the biotechs? We believe merger and acquisition (M&A) activity and collaborations will continue to play an important role in biotech as large-cap pharma/biotech's need to strengthen internal pipelines. Lower interest rates should also help stimulate these activities, as companies try to preserve cash to fuel their developing pipelines.

Unfortunately, we also foresee a reduction in the number of approvals granted to new drugs/biologics by the Food and Drug Administration (FDA) in 2008. In 2007, the FDA approved 18 new drugs/biologics for market, a number that is the lowest

since 1983. Comparing this to 2006, the approvals for 2007 were down by roughly 20%, whereas the number of “approvables” rose by about 50%. This dichotomy is largely driven by a combination of (1); the FDA’s progressively risk averse stance, and (2), a shortage of promising drugs in pipeline. Many of the drugs under FDA review or in development are variations of existing medicines; and it appears that the FDA does not see a sufficient reason to approve products unless there is a unique role defined in the marketplace. Potential new drug approvals for 2008 include; rilonacept (IL-1 Trap) from **Regeneron** (NASDAQ: REGN: \$22.32), Treanda from **Cephalon** (NASDAQ: CEPH: \$69.13), and aztreonam from **Gilead Sciences** (NASDAQ: GILD: \$45.60). This dismal number not only represents increased FDA hawkishness on new drug/biologics approvals, but also a longer-term trend towards declining research productivity. To supplement this decline, firms rich with pipelines and/or technology platforms will continue to be coveted targets by their larger peers. Therefore, M&A will continue to remain ripe in the biotech sector, however, acquirers will be selective, similar to 2007, where they passed on **PDL Biopharma** (NASDAQ: PDLI: \$14.55) and **Bio-gen-Idec** (NASDAQ: BIIB: \$58.13). Acquirers will focus on fundamental-driven, product-focused companies with modest exposure to the CMS- (Centers for Medicare & Medicaid Services) related reimbursement issues (particularly heading into an election year) and FDA’s regulatory action.

Even though the market has been turbulent, the biotech sector has held steady, biotechnology continues to be the engine of innovation for the drug development industry, providing cutting-edge platforms, technologies, and pipelines. So, in this issue, we will focus some top picks for 2008 excluding the ones in our BioPortfolio. We believe for long term, these are well positioned for potential upside from current levels.

One biotech that we think is interesting is **Cougar Biotechnology** (NASDAQ: CGRB: \$28.80). Cougar has three compounds in clinical trials. Two are in Phase I clinical trials. Their first drug candidate CB3304 (noscapiene), is inhibitor of microtubule dynamics. The Phase I trial of CB3304 is an open label, dose escalating study to evaluate the safety and efficacy of CB3304 administered daily to patients with relapsed or refractory multiple myeloma. CB3304 is an orally active alkaloid derived from opium. The company reports that pre-clinical studies demonstrated that CB3304 alters microtubule dynamics; blocks cell division (mitosis) and causes apoptosis (programmed cell death).

Cougar’s second compound in Phase I clinical trials is seocalcitol (CB1089), an analog of calcitriol, an active metabolite of vitamin D. Seocalcitol has been shown, in pre-clinical cancer studies, to be 50-200 times more potent than calcitriol with respect to regulation of cell growth and differentiation. Importantly, pre-clinical studies indicate that seocalcitol has reduced calcemic activity

compared to calcitriol, significantly reducing the incidence of hypercalcemia, which has been a concern for calcitriol administration.

Cougar’s lead drug candidate is CB7630 (abiraterone acetate). CB7630 is an orally administered inhibitor of the steroidal enzyme 17 α -hydroxylase/C17,20 lyase, a cytochrome p450 complex that is involved in testosterone production. Most medical scientists involved in prostate cancer believe that testosterone levels in the testes and adrenals stimulate the growth of prostate cancer cells. In pre-clinical and clinical studies, CB7630 has demonstrated the ability to selectively inhibit the target enzyme, resulting in inhibition of testosterone production in both the adrenals and the testes.

Potential applications of CB7630 include (1) serving as second-line hormonal therapy for patients with hormone refractory prostate cancer who have failed first-line hormone therapy; (2) serving as first-line hormonal therapy for patients with advanced prostate cancer who have not yet undergone traditional LHRH agonist and/or anti-androgen therapy; and (3) serving as second-line chemotherapy for patients with advanced prostate cancer who have failed treatment with docetaxel-based chemotherapy.

CB7630 is currently in Phase II clinical trials to treat prostate cancer in patients with advanced prostate cancer. In the trial, CB7630 is administered orally, once daily, to patients with castration resistant prostate cancer who have failed treatment with androgen deprivation therapy and

failed treatment with first line docetaxel-based chemotherapy.

An update of the ongoing trial was provided in November 2007 at a Chemotherapy Foundation Symposium held in New York City. At the meeting, the lead investigator reported that 10 patients have been treated in the Phase II trial and that CB7630 was well tolerated with only minimal toxicity in this post-docetaxel population. Of the 10 patients treated, 4 patients (40%) experienced a confirmed decline in prostate specific antigen (PSA) levels of greater than 50%. Of the 5 evaluable patients with measurable tumor lesions, 1 patient (20%) experienced a partial radiological response. A total of 44 patients have been enrolled in the trial, which is still recruiting.

The million dollar question is how good are the company's compounds? Based upon pre-clinical and early clinical data the compounds look to have promise, specifically CB7630. For example, an earlier study of CB7630 looks good. Specifically, a Phase I/II clinical study reported that of 38 patients treated with CB7630 at doses as high as 2000 milligrams per day there were few reported toxicities. More importantly, of 30 patients who were evaluable in the Phase I/II trial, 18 patients (60%) experienced confirmed declines in PSA levels of greater than 50%, with 10 of the 30 patients (33%) experiencing PSA declines of greater than 90%. Of the 20 evaluable patients with measurable tumor lesions, treatment with CB7630 resulted in partial radiological responses in 11 patients (55%), with 7

patients demonstrating ongoing stable disease and 3 patients experienced regressing bone disease. Individual patients treated with CB7630 also experienced improvement in pain and a reduction in opioid use.

Equally encouraging data was the report that 27 of the 30 patients in the Phase I/II clinical trial remained on study to continue treatment with CB7630. Continued treatment is a good sign as these patients are frequently, if not always, patients with advanced prostate cancer in desperate need of an effective treatment.

Cougar is a relatively new biotech that came out with an IPO almost a year ago in February 2007. The stock originally opened at \$9.75 and quickly rose to \$17.50. Interest in the company was fueled early on with the clinical data from the two drug candidates. Having something in clinical trials is always helpful and performing relatively well in the clinics never hurts. The stock has risen considerably and is now trading at almost \$30 per share, \$4 dollars below its 52-week high. We think interest will retreat further as the company's three drug candidates are in early clinical development. A good entry price will be somewhere in the teens as interest contracts and investors' start removing profits from the table. Keep in mind though that prostate cancer is an important market and there are no effective treatments to cure individuals with prostate cancer. **Dendreon's (NASDAQ: DNDN: \$6.21)** Provenge is probably the furthest along in clinical trials, but we think there is room for other effective therapies to combat

prostate cancer, which claimed the lives of more than 27,000 men last year.

