Zacks Small-Cap Research

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ContraFect Corp

(CFRX-NASDAQ)

CFRX: Phase 2 Study of CF-301 in Patients with Bacteremia Underway…

Based on our probability adjusted DCF model that takes into account potential future revenues from CF-301 in bacteremia and CF-404 in influenza, CFRX is valued at $10/share. This model is highly dependent upon continued clinical success of CF-301 and CF-404 and will be adjusted accordingly based upon future clinical results.

Current Price (05/25/17)	$1.30
Valuation	**$10.00**

OUTLOOK

On May 25, 2017, ContraFect Corp. (CFRX) announced the initiation of a Phase 2 clinical trial evaluating CF-301 in patients with bacteremia caused by *Staphylococcus aureus*. There is no interim analysis planned, and the company anticipates announcing topline results in the fourth quarter of 2018.

SUMMARY DATA

52-Week High	**$3.40**
52-Week Low	**$1.20**
One-Year Return (%)	**-57.52**
Beta	**-0.79**
Average Daily Volume (sh)	**44,261**
Shares Outstanding (mil)	**42**
Market Capitalization ($mil)	**$55**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**45**
Insider Ownership (%)	**9**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2016 Estimate	**N/A**
P/E using 2017 Estimate	**N/A**

Risk Level	**Above Avg.,**
Type of Stock	**Small-Blend**
Industry	**Med-Drugs**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2016	0 A	0 A	0 A	0 A	0 A
2017	0 A	0 E	0 E	0 E	0 E
2018					0 E
2019					0 E

Earnings per Share
(EPS is operating earnings before non recurring items)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2016	-$0.32 A	-$0.35 A	-$0.28 A	$0.01 A	-$0.85 A
2017	-$0.15 A	-$0.16 E	-$0.17 E	-$0.18 E	-$0.69 E
2018					-$0.63 E
2019					-$0.70 E

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WHAT'S NEW

Business Update

Phase 2 Trial of CF-301 in Bacteremia Underway

On May 25, 2017, ContraFect Corp. (CFRX) announced the initiation of a Phase 2 clinical trial to evaluate CF-301, the company's lead lysin product, as a potential treatment of bacteremia caused by both methicillin-resistant (MRSA) and methiciliin-sensitive strains of *Staphylococcus aureus*.

The study will be an international, multicenter, randomized, double blind, placebo controlled trial with a superiority comparison between CF-301 combined with the standard of care antibiotics compared to placebo with the standard of care antibiotics. The trial will include 115 patients randomized 3:2 to receive a single dose of 0.25 mg/kg CF-301 administered via a two-hour infusion or placebo. The primary endpoint of the study will be early clinical response. Safety, tolerability, and pharmacokinetics will also be examined along with additional exploratory clinical and health economic endpoints. We anticipate that the Phase 2 trial will cost anywhere from $10 to $20 million to run and topline results should be available in the fourth quarter of 2018. The company is not planning to perform an interim analysis.

CF-301

ContraFect's lead lysin product is CF-301. A lysin is a naturally occurring anti-bacterial hydrolytic enzyme that is produced by bacteriophages, which are virus' that infect and kill bacteria. A typical lysin, such as CF-301, comprises two domains separated by a short linker region. The N-terminal domain catalyzes the hydrolysis of peptidoglycan, the main component of bacterial cell walls, whereas the C-terminal domain binds to the cell wall substrate, often a carbohydrate, which confers a great specificity and decreases the chance for bacterial resistance. Due to this, the use of lysins as antibacterial agents is designed to combat drug resistance to currently used antibiotics.

CF-301 is initially being targeted for the treatment of bacteremia, or infections of the bloodstream. Most studies estimate the incidence of *S. aureus* bacteremia (SAB) ranging from 20-50 cases/100,000 population (Klevens *et al*., 2007; Benfield *et al*., 2006; El Atrouni *et al*., 2009). Prior to the advent of antibiotics, the mortality rate from SAB was close to 80% (Mendell, 1939). The introduction of antibiotics, coupled with greater standards of care, has reduced the mortality rate, which appears to have stabilized at approximately 20% (Turnidge *et al*., 2009). SAB can frequently lead to infective endocarditis (IE), an infection of the endocardial surface of the heart (Fowler *et al*., 2005). The prevalence of IE is estimated to be anywhere from 11 to 50% of patients with SAB. Development of IE leads to an increased risk of embolic event and death (Miro *et al*., 2005).

