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ContraFect Corp. (CFRX-NASDAQ)

CFRX: Additional Phase 2 Data Presented at ECCMID…

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 $4/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 (04/30/19)	$0.50
Valuation	**$4.00**

OUTLOOK

On April 16, 2019, ContraFect Corp. announced additional data from the company's Phase 2 clinical trial of exebacase (CF-301) were presented at the 29th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID). New data reported at the meeting included a 22.9% higher responder rate at Day 7 and a 16.9% higher responder rate at Test of Cure in a pre-specified methicillin resistant *Staphylococcus aureus* (MRSA) subgroup. In addition, in patients with complicated bacteremia treatment with exebacase + standard of care (SOC) had a 20.3% higher clinical responder rate than those who received only SOC. We anticipate the company conducting meetings with both the FDA and EMA in the second half of 2019 to receive input on Phase 3 trial design, which we anticipate initiating in the first half of 2020.

SUMMARY DATA

52-Week High	**$2.82**
52-Week Low	**$0.36**
One-Year Return (%)	**-66.89**
Beta	**-0.52**
Average Daily Volume (sh)	**2,355,943**
Shares Outstanding (mil)	**79**
Market Capitalization ($mil)	**$40**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**55**
Insider Ownership (%)	**7**
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 2018 Estimate	**-4.6**
P/E using 2019 Estimate	**-4.0**

Risk Level	**High**
Type of Stock	**Small-Growth**
Industry	**Med-Drugs**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2018	0 A	0 A	0 A	0 A	0 A
2019	0 E	0 E	0 E	0 E	0 E
2020					0 E
2021					0 E

Earnings per Share

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2018	-$0.26 A	-$0.27 A	-$0.06 A	$0.07 A	-$0.50 A
2019	-$0.09 E	-$0.09 E	-$0.08 E	-$0.08 E	-$0.34 E
2020					-$0.36 E
2021					-$0.39 E

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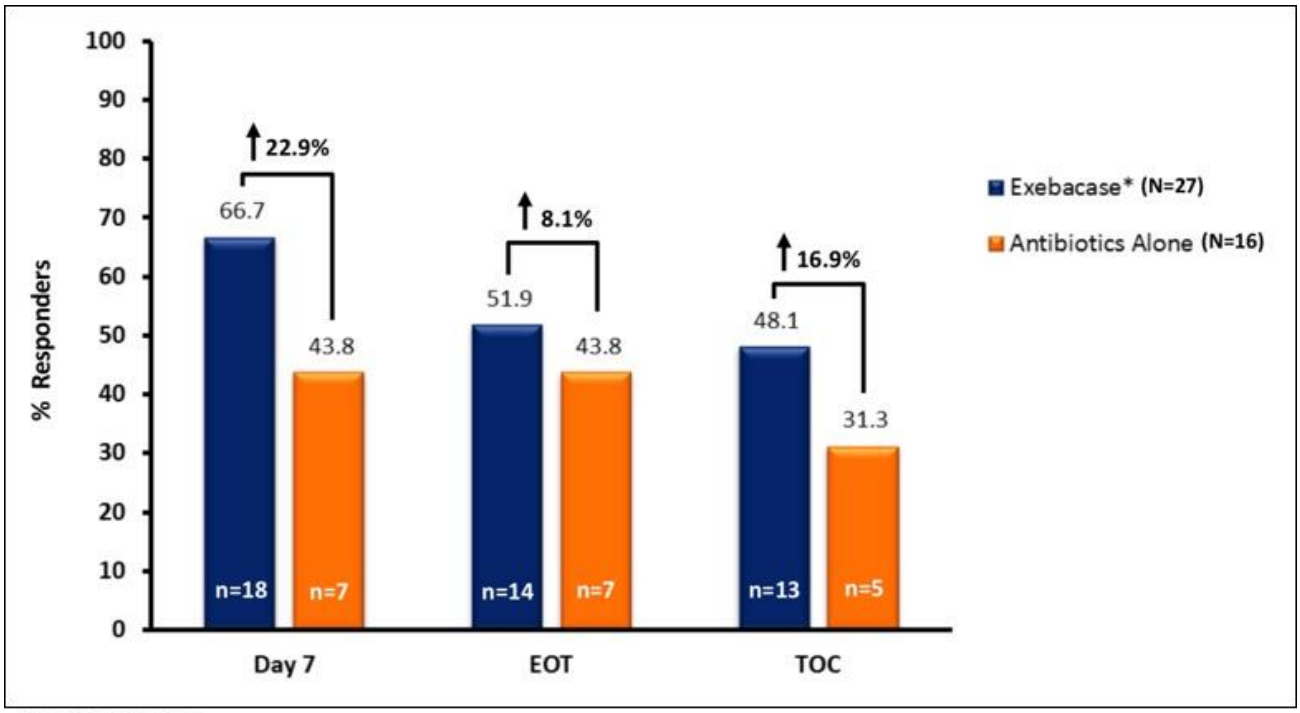
Business Update