Another biotech that is interesting is **Acorda Therapeutics, Inc. (NASDAQ: ACOR: \$22.31)**. Acorda is currently in Phase III clinical trials with their lead compound, Fampridine-SR for treating multiple sclerosis (MS). Fampridine-SR is an investigational oral, sustained-release tablet formulation of 4-aminopyridine. In laboratory studies Fampridine has been found to improve impulse conduction in nerve fibers in which the insulating myelin layer surrounding neurons has been damaged. Fampridine-SR's major action is to block specialized potassium channels on axons. The company maintains that Fampridine-SR essentially plugs the leaking potassium channels and permits the axon to transmit impulses again, even in a demyelinated state.

The fully enrolled Phase III clinical trial is designed to evaluate the safety and efficacy of Fampridine-SR in improving walking ability in people with MS and to confirm results from an earlier Phase III clinical trial. Approximately 240 patients were enrolled at 39 clinical trial sites in the United States and Canada. The Company expects data from the trial in the second quarter of 2008.

Acorda presented data from the earlier Phase III clinical trial in September 2006. The prospectively-designed analysis plan for the Phase III trial was based on a responder criterion, defined as a consistent improvement in walking speed, as measured with the Timed 25 Foot Walk. A

significantly greater proportion of people taking Fampridine-SR were Timed Walk Responders compared to people taking placebo (34.8% vs. 8.3%, p value < 0.0001). Increased response rate with treatment was seen across all four major (relapsing and progressive) types of MS.

The mean increase in walking speed, compared to pre-treatment, for Fampridine-SR treated Timed Walk Responders was significantly greater at every visit during the treatment period, compared to both Fampridine-SR Timed Walk Non-Responders and placebo treated patients (p value < 0.0001). The average increase in walking speed over the treatment period, compared to baseline, was 25.2% for the drug treated Timed Walk Responders vs. 4.7% for the placebo group. In follow-up visits, at two and four weeks after the end of the treatment period, Responder and Non-responder groups returned to their baseline walking speeds.

The clinical significance of the consistent response on the timed walk was validated in the trial primarily by the 12-Item Multiple Sclerosis Walking Scale (MSWS-12), a patient self-assessment of walking disability. There was a statistically significant improvement in the MSWS-12 score for walking Responders compared to Non-responders (p value < 0.001). In addition, the mean scores on all 12 questions in the MSWS-12 were better for the Responder group than the Non-responder group. Subject Global Impression and Clinician Global Impression scales were used as secondary validators of clinical meaningfulness. Both measures also showed statisti-

cally significant improvement among Responders compared to Non-responders (p = 0.0010 and p less than 0.0001, respectively). Statistically significant increases in leg strength, as measured by the Lower Extremity Manual Muscle Test (LEMMT), were seen in both the drug-treated Timed Walk Responders (p = 0.0002) and the drug-treated Non-responders (p = 0.046), compared to placebo-treated patients.

In an unplanned, direct comparison of Fampridine-SR vs. placebo-treated groups, the following measures were significantly improved in the Fampridine-SR-treated group: mean change in walking speed (p value = 0.0004), mean change in the LEMMT (p value = 0.0029), and mean change in the Ashworth score for spasticity (p value = 0.021).

Release of this Phase III data created a huge surge in Acorda's share price from just over \$2.00 per share to over \$10 per share in two days. Since then, the stock has steadily risen to its current value of almost \$24 dollars. If the subsequent Phase III clinical trial is capable of recapitulating the early Phase III clinical data, we see Acorda's shares rising further. What is important to note is that the Fampridine-SR needs to be taken continuously as early results showed discontinuation led to relapse of disease. This means continued revenue for Acorda and share price appreciation for investors.

Acorda is also evaluating a novel recombinant human monoclonal antibody that appears to stimulate myelin repair. In collaboration with the Mayo Clinic, the company found that ad-

ministration of a single low dose of the antibody in a laboratory mouse model of MS resulted in myelin repair, the insulating covering over nerve fibers in the central nervous system. The antibody, which was genetically engineered for large-scale production, binds to myelin and the surface of cells in the brain and spinal cord, triggering the cells to begin the repair process called remyelination.

The antibody is being developed by Mayo Clinic and Acorda Therapeutics. Under a license agreement between Acorda and Mayo Clinic, Acorda holds exclusive worldwide rights to certain patents and other intellectual property for this antibody related to use and treatment of central nervous system disorders, including multiple sclerosis. Both Acorda and Mayo will be working on the steps leading to a future Investigational New Drug Application (IND) and a Phase 1 clinical trial.

As you may well know, MS is a chronic, usually progressive disease of the central nervous system in which the immune system attacks and destroys the structure, and therefore degrades the function, of nerve cells. According to the National Multiple Sclerosis Society, approximately 400,000 Americans have MS, and every week about 200 people are newly diagnosed. Most are between the ages of 20 and 50, and women are affected two to three times as much as men. Worldwide, MS may affect 2.5 million individuals. Thus, the need for effective therapies to treat MS, beyond those marketed by Biogen-Idec, **Elan (NYSE: ELN: 23.28)**, **Merck-Serono**, and **Teva Pharmaceuticals**

(NASDAQ: TEVA: \$45.13) is absolutely necessary.

Another biotech that is interesting is **Synta Pharmaceuticals Corp.** (NASDAQ: SNTA: \$6.73). Synta has three candidate compounds in clinical trials, two to treat cancer and one for inflammation. The first drug candidate is STA-9090, a novel heat shock protein 90 (Hsp90) inhibitor with a unique chemical structure that is unrelated to the Hsp90 inhibitor geldanamycin or its family of related compounds, such as 17-AAG. STA-9090 entered its second Phase I clinical trial to test safety with a different dosing schedule.

In preclinical studies, STA-9090 has shown the ability to inhibit multiple kinases with comparable potency to, and a broader activity profile than, specific kinase inhibitors such as Gleevec, Tarceva, and Sutent. In addition, STA-9090 has shown potency 10 to 100 times greater than the geldanamycin family of Hsp90 inhibitors, as well as activity against a wider range of kinases. In *in vivo* models, STA-9090 has shown strong efficacy in a wide range of cancer types, including cancers resistant to Gleevec, Tarceva, and Sutent.

Hsp90 is an emerging therapeutic target of interest for the treatment of cancer. It is responsible for modulating cellular response to stress by maintaining the function of numerous signaling proteins - known as 'client proteins' - that are associated with cancer cell survival and proliferation. Many cancers result from specific mutations in, or aberrant expression of, these client proteins. Examples of can-

cer-associated client proteins of Hsp90 include c-KIT in gastrointestinal stromal tumors, epidermal growth factor receptor (EGFR) in lung cancer, and BCR-ABL in chronic myelogenous leukemia. In preclinical studies, inhibiting Hsp90 causes the degradation of these proteins and cancer cell death. Inhibiting Hsp90 has also proven effective in killing cancer cells that have developed resistance to targeted therapies such as kinase inhibitors.

The second candidate is STA-5326 (Apilimod), an orally administered, small molecule that inhibits the production of the cytokines interleukin-12 (IL-12) and interleukin-23 (IL-23). IL-12 and IL-23 are considered to be important regulators associated with autoimmune and inflammatory diseases. STA-5326 functions by shutting down IL-12 and IL-23 gene expression through the prevention of nuclear translocation of c-Rel, a transcription factor required for IL-12 expression. Preclinical studies demonstrated the successful inhibition of IL-12 and IL-23 production by the drug.

In the clinical setting, STA-5326 has been generally well tolerated, with mild-to-moderate side effects reported, including headaches and nausea. Patients with Crohn's disease (CD) responded within 14 days of treatment with STA-5326 and, after 28 days, the drug significantly reduced the CD activity index (CDAI). STA-5326 is currently in Phase II clinical trials for rheumatoid arthritis, common variable immunodeficiency and CD. From the data available to date, STA-5326 appears to be a promising treatment for CD, and the oral formulation of this

compound provides an advantage for STA-5326 over injectable therapies.