Due to widespread resistance to penicillin, the current treatment of choice for *S. aureus* infections is semi-synthetic penicillin molecules. This resistance is due to the activity of the enzyme penicillinase, which cleaves the β-lactam ring of the penicillin molecule. Penicillinase-resistant β-lactam antibiotics include methicillin, oxacillin, and flucoxacillin. *S. aureus* strains that have acquired resistance to methicillin have an altered penicillin-binding protein (PBP2a) that has lower affinity for binding β-lactam antibiotics, thus rendering them ineffective. Strains that have acquired this resistance are referred to as methicillin-resistant *S. aureus* (MRSA). The current gold standard for treatment of MRSA is vancomycin. However, vancomycin is far from ideal due to poor tissue penetration, slow bactericidal activity, and a number of side effects (Gould, 2008). Additional antibiotics utilized include teicoplanin, tegecyline, linezolid, daptomycin, and televancin. Each of those medications has their own shortcomings, including the development of resistance, thus there exists a significant unmet medical need for newer therapies, particularly those that are not susceptible to the development of resistance. Pre-clinical data shows that CF-301 synergizes with standard-of-care antibiotics, which results in a very high survival rate in mouse models of bacteremia.

Conclusion and Valuation

We're glad to see the Phase 2 study of CF-301 in bacteremia get underway and are looking forward to evaluating the results next year. In the mean time, we'll be interested to hear about potential new preclinical lysin candidates from the collaboration with Rockefeller University. We have constructed a probability adjusted discounted cash flow model that takes into account potential future revenues from CF-301 and the company's influenza treatment CF-404. Our valuation currently stands at $10 per share, and we believe that all investors interested in the anti-infective space should consider taking a close look at ContraFect.

PROJECTED INCOME STATEMENT

ContraFect Corp.
Income Statement

ContraFect Corp.	2016 A	Q1 A	Q2 E	Q3 E	Q4 E	2017 E	2018 E	2019 E
CF-301 (Bacteremia)	$0	$0	$0	$0	$0	$0	$0	$0
YOY Growth	-	-	-	-	-			
CF-404 (Flu)	$0	$0	$0	$0	$0	$0	$0	$0
YOY Growth	-	-	-	-	-			
Grants & Collaborative Revenue	$0	$0	$0	$0	$0	$0	$0	$0
YOY Growth	-	-	-	-	-			
Total Revenues	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
YOY Growth	-	-	-	-	-			
Cost of Sales	$0	$0	$0	$0	$0	$0	$0	$0
Product Gross Margin	-	-	-	-	-			
Research & Development	$22.1	$4.2	$4.5	$5.0	$5.1	$18.8	$20.0	$25.0
General & Administrative	$11.4	$2.1	$2.4	$2.4	$2.4	$9.3	$11.0	$13.0
Other Expenses	$0	$0	$0	$0	$0	$0	$0	$0
Operating Income	($33.5)	($6.3)	($6.9)	($7.4)	($7.5)	($28.1)	($31.0)	($38.0)
Operating Margin	-	-	-	-	-			
Non-Operating Expenses (Net)	$5.0	($0.0)	($0.1)	($0.1)	($0.1)	($0.3)	($0.4)	($0.4)
Pre-Tax Income	($28.5)	($6.3)	($7.0)	($7.5)	($7.6)	($28.4)	($31.4)	($38.4)
Income Taxes Paid	$0	$0	$0	$0	$0	$0	$0	$0
Tax Rate	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Net Income	**($28.5)**	**($6.3)**	**($7.0)**	**($7.5)**	**($7.6)**	**($28.4)**	**($31.4)**	**($38.4)**
Net Margin	-	-	-	-	-			
Reported EPS	**($0.85)**	**($0.15)**	**($0.17)**	**($0.18)**	**($0.18)**	**($0.68)**	**($0.63)**	**($0.70)**
YOY Growth	-	-	-	-	-			
Basic Shares Outstanding	33.5	41.6	41.8	41.8	41.9	41.8	50.0	55.0

Source: Zacks Investment Research, Inc. *David Bautz, PhD*

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