Additional Data Presented for Exebacase Phase 2 Trial

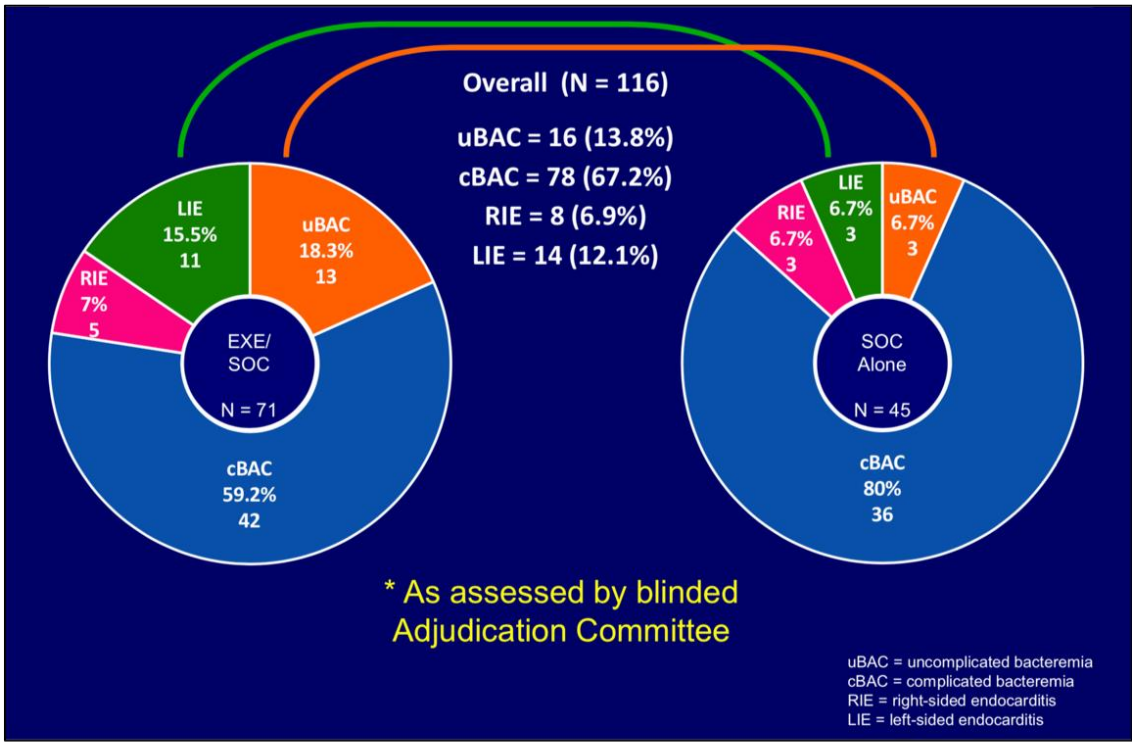
On April 16, 2019, Contrafect Corp. (CFRX) announced the presentation of new data from the Phase 2 clinical trial of exebacase (CF-301) for the treatment of *Staphylococcus aureus* bacteremia including endocarditis at the 29th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID). The data was presented by Vance G. Fowler, Jr., M.D., Professor of Medicine in the Division of Infectious Diseases at Duke University. The Phase 2 trial was an international, multicenter, randomized, double blind, placebo controlled trial with a superiority comparison between exebacase or placebo combined with the standard of care antibiotics. A total of 121 patients were randomized 3:2 to receive a single dose of 0.25 mg/kg exebacase or placebo administered via a two-hour infusion along with the standard of care (SOC) antibiotics. The primary endpoint of the study was early clinical response. A patient was considered a responder if they were alive, had an improvement or resolution of the signs and symptoms attributable to the *S. aureus* infection, there were no additional medical interventions required, and there was no evidence of a spread of the infection. Early clinical response was determined by an independent, blinded adjudication committee. Please see our previous report for a discussion of the topline data from the study.