Synta's third compound in clinical development is STA-4783, also referred to as elesclomol. STA-4783 is a new compound that causes cells to produce excess reactive oxygen species (ROS), making these cells much more sensitive to the other chemotherapeutic compounds such as Taxol (paclitaxel). In preclinical studies, STA-4783 markedly enhanced the therapeutic index of paclitaxel against human tumor xenograft models. Based upon these animal data, the company initiated a Phase I clinical trial to determine the maximum tolerated dose, toxicity profile, and pharmacokinetics of STA-4783 in combination with paclitaxel. In this study, 35 adult patients with refractory solid tumors concurrently received STA-4783 and paclitaxel as a 3-hour intravenous infusion at two starting doses. After increasing paclitaxel, the STA-4783 dose was escalated as permitted by dose-limiting toxicity during the first 21-day cycle. The study determined that STA-4783/paclitaxel combination was well tolerated with a toxicity profile similar to single-agent paclitaxel. Enhanced systemic exposure to paclitaxel resulting from a dose-dependent interaction with STA-4783 was associated with increased toxicity. Objective responses were observed in two heavily pretreated patients, both with taxane prior exposure. From this the company and study collaborators expanded the treatment to other solid tumors.

STA-4783 is currently in Phase III clinical trials to treat melanoma

after encouraging Phase II clinical studies. In the Phase II trial, 81 patients with metastatic melanoma were randomly assigned to receive either paclitaxel plus STA-4783, or paclitaxel alone. Patients taking STA-4783 had a median progression-free survival of 3.7 months, compared with 1.8 months for those in the control arm—a statistically significant difference. Moreover, 35% of patients were progression free in the combination arm at 6 months versus 15% in the control arm.

From the accumulation of clinical data thus far, we think Synta is a promising biotech company. For more information on Synta, please turn to page 7.

Another biotech that is interesting is **ArQule (NASDAQ: ARQL: \$4.49)**. ArQule has three drug candidates in clinical trials. The first is ARQ 197, a small molecule inhibitor. ARQ 197 is designed to block the activity of a molecule known as c-Met that plays multiple key roles in human cancer, including cancer cell growth, survival, angiogenesis, invasion and metastasis (the spread of cancer from one part of the body to another). c-Met is inappropriately expressed in almost all types of human cancer, with an established role in tumor development.

c-Met is a member of a class of enzymes known as receptor tyrosine kinases that have emerged with significant potential for anti-cancer therapy. The encouraging results seen with agents such as Gleevec against cancers with the constitutively active Bcr-Abl mutation, as well as Tarceva, an inhibitor of mutated and over-expressed EGF receptor kinase, have

provided an important proof-of-principle that molecularly targeted receptor tyrosine kinases inhibitors can have an important and broad impact against various cancers.

ARQ 197 is currently being evaluated in Phase II clinical trials for pancreatic cancer. The trial just started in October 2007, so the company and study coordinators are enrolling patients. The study will evaluate and compare progression-free survival in the two groups of patients. One group treated with ARQ 197 and the second with gemcitabine. Secondary objectives include the evaluation of overall response rate and one-year overall survival rates in both groups. Keep in mind that pancreatic cancer is essentially incurable.

ArQule's second compound in development is ARQ 501, an intravenously administered drug that has completed proof-of-principle Phase II clinical trials consisting of monotherapy trials in leiomyosarcoma and head and neck cancer, and a combination therapy trial in pancreatic cancer with gemcitabine.

The third compound is ARQ 171, another intravenously administered drug that is in a dose-escalation Phase I clinical trial among patients with solid tumors.

ArQule is deciding how far they will take these two last compounds as further development of these compounds is subject to a decision by Roche regarding its option to license rights to ArQule's E2F-1 program, which includes ARQ 501 and ARQ 171.

At this time, we think ArQule is a budding biotech that has promising

compounds in early clinical development. How well ArQule will do in the future depends on the results from Phase II clinical trials. If they are promising, ArQule could be a good candidate for M&A, as the product candidates will have less risk for a larger biotech or Big Pharma to move forward. Having said this, we recommend watching ArQule as the share price (\$4.70) is retreating from earlier highs of almost \$10 per share. We think the share price has a good chance of appreciating on positive news prior to this year's annual American Society of Clinical Oncology meeting at the end of May.

Final words

Picking promising biotech companies for investment is a time consuming process. For those not familiar with biotechnology and medical research, this can be a daunting task. Our goal at Wong's Biotech Stock Report is to make this process easier by identifying promising biotech companies with good to outstanding product pipelines. In this issue, we highlighted four biotechs, Cougar, Acorda, Synta and ArQule that have promising pipelines. Of these, we think Cougar, Acorda and Synta are good bets, but would wait a little longer on ArQule until more clinical data is announced. \$\$

Synta Pharmaceuticals

Synta Pharmaceuticals, Inc. (NASDAQ: SNTA) is a biopharmaceutical company involved in the discovery, development, and commercialization of small molecule drugs to treat melanoma, other forms of cancer, and chronic inflammatory diseases. In February 2007, Synta raised \$50 million through an IPO which was priced at \$10.00 per share.

Synta does not have any marketed drugs. Its lead drug candidate, elesclomol (STA-4783), is an injectable, small molecule compound with potential for the treatment of solid tumor cancers. Elesclomol kills cancer cells by elevating oxidative stress levels beyond a breaking point, triggering programmed cell death.

Currently, elesclomol is in a Phase III clinical trial, SYMMETRY, to test the drug as a front-line treatment for metastatic melanoma, and it received fast-track designation from the FDA in November 2006. The study will enroll approximately 630 chemotherapy naïve patients in a double-blinded study comparing elesclomol plus paclitaxel vs. paclitaxel alone in 150 centers worldwide. Interim safety and non-futility data will be provided in 2008 with the final, primary-endpoint PFS (progression free survival) data and overall survival as a secondary endpoint expected by the end of 2008. If PFS results are positive in late 2008, the company would file an NDA for elesclomol in the first half of 2009.

On October 8, 2007, Synta and

GlaxoSmithKline (GSK) entered into a very substantial partnership for elesclomol. Under the terms of the agreement, Synta received an upfront payment of \$80 million plus as much as \$885 million in payments tied to the drug reaching developmental, regulatory, and sales milestones. GlaxoSmithKline also has an option, subject to Synta's agreement, to buy as much as \$45 million of Synta's stock as certain milestones are reached. The strong economics of the collaboration validates the novel mechanism of action of elesclomol. In addition, the partnership with GSK also validates the drug's robust Phase II study results.

Additionally, Synta is developing STA-9090 (Hsp90 inhibitor) and STA-9584 (vascular disrupting agent) for oncology and STA-5326 (oral IL-12-23 inhibitor) for inflammation.

STA-9090 is in a Phase I dose escalating trial. The trial is a single ascending dose study evaluating a twice a week dosing schedule to evaluate for safety and tolerability, as well as response rate based on RECIST (Response Evaluation Criteria in Solid Tumors) criteria. A second Phase I study with once-weekly dosing was initiated in early December 2007. In preclinical studies, STA-9090 has demonstrated potency ten to 100 times greater than other Hsp90 inhibitors, as well as potent activity against highly resistant cancers. Preliminary data for the Hsp90 inhibitor STA-9090 is expected in the first quarter of 2008.