The company had previously announced a 42.8% improvement in responder rate at Day 14 for patients with methicillin-resistant *S. aureus* (MRSA) treated with exebacase + SOC compared to SOC alone (*P*=0.010). The following figure shows new data presented at ECCMID in which clinically meaningful increases were seen in responder rate at Day 7 and test of cure (TOC) in MRSA patients treated with exebacase + SOC compared to SOC alone.



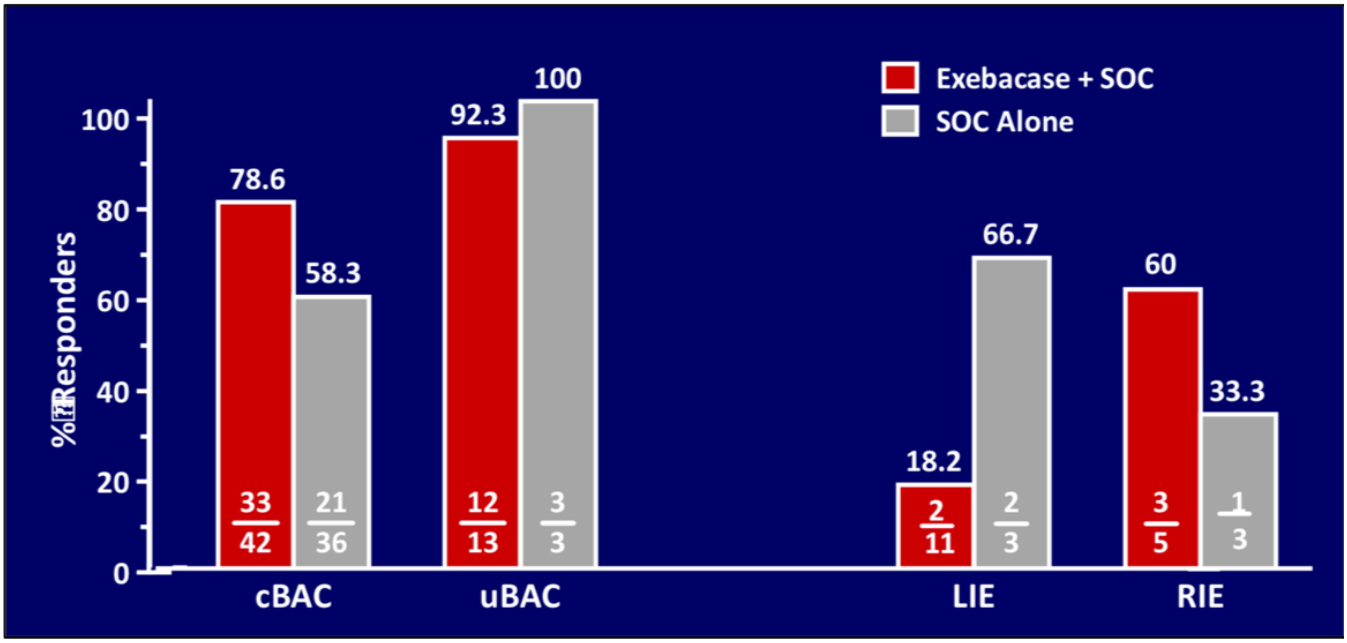
Source: ContraFect Corp.

One of the largest confounding factors in the exebacase Phase 2 trial had to do with the distribution of final diagnoses between the two groups. The following figure shows that there was a large difference in patients diagnosed with left-sided endocarditis (LIE) between the two treatment groups, with 15.5% of patients in the exebacase + SOC group having LIE compared to only 6.7% in the SOC only group. This is important, as LIE is a notoriously difficult condition to treat (Cahill *et al*., 2017). As an example of how difficult patients with left-sided endocarditis are to treat, in a clinical trial comparing the efficacy of daptomycin to vancomycin for the treatment of bacteremia and endocarditis caused by *S. aureus* only 11% (1/9) of patients with left-sided endocarditis responded to treatment with daptomycin (Fowler *et al*., 2006).



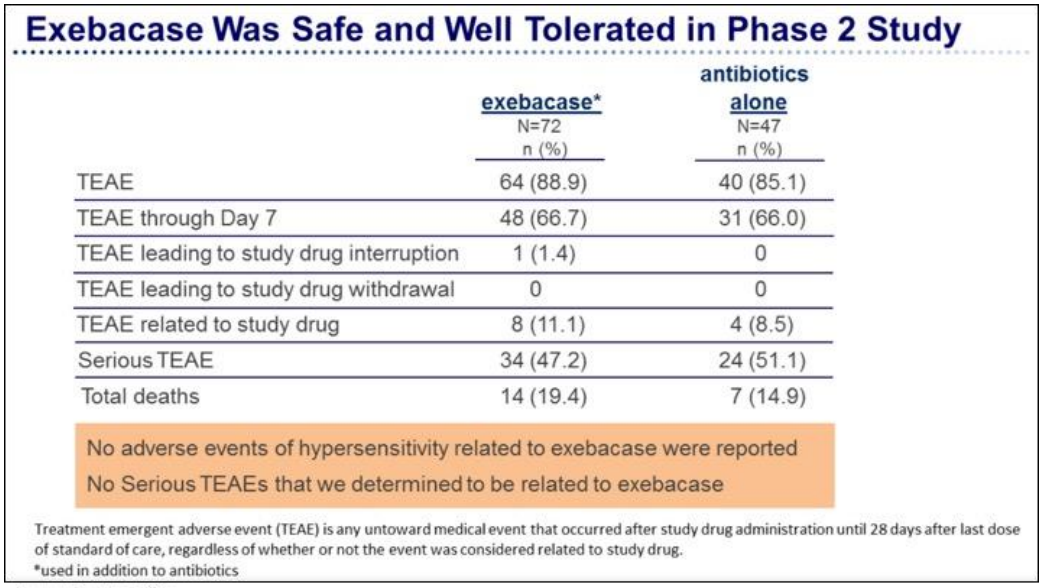
Source: Fowler, Jr. *et al.*, 2019

The issue with LIE patients is exemplified by the following figure, which shows responder rates at Day 14 according to final diagnosis, which was a pre-specified secondary analysis. Only 18.2% (2/11) of patients with LIE were responders in the exebacase + SOC group. However, treatment with exebacase in patients with complicated bacteremia led to a 20.3% higher responder rate compared to patients treated only with SOC.



Source: Fowler, Jr. *et al.*, 2019

As previously reported, exebacase was safe and very well tolerated. The following chart shows that the percentage of treatment-emergent adverse events (TEAE) was similar in both treatment groups and there were no reports of adverse events due to hypersensitivity to exebacase along with no serious TEAEs that were determined to be related to exebacase.



Source: ContraFect Corp.