Hsp90 is a chaperone protein that regulates the folding, stability, and function of various signaling proteins that can trigger the proliferation of cancer cells. Therefore, inhibition of Hsp90 may provide a means to simultaneously attack multiple cancer pathways.

Among Synta's other drugs, STA-5326 is an orally administered, small-molecule drug candidate is being developed for the treatment of autoimmune and other chronic inflammatory diseases. STA-5326 inhibits the production of the cytokines interleukin-12 (IL-12) and interleukin-23 (IL-23), which are believed to be important regulators of the biological processes underlying certain autoimmune and inflammatory diseases. The IL-12 cytokine family (including IL-12 and IL-23) is the master regulator of the TH1 pathway, which drives major chronic inflammatory diseases, including Crohn's disease, psoriasis, rheumatoid arthritis, and multiple sclerosis.

Synta is conducting a Phase II clinical trial of STA-5326 in patients with rheumatoid arthritis, as well as a Phase II clinical trial in patients with common variable immunodeficiency.

Within tumors, the growth of thousands of tumor cells requires the support of single, fragile blood vessels that, like tumor cells, rapidly proliferate. STA-9584 targets tumor vessels (tumor vasculature) and can, therefore, starve tumor cells of oxygen and nutrients, leading to the rapid death of these cells. This vascular disrupting

BioTech Stock Updates

approach contrasts with anti-angiogenic approaches that inhibit the growth of new tumor vasculature through protracted drug administration. Tests in tumor models have demonstrated robust, rapid efficacy of this vascular disrupting agent both in chemotherapy-sensitive and -resistant tumors, as well as a promising safety profile.

STA-9584 is in the preclinical stage.

Since its inception, Synta has completed three strategic growth acquisitions – the most important being Principia Associates, Inc., in September 2002, for in-process research and technology for the development of STA-4783.

In addition, Synta is executing extremely well on their four stated goals, maximize the value of elesclomol, build oncology commercial capabilities, get their other drugs ready for clinical development, and continue to generate new drugs. Synta should benefit from the fact that few other competing agents are in large Phase III trials for metastatic melanoma. While the timelines set forth by Synta are aggressive, the company can potentially achieve them within the bounds that it has set. Target price is \$12 and we will add Synta to our BioPortfolio. \$\$

This section is to update and inform our readers of significant news about those stocks that are in our BioPortfolio, and to provide insight on market conditions that will influence the biotech sector.

As the New Year began, the biotech sector performed quite nicely as both of the biotech indexes have shown strong performance over the past weeks. It was nice to see the breadth of the strength across the sector. Given the recent market turmoils, we expect 2008 to be a selective year for biotech stocks, as investors will focus primarily on names with near-term catalysts.

Amgen (BSR #74: Rheumatoid Arthritis) said its 2007 EPS was \$4.29. Also, management has provided 2008 EPS projection of \$4.00-\$4.30, lower than Wall Street's expectations.

For 2008, an Oncology Drug Advisory Committee meeting will focus on erythropoiesis-stimulating agent in March 2008, which could be a chance for the FDA to further restrict the label in order to bring the label more in line with the National Council on Disabilities. In addition, Denosumab's post-menopausal osteoporosis data will emerge, ten molecules will advance to mid-stage clinical trials, and partners will be sought for pipeline products.

Despite the potential for **Ariad's/ NASDAQ: ARIA (BSR #106:** Halting Leukemia) deforolimus, a potent mTOR inhibitor, as a new targeted cancer therapy, even though the mTOR protein kinase has been validated as a promising target for new

cancer therapies, and Ariad's share price continues to lag. There are two mTOR inhibitors currently on the market, Wyeth's Torisel for advanced renal cell carcinoma and Rapamune for prevention of organ rejection following kidney transplant. Partner Merck and Ariad are conducting/planning multiple trials for advanced sarcomas currently in Phase III, advanced endometrial cancer expected to enter Phase IIb/III in the first half of 2008, and additional cancer indications (breast, prostate, and non-small cell lung cancers) in 2008-2010. Wall Street does not appreciate the potential market opportunities for mTOR inhibitors in multiple cancer indications. We think that deforolimus, in partnership with Merck, is well positioned to capture significant market share in targeted cancer therapy, a class as a whole that is expected to generate \$30 billion in 2009 sales from up \$10 billion in 2005.

Established in July 2007, Merck's financial commitment to the program - in excess of \$1 billion - is a testament to the commercial potential of deforolimus.

Currently deforolimus is in Phase III for advanced sarcomas, SUCCEED (Sarcoma Multi-Center Clinical Evaluation of the Efficacy of Deforolimus). Initiated in September 2007 under the FDA's special protocol assessment, the Phase III study is designed to show superiority in progression-free survival (PFS, primary endpoint) in patients with advanced bone and soft tissue sarcomas with two built-in interim efficacy analyses. Secondary endpoints include overall survival, antitumor response, change in

cancer-related symptoms, safety, and tolerability. Ariad expects patient enrollment completion in the third quarter of 2009 (approximately two years from the start of patient enrollment), with a follow-up for survival data expected to last for two to five years post randomization. An estimated first interim look is to take place in the second half of 2008/first half of 2009 and a second interim analysis in the second half of 2009. Deforolimus has received both fast-track and orphan drug designation from the FDA and orphan drug designation from EMEA for bone and soft tissue sarcomas.

In Phase II, deforolimus showed a durable response in 29% of treated patients, which is highly correlated with PFS in this difficult-to-treat patient population. The estimated peak global annual sale for this indication is \$450 million and deforolimus as a treatment for advanced sarcomas represents an innovative clinical path to fast market entry given this limited treatment options on the market or in development. Anticipated market launch is in 2011.

Sarcoma is a cancer of the connective tissue, accounting for about 1% of all cancer cases in the United States. It is estimated that in 2007, approximately 11,590 people were diagnosed with some form of sarcoma, with 4,890 deaths in the U.S. The main types are bone (20% of all cases) and soft tissue sarcomas (80%). Standard treatment for sarcomas includes surgery, and adjuvant chemo and/or radiation therapy. However, prognosis is usually poor, with responses lasting less than six months. Radiation alone in unresectable soft tissue sarcomas has demonstrated response rates up to 50%, while radiation combination with chemotherapy has shown modest additional benefits.

Phase IIb/III initiation of deforolimus in advanced endometrial cancer should begin in the first half of 2008, Phase I initiation of AP24534 for chronic myeloid leukemia in the first quarter of 2008; and the release of full Phase Ib oral deforolimus data at the 2008 ASCO meeting in Chicago.

While deforolimus is a promising drug for sarcoma and potentially other indications, certain investors may not want to hold Ariad's shares for that long, without any meaningful stock-driving catalysts anticipated. Nonetheless, we maintain our target price of \$9.

Genzyme/NASDAQ: GENZ (BSR #8: Cardiovascular) and Isis Pharmaceuticals announced they have entered into a strategic alliance in which Genzyme will develop and commercialize mipomersen, initially for the treatment of familial hypercholesterolemia (FH). Pursuant to the agreement, Genzyme will pay Isis a \$175 million up-front fee and make a \$150 million investment in Isis at \$30 per share. Isis can also potentially receive up to \$825 million in development and regulatory milestone payments and up to \$750 million in commercial milestone payments. Genzyme and Isis will share mipomersen profits, starting with a 70/30 Genzyme/Isis split and reaching 50/50 on a sliding scale as annual revenues ramp up to \$2 billion. (If mipomersen is successfully developed for all hyperlipidemia indications, its peak sales can easily reach \$2 billion.)

Mipomersen is a second generation antisense drug designed to lower lipid by targeting apolipoprotein B-100. Mipomersen has been shown in Phase II trials to reduce cholesterol and other atherogenic lipids by >40% above that achieved by current stan-

dard lipid-lowering drugs. Mipomersen is being developed for patients who are unable to achieve target cholesterol levels with statins alone, as well as for those who are intolerant of statins. Hence, mipomersen has potential to enable more patients to achieve lipid control. Mipomersen is currently in a Phase III trial in patients with FH.

Genzyme and Isis believe a 40-60 patient trial will allow an NDA filing in 2009 for homozygous FH (HoFH). Isis is still in negotiation with the FDA on the Phase III trial protocol in patients with heterozygous FH (HeFH). Although the efficacy results so far are clearly positive, however, liver toxicity (elevation of bilirubin) remains unresolved.

Genzyme management has maintained its financial guidance of non-GAAP of \$4.00 per share in 2008 and 20% annual compound growth going forward to 2011.

On January 23, 2008, **Human Genome Sciences/NASDAQ: HGSI** (BSR #116: In Need of a Cure) announced that it is reducing Albuferon dosing in two ongoing Phase III studies (ACHIEVE 1 and 2) for chronic hepatitis C. At the recommendation of the Data Monitor Committee, Human Genome Sciences reduced the 1200 µg dose to 900 µg in both studies due to higher rate of serious pulmonary adverse events (cough and dyspnea). In earlier Phase II trials, there was a high drop out rate in the 1200 µg dosing group due to side effects. Human Genome Sciences reassured investors that the 900 µg dosing group is safe, and severe pulmonary adverse events seen in the 1200 µg group are rare and occur mostly in the first 12-24 weeks. No safety concerns were cited with the lower dose.

Human Genome Science contin-

ues to expect to have all Phase III data available by spring 2009 to support the filing of global marketing authorization applications by fall 2009.

With these reported safety concerns relating to a high dosage of Albuferon, shares of Human Genome Sciences lost more than a third of their value, plummeting to a 12-year low.

Despite the negative the market's reaction to the news, we remain positive on Albuferon. Albuferon will offer an alternative to current treatment options such Pegasys since Albuferon will require fewer injections and missed days at work.

Human Genome Sciences should stage a turnaround in its share price based on forthcoming news. Major events in 2008 include delivery of ABthrax doses for the Strategic National Stockpile and a \$115 million payment from the U.S. Government in late 2008; HGS-ETR1 Phase II results; and Velcade combo in multiple myeloma in mid-2008.

The company plans to deliver 20,000 doses of ABthrax in the second half of 2008 and expects to receive 70% of \$165 million from the U.S. Government upon delivery. Human Genome Sciences still needs one additional large safety study in human volunteers, expected in 2008, for FDA approval. It will receive the remaining payment of \$50 million upon FDA approval, which is expected in 2009.

As **PDL BioPharma/NASDAQ: PDLI** (BSR #18: Leukemia) continues to reshape itself with the selling of its key assets, there has been very little news regarding a potential buyout. As the company goes forward, PDL BioPharma will focus on its core monoclonal antibody expertise, revolving around early stage and more solid discoveries. Hence, we will change our

buy to a hold, and recommend investors wait on the sidelines for further news on the pipeline development as well as pending monetization of the company's assets. Future news flow will focus on clinical trial data and initiation of the company's early-stage pipeline. We expect follow-ups on the company's strategic alternatives in the quarters ahead, but given the uncertainty with its pipeline, we will drop PDL BioPharma from our BioPortfolio.

In early January 2008, **Theravance/NASDAQ: THRX** (BSR #113: Pipeline Stories) and its partner GlaxoSmithKline (GSK) announced the initiation of Phase IIb trials in the Beyond Advair collaboration as expected, but the size of the program is larger than anticipated. The asthma study will be a 600 patient dose-optimization study with their long-acting beta agonist (LABA) '444. Phase IIb data from these trials is likely to be available by year end, which puts the program on track to move into Phase III testing by 2009. In addition, GSK has advanced their lead inhaled corticosteroid, '698, into similar large Phase IIb clinical trials. In parallel, combination studies will be done to enable both '444 and '698 to enter Phase III trials. Phase IIb trials with '444 in chronic obstructive pulmonary disease are expected to start in the first half of 2008.

Also, Theravance announced that the FDA has notified the company that the Anti-Infective Drugs Advisory Committee (AIDAC) will review the NDA for telavancin. The company expects telavancin to be reviewed at the February 27-28 AIDAC meeting. Theravance stock traded down on this news because of the added uncertainty of an advisory committee meeting in

late February. One possible explanation for the FDA panel is that it is simply a reflection of the newly reauthorized PDUFA, which requires referral to an advisory committee for all new chemical entities. However, little is known about the contents of the recent approvable letter. Thus, the stock is likely to remain under pressure heading into the FDA advisory committee meeting for telavancin; the likely outcome from that meeting will be a recommendation for approval despite what will likely be a difficult discussion around renal toxicity, QT prolongation, and potentially efficacy in subsets, such as the known cardiac and renal toxicity with telavancin. Still, with an approvable letter in hand there is the possible outcome of an approval. There is a silver lining - the recently announced positive hospital acquired pneumonia (HAP) data with Theravance's plans to file an NDA in the first half of 2008 with an anticipated approval in 2009.

While the stock has been under significant pressure from concerns over their antibiotic, telavancin, the Beyond Advair program should drive value for Theravance as they will receive a double digit royalty on global sales of about \$4 billion. In addition to telavancin and Beyond Advair, Theravance has multiple compounds in Phase II testing or beyond, including a novel antibiotic, TD-1792; a serotonin inhibitor for GI motility disorders, TD-5108; and the muscarinic antagonist beta agonist also being studied in Phase II under the collaboration with GSK.

After a few hiccups at the FDA, Theravance is trading near a low and its shares represent a buying opportunity, but will revise our price target from \$34 to \$31.

On January 23, 2008, **Vertex/NASDAQ: VRTX** (BSR #101: Life After ASCO) announced it has completed its pre-Phase III discussions with the FDA for telaprevir as a treatment for hepatitis C virus (HCV). Vertex said it will begin Phase III trial of telaprevir, a protease inhibitor. The primary focus will be a global, 3-arm pivotal controlled trial that will evaluate two 24-week telaprevir-based regimens in approximately 1050 treatment-naïve genotype 1 HCV patients. In this study, rapid viral response criteria will be used to determine which telaprevir patients can stop all treatment at 24 weeks. A second study of approximately 400-500 HCV patients is planned to evaluate a 48-week telaprevir-based regimen, to confirm the results from Phase II studies and provide additional evidence that supports the 24-week regimen that is being evaluated in the primary Phase III trial. Vertex expects that both studies will run concurrently and that the first trial will begin enrolling patients in March 2008. The primary endpoint of the study will be to show that 24-week treatment with telaprevir results in a higher sustained virologic response than current standard of care. Final data from both trials anticipated in mid-2010.

At the November 2007 AASLD meeting, Vertex presented data that unequivocally showed meaningful telaprevir activity over a 24-week treatment period in patients with genotype 1 HCV infection, but Vertex's share price fell into the doldrums. Despite, Telaprevir's superiority in terms of treatment duration (cut it from 48-weeks to 24-weeks) and sustained viral response to standard of care, there was a concern on regarding telaprevir's developmental timeline. This design is a much larger and more time consum-

ing than currently expected by the Street and pushes out a potential telaprevir market launch to 2012 instead of Vertex's original projection of 2010. Thus the competition may snatch first-to-market advantage.