We believe the Phase 2 data presented by ContraFect fully supports the advancement of exebacase into a Phase 3 program. We anticipate the company conducting an 'end-of-Phase 2' meeting with the FDA this summer to receive regulatory guidance on a Phase 3 clinical trial, followed by a meeting with the EMA in the second half of 2019. We anticipate learning additional details about the Phase 3 program in the second half of 2019 following the company's meeting with regulatory authorities, and anticipate a Phase 3 trial initiating in the first half of 2020.

Exebacase Synergizes with Human Blood Factors

On April 8, 2019, ContraFect announced the publication of a manuscript titled "The Antistaphylococcal Lysin, CF-301, Activates Key Host Factors in Human Blood to Potentiate Methicillin-Resistant Staphylococcus aureus Bacteriolysis" in the peer-review journal *Antimicrobial Agents and Chemotherapy* (Indiani *et al*., 2019). The paper describes the enhanced activity of exebacase in several *in vitro* assays when performed in human blood compared to standard testing buffer (cation-adjusted Meuller-Hinton broth [caMHB]). The researchers identified lysozyme and human serum albumin (HSA) as two blood constituents that contribute to the enhanced activity of exebacase, which is surprising given that neither has previously been known to have antistaphylococcal activity. While the exact mechanism of this synergism is still being elucidated, this work helps to further differentiate lysins from small-molecule antibiotics that typically have reduced activity in the presence of albumin. In addition, it supports the potential use of lysins in other environments, including synovial fluid (which has similar albumin concentrations as blood) and infected bone, skin, and/or soft tissues that have significant exposure to blood components.

Leadership Change

On April 2, 2019, ContraFect announced that Roger J. Pomerantz, MD has been appointed Chairman and Chief Executive Officer to succeed Steven Gilman, PhD, who is retiring. Dr. Pomerantz has served as Vice Chairman of ContraFect for the past five years, thus he is very familiar with the company's technology and current position. Previously, Dr. Pomerantz was Chairman and CEO of Seres Therapeutics, where he continues to serve as the Chairman of the Board of Directors.

Conclusion

We are encouraged by the strong results from the Phase 2 trial, particularly in MRSA patients. We are perplexed by the stock's reaction following the release of the Phase 2 results, as it was a first-in-patient study that set out to identify the proper target population for a Phase 3 program, which we believe was accomplished. Perhaps even more importantly, the results validated the lysin platform, for which ContraFect has a number of other development projects in the pipeline. We look forward to an update from the company later this year on the Phase 3 program and its initiation in the first half of 2020. Our valuation remains $4.

PROJECTED FINANCIALS

ContraFect Corp.	2018 A	Q1 E	Q2 E	Q3 E	Q4 E	2019 E	2020 E	2021 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	$22.4	$4.7	$5.0	$5.2	$5.3	$20.2	$24.0	$28.0
General & Administrative	$8.7	$2.2	$2.2	$2.3	$2.3	$9.1	$9.5	$10.0
Other Expenses	$0	$0	$0	$0	$0	$0	$0	$0
Operating Income	($31.1)	($7.0)	($7.2)	($7.5)	($7.6)	($29.3)	($33.5)	($38.0)
Operating Margin		-	-	-	-			
Non-Operating Expenses (Net)	($6.6)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Pre-Tax Income	($37.7)	($7.0)	($7.2)	($7.5)	($7.6)	($29.3)	($33.5)	($38.0)
Income Taxes Paid	$0	$0	$0	$0	$0	$0	$0	$0
Tax Rate	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Net Income	**($37.7)**	**($7.0)**	**($7.2)**	**($7.5)**	**($7.6)**	**($29.3)**	**($33.5)**	**($38.0)**
Net Margin		-	-	-	-			
Reported EPS	**($0.50)**	**($0.09)**	**($0.09)**	**($0.08)**	**($0.08)**	**($0.34)**	**($0.36)**	**($0.39)**
YOY Growth		-	-	-	-			
Basic Shares Outstanding	76.1	79.5	80.0	90.0	91.0	85.1	92.0	98.0

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

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