Vertex plans to release telaprevir's Phase II dosing data in patients with treatment resistant hepatitis C in next several months, but with the lack of any major news in the next two years has put additional pressure on Vertex's shares. We will reduce our target from \$40 to \$34 due to the Street's concerns, but strongly feel that telaprevir is a drug that is moving positively in its clinical development and will eventually prove the nay sayers wrong.

On January 17, 2008, the FDA approved **Zymogenetics/NASDAQ: ZGEN** (BSR #92: Evolution) Recothrom, a recombinant human thrombin, for topical use of general hemostasis, whenever oozing blood and minor bleeding occur during surgery. With a broad and clean label, Recothrom is approved for all surgical types with no black-box warning, no warnings on pathogen infection risk. Zymogenetics is ready to launch Recothrom in two weeks and expects to receive a \$40 million cash milestone payment from Bayer in the first quarter of 2008.

Recothrom's FDA label is highly favorable compared to Thrombin JMI (bovine) and Evithrom (human plasma derived), however, Recothrom's approval will trigger a 3-way marketing war in the stand-alone thrombin market for surgical hemostasis. Zymogenetics plans to first target at gaining market share from bovine Thrombin (\$250 million sales in 2006).

With major pharmaceutical companies like King, JNJ, and Bayer/

Zymogenetics promoting three hemostasis products, the stand-alone thrombin market should expand from \$250 million 2006 to \$600 million in 2012. While Europe remains a wildcard for Recothrom as thrombin is not currently used there. Bayer plans to formulate a clinical/regulatory plan for the European market.

With regards to the U.S. market, Zymogenetics and Bayer will co-promote Recothrom for three years with a combined sales force of 150. Under the terms of this agreement, Zymogenetics will pay tiered commissions up to 20% and bonuses up to \$20 million for reaching certain U.S. sales targets. Zymogenetics will continue to pay a reduced royalty rate for two years following the co-promotion period. Even though Zymogenetics has a solid marketing partner, it has not ease fears that Recothrom will lose an uphill battle competing with JNJ's experienced and entrenched sales force that will be marketing their own pooled human thrombin product. Even though Bayer does not hold quite the same operating room presence as JNJ, its sale reps have experience selling surgical drugs to hospitals.

Meanwhile, it appears Zymogenetics will not release any important clinical data on its clinical pipeline until the second half of 2009, thus, Zymogenetics' shares value will depend upon on Recothrom in the near term. We think Recothrom has a fighting chance to gain market share and maintain our \$17 target price on Zymogenetics. \$\$

BioPortfolio

BIOPORTFOLIO: is a list of companies that lead in their application. Companies on this list are selected only for their technology leadership, without consideration of their current share price or the appropriate timing of an investment decision. The presence of a company on the list is not a recommendation to buy shares at the current price. Reference Price is the company's closing price on the Reference Date, the day the company was added to the table, typically the Thursday of the month prior to publication.

Updates are italicized. Key new flows and dates can cause a company's valuation to go up or down dramatically.

Company	Date	Reference Price	01-24 Price	% 1-mo	% YTD	% Inception	Institutional % Ownership: +/-
Aggressive Growth							
Ariad (ARIA)	11-17-05	6.16	3.63	-15.97	-14.59	-41.07	52:-1
<p>ARIA to file the IND for AP24534, a potential treatment for chronic myeloid leukemia in Q1-08. Possible release of interim Phase III clinical data of deforolimus (AP23573) for second-line metastatic sarcoma in the second half of 2008/first half of 2009 as well as the completion of patient enrollment in Q3-09. A possible release of second interim analysis in the second half of 2009 for deforolimus monotherapy for second-line metastatic sarcomas with the potential of an early NDA filing based on the data. Otherwise, NDA filing in 2010. For deforolimus, release of prostate and endometrial cancer in 2008. See current and December 2007 BioTech updates. Target Price: \$9 Rating: Buy on dips.</p>							
Cytokinetics (CYTK)	2-22-07	7.12	3.32	-35.28	-27.03	-53.37	67:-1
<p>In April 2007, CYTK initiated a Phase II trial of CK-452 as a treatment for patients with stable heart failure. CYTK to report results sometime in 2008 due to slower than anticipated patient enrollment. Target Price: \$11 Rating: Change from buy on dips to a hold due to current share price weakness.</p>							
Dendreon (DNDN)	1-30-03	5.37	6.21	-2.05	-96	15.64	39:-1
<p>On May 9, 2007, DNDN received an approvable letter from the FDA on Provenge as a treatment for hormone refractory prostate cancer. On Nov. 29, 2005, DNDN said it amended the Phase III D9902B trial in androgen-independent prostate cancer. The primary endpoint is overall survival and includes all prostate cancer, regardless of Gleason score. The trial has been renamed IMPACT and on Oct. 23, 2007, DNDN said patient enrollment was completed with an interim look expected in second half of 2008. On Nov. 8, 2006, DNDN released preliminary promising Phase III (PROTECT) data that showed Provenge prolonged the prostate-specific antigen for non-metastatic androgen-dependent prostate cancer (early stage prostate cancer). This study is designed to explore the biological activity of Provenge on recurrent prostate cancer prior to the development of metastatic disease. No timeline given, but the company hopes to announce a marketing partner for Provenge. See January 2008 BioTech updates. Target Price: \$7 Rating: Buy on dips.</p>							
Exelixis (EXEL)	6-29-06	10.00	6.85	-25.62	-21.62	-31.50	94:+1
<p>On Jan. 22, 2008, EXEL and Bristol-Myers announced that they will co-develop XL139 as a cancer treatment and EXEL will receive a \$20 mil. milestone payment. On Jan. 18, 2008, GSK decided not to opt-in on XL784 as a treatment for diabetic nephropathy. On Sept. 5, 2007, EXEL reported encouraging Phase II efficacy data for XL647 as a treatment for NSCLC with the intent to initiate Phase III clinical trials in the first half of 2008. To initiate Phase II clinical trial of XL820 in GIS, melanoma and AML in 2008. EXEL to report Phase II clinical data on XL880 as treatment for gastric cancer and head and neck cancer in 2008. Release of top-line Phase II data in GIST in the second half of 2008. Target Price: \$13 Rating: Buy on dips.</p>							

Company	Date	Reference Price	01-24 Price	% 1-mo	% YTD	% Inception	Institutional Ownership: +/-
GTx (GTXI)	2-23-06	11.53	11.50	-26.89	-16.42	-26	51:NC
<p>On Apr. 17, 2007, GTXI released Phase II data on ostarine that showed it lowered insulin resistance among elderly patients who are either diabetic or obese. GTXI is planning to initiate a Phase IIb clinical trial evaluating ostarine for the treatment of chronic kidney disease muscle wasting in 2008. On July 3, 2007, the company initiated Phase IIb trials for ostarine as a treatment to promote muscle and bone building in both men and women (cachexia) and plans to release top-line data in the summer of 2008. GTXI's Acapodene is in two pivotal Phase III clinical trials. One as a treatment for multiple side effects of androgen deprivation therapy for prostate cancer and the primary endpoint for the trial is the reduction of bone fractures in men with prostate cancer. Acapodene's final analysis will occur in Q1-08 with the intent of filing an NDA afterward. The second Phase III trial for Acapodene is as a treatment to reduce prostate cancer incidence (HGPIN-high grade prostatic intraepithelial neoplasia). The primary endpoint is the reduction of prostate cancer incidence, and the release of interim HGPIN safety and efficacy data is expected in Q1-08. Target Price: \$27 Rating: Change from buy to hold due to current weakness in its share price.</p>							
Human Genome Sciences (HGS)	10-27-06	13.02	6.03	-45.58	-46.02	-53.69	100:NC
<p>On Jan. 23, 2008, HGS announced they will change the Phase III trial dosage of Albuferon as a treatment for hepatitis C due to side-effects. There are no safety concerns on the lower dosage. HGS also said data is expected in the spring of 2009 with NDA filing in fall of 2009. On Nov. 9, 2007, HGS reported Phase II long-term safety and efficacy data on LymphoStat-B as a treatment for lupus that showed sustained improvement in disease activity and the drug was well tolerated. On May 30, 2007, HGS initiated LymphoStat-B's second Phase III clinical trial for lupus, to complete enrollment by Q1-08, and release of data mid-2009. See current BioTech Updates. Target Price: \$13 Rating: Buy</p>							
Keryx (KERX)	7-26-07	8.50	6.76	-23.36	-19.52	-20.47	100:NC
<p>On Dec. 5, 2007, Keryx said the Independent Data Safety Monitoring Committee said there are no safety concerns in the Phase III trial of Sulonex as a treatment for diabetic nephropathy, therefore there is no need to terminate or alter the current trials. Release of Sulonex's Phase III clinical data for the treatment of diabetic neuropathy in Q1-08 with a possible NDA filing in 2008. The initiation of Phase III pivotal studies of Zerenex in the first half of 2008 in hyperphosphatemia. See December 2007 BioTech Updates. Target Price: \$20 Rating: Change from buy to hold due to the current weakness in the share price.</p>							
Onyx (ONXX)	4-28-05	31.19	46.76	-17.30	-16.11	49.92	100:NC
<p>On Nov. 19, 2007, ONXX Nexavar's sBLA for liver cancer was approved. Release of Phase II Nexavar data as a first-line treatment in renal cell carcinoma in 2007. Initiate Phase II trials of Nexavar in combo with other drugs for breast cancer in 2007. The release of Phase III trial of Nexavar + chemo in NSCLC in the second half of 2008. See December 2007 BioTech Updates on Nexavar. Target Price: \$59 Rating: Change from sell to buy on dips.</p>							
Regeneron (REGN)	6-28-07	17.95	22.32	-2.79	-5.26	24.35	96:NC
<p>On June 8, 2007, REGN submitted the BLA for IL-1 Trap as a treatment for cryopyrin-associated periodic syndrome (CAPS), a rare inflammatory disease. On Nov. 1, 2007, REGN said the FDA requested additional manufacturing data for the BLA, and the PDUFA date has been extended to Feb. 28, 2008, from late November 2007. See January 2008 and December 2007 BioTech Updates on VEGF-Trap. Target Price: \$29 Rating: Buy.</p>							
Synta Pharmaceuticals (SNTA)	1-24-08		6.73	NA	NA	NA	27:NA
<p>See current write-up.</p>							

Company	Date	Reference Price	01-24 Price	% 1-mo	% YTD	% Inception	Institutional % Owner-
Theravance (THRX)	7-27-06	23.48	19.46	-10.73	.05	-17.12	90:NC

On June 25, 2007, THRX announced Phase II data that showed TD-5108 met the primary endpoint of increasing the number of spontaneous bowel movements per week in patients who suffer chronic constipation, initiation of Phase III clinical trial in 2008. On Oct. 22, 2007, the FDA gave an approvable letter for Telavancin in cSSSIs (complicated skin and skin structure infections) subject to the approval of good manufacturing practices, labeling and reanalysis of clinical data. However, no additional clinical trials are required. THRX to submit complete response to telavancin's approvable letter in Q1-08. On May 31, 2007, THRX announced the marketing authorization application to the European Medicines Authority for Telavancin for cSSSI was accepted. In December 2007, THRX reported Telavancin's Phase III data for HAP (hospital-acquired pneumonia) that was positive. Initiation of Phase III clinical trial for TD-1792 in bacteremia or HAP in 2008. See current, January 2008 and December 2007 BioTech Updates about Telavancin. **Target Price:** Revise from \$34 to \$31.

Vertex (VRTX)	6-23-05	15.52	19.26	-22.93	-16.80	24.10	95:NC
----------------------	---------	-------	-------	--------	--------	-------	-------

Initiation of Phase III studies for telaprevir in March 2008 as a treatment for hepatitis C with the release of Phase III teleprevir data in 2010. In late October 2007, VRTX reported positive Phase IIa trial of VX-702 in combo with methotrexate as a treatment for rheumatoid arthritis, but the company has decided to seek a collaborator for further development. Release of VX-770's Phase II data as a treatment for cystic fibrosis in 2008. See current and January 2008 Bio-Tech Updates on clinical progress of telaprevir. **Target Price:** Revise from \$40 to \$34. **Rating:** Buy on dips.

Xenoport (XNPT)	12-21-06	25.25	61.85	11.02	11.64	144.95	91:-3
------------------------	----------	-------	-------	-------	-------	--------	-------

On Jan. 3, 2008, XNPT has initiated Phase II clinical trials of XP19986 as a treatment for gastroesophageal reflux disease and spasticity. On Jan. 15, 2008, XNPT released the second XP13512 Phase III top-line data as a treatment in patients with restless leg syndrome for maintenance and efficacy that positive, meeting the main goal of patient relapses over a 9-month period. The final 12-week Phase III efficacy data will be released in Q1-08. The filing of XP13512's NDA filing in the third quarter of 2008. Initiation of Phase II studies of XP13512 in diabetic neuropathy pain in Q1-08. **Target Price:** \$57 **Rating:** Sell due to valuation

ZymoGenetics (ZGEN)	1-27-05	21.12	10.37	-16.77	-10.06	-50.90	61:-1
----------------------------	---------	-------	-------	--------	--------	--------	-------

On Jan. 8, 2008, ZGEN has initiated a Phase II clinical study of IL-21 with Nexavar as a treatment for renal cell cancer to test dosage and safety. On Jan. 17, 2008, ZGEN's BLA for rhThrombin for the prevention of bleeding during surgery was approved. On March 7, 2007, ZGEN said Phase III clinical trials are not needed for the spray formulation subject to rhThrombin's BLA for the prevention of bleeding during surgery. If so, possible approval of the spray formulation in mid-2008. On Dec. 13, 2007, ZGEN and partner Merck initiated Atacicept's Phase II/III study, as a treatment for systemic lupus erythematosus. On Dec. 19, 2006, ZGEN and Merck announced they initiated Phase II clinical trials of Atacicept as a treatment for patients with rheumatoid arthritis who failed TNF treatments with release of data in the second half of 2008. See current BioTech Updates. **Target Price:** \$17 **Rating:** Buy on dips.

Intermediate Growth

Celgene (CELG)	4-28-00	23.53	52.09	5.25	12.51	121.38	91:NC
-----------------------	---------	-------	-------	------	-------	--------	-------

CELG to file sNDA in the first half of 2008 for Revlimid as a front-line treatment for multiple myeloma. On Jan. 23, 2008, the European advisory committee recommended against the approval of Revlimid as a treatment for MDS. Even though Revlimid was effective the advisory panel was citing safety concerns on the drug. Initiate Revlimid's Phase III trials in CLL and NHL in 2007 with release of data in 2008. See January 2008 BioTech Updates. **Target Price:** \$68 **Rating:** Buy.

Gilead Sciences (GILD)	3-27-97	3.11	45.60	-.70	.57	1366.53	97:NC
-------------------------------	---------	------	-------	------	-----	---------	-------

GILD reported Q4-07 EPS of \$0.41 vs. consensus estimate of \$0.40. On Apr. 19, 2007, GILD released full Phase III clinical results for inhaled aztreonam lysine (Cayston) as a treatment for patients who have cystic fibrosis with pulmonary Pseudomonas aeruginosa. The data indicated significant improvement in time for the need of inhaled or IV antibiotics compared to placebo. On May 29, 2007, GILD released the second Phase III data for Cayston that met its primary endpoint of improved respiratory function. On Nov. 16, 2007, GILD filed the NDA for Cayston with potential approval in Q3-08/Q4-08. On Oct. 11, 2007, GILD filed the sNDA for Viread as a treatment for hepatitis B as well as the European marketing application with potential U.S. approval in Q3-08. Initiate Phase III clinical trials of GS9137 for HIV in Q1-08. See January 2008 BioTech Updates. **Target Price:** \$49 **Rating:** Buy on dips.

Company	Date	Reference Price	01-24 Price	% 1-mo	% YTD	% Inception	Institutional % Ownership: +/-
Stable Growth							
Amgen (AMGN)	3-27-97	14.44	46.12	-3.03	-1.03	219.45	81:NC
<p>AMGN reported Q4-07 EPS of \$1.00 vs. consensus estimate of \$0.97. On Jan. 16, 2008, AMGN and Wyeth reported Phase III data that showed children and adolescents with psoriasis who were treated with Enbrel showed significant improvement in the signs and symptoms of the disease. On Dec. 5, 2007, AMGN announced the European Union Commission has granted conditional marketing authorization of Vectibix as a treatment for metastatic colorectal cancer. On Dec. 11, 2007, AMGN released Phase III data that showed AMG-531 met its primary endpoint of increased platelet levels in patients with idiopathic thrombocytopenia purpura (ITP). AMGN filed AMG-531's BLA as a treatment for ITP in December 2007. On Dec. 17, 2007, AMGN released Phase III data on denosumab (AMG 162) as a treatment for postmenopausal osteoporosis that were positive. The release of top-line Phase III data from HALT bone loss in breast cancer patients in the first half of 2008, and for prostate cancer, interim results in the second half of 2008. The completion of Phase III clinical trial of denosumab as a treatment for osteoporosis in the second half of 2008. AMGN projects 2007 EPS of \$4.13-\$4.23. See current, January 2008 and December 2007 BioTech Updates for more info on AMGN. Target Price: \$60 Rating: Buy on dips.</p>							
Cephalon (CEPH)	5-25-06	58.38	69.13	-6.33	-3.89	18.41	100:NC
<p>On Sept. 21, 2007, CEPH filed Treanda's BLA as a treatment for chronic lymphocytic leukemia (CLL). On Dec. 31, 2007, CEPH filed the Treanda's BLA as a treatment for non-Hodgkins lymphoma (NHL). On Mar. 26, 2007, CEPH filed the European marketing application for Fentora as a treatment for cancer patients with breakthrough pain and on Jan. 23, 2008 the European committee recommended approval. Fentora's application will go forward to the European committee for final approval. The sNDA for Fentora as a treatment for breakthrough pain in opioid-tolerant patients with chronic pain was filed on Nov. 12, 2007, with potential approval in Q3-08. The filing of CEP-701's NDA in acute myelogenous leukemia in Q1-08. CEPH projects 2007 EPS guidance of \$4.40-\$4.50. Target Price: \$83 Rating: Buy on dips.</p>							
Genentech (DNA)	3-27-97	7.24	68.43	.69	1.53	372.95	36:-1
<p>DNA reported Q4-07 EDS of \$0.59. The PDUFA date for Herceptin's sBLA as a adjuvant treatment for breast cancer is Jan. 21, 2008 (HERA study). Herceptin's PDUFA, April 28, 2008 for BCIRG-006 study, adjuvant breast cancer. The PDUFA date for Rituxan's BLA as a treatment for rheumatoid arthritis patients who have poor TNF response is Jan. 28, 2008. On Dec. 5, 2007, the FDA advisory committee recommended not to approve the sBLA for Avastin as a treatment with chemo for recurrent or metastatic breast cancer. Avastin's sBLA PDUFA is Feb. 23, 2008. DNA provided 2008 EPS guidance of 3.30-\$3.45. See January 2008 BioTech Updates. Target Price: \$78. Rating: Buy.</p>							
Genzyme (GENZ)	3-27-97	12.00	74.22	-1.15	-.71	518.50	90:-2
<p>On Jan. 15, 2008, GENZ announced a license agreement with Moffit Cancer Center for its lung cancer diagnostic products. On June 20, 2007, GENZ said it has filed for approval of Synvisc-One as a treatment for pain relief from osteoporosis and on Nov. 13, 2007, the FDA requested additional data. GENZ expects approval in the second half of 2008. On Oct. 16, 2007, GENZ said the Cardiovascular and Renal Products Advisory Committee recommended that the FDA extend the use of phosphate binder in pre-dialysis patients with hyperphosphatemia. In addition, patient enrollment in Phase III trial has been completed for Renvela in hyperphosphatemic patients with chronic kidney disease who have progressed to dialysis, and GENZ intends to file an sNDA in the first half of 2008. On Aug. 2, 2007, GENZ released top-line Phase III Mozobil (stem-cell mobilizer) data for multiple myeloma. Mozobil met its primary and secondary endpoints, increasing the levels of collecting blood cells. GENZ to file Mozobil's BLA in the first half of 2008 for non-Hodgkin's lymphoma. On July 6, 2007, GENZ released data on the first of two trials of Phase III for Tolevamer as a treatment for C. difficile that was disappointing. Second Phase III trial data will be released Q1-08. GENZ projects 2007 earnings at \$3.35-\$3.40 per share. See current BioTech Updates. Target Price: \$79 Rating: Buy.</p>							

BioTech Stock Report

P.O. Box 7274

Beaverton, OR 97007-7274

First Class Mail

Place Postage Here

Performance Indicators

BioPortfolio YTD Performance	-0.86
YTD NASDAQ Biotech Index	-4.19
YTD Dow Jones Industrials	-6.68
YTD Nasdaq Composite	-10.99
Since Inception Performance	709.06

Photocopying, reproduction or quotation strictly prohibited without written permission of BioTech Stock Report.

Information contained in this newsletter is not a complete analysis of every material fact respecting any company, industry or security. The opinions and estimates herein expressed represent the current judgment of the author(s) and are subject to change. Some of the material in this report may be based upon data obtained from recognized market research firms, statistical services, or other sources that are believed to be reliable. This information has not been verified by us and we therefore cannot make any representations as to its accuracy or completeness. You agree that you bear responsibility for your own investment research and investment decisions, and that BioTech Stock Report shall not be liable for any decision made or action taken by you or others based upon reliance on news, information, or any material published by BioTech Stock Report.

ISSN 1530-8340

A one year (12 issue) subscription is \$299 (U.S. funds).

For new subscription information or renewals please write to: BioTech Stock Report P.O. Box 7274 Beaverton, OR 97007-7274

Phone: (503) 649-1355 Fax: (503) 649-4490 www.biotechsage.com or e-mail: subscribe@biotechsage.com

Copyright © 2007 by Wong & Wong Inc. All rights reserved.