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OUTPERFORM

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LEERINK

Reason for report:

COMPANY UPDATE

ZAFGEN, INC.

Mtg With Management Provides Insight Into Ph. III PWS Changes

• **Bottom Line:** After meeting with ZFGN on our bus tour we have a greater appreciation for the factors that led to changes in the design and stat. analysis for the Ph. III trial of beloranib in Prader-Willi Syndrome (PWS). We are lowering our prob.of success to 70% from 80% because we believe that the new conditions make it slightly harder for Ph.III to succeed although we believe even in less bullish scenarios that the totality of the Ph. III PWS data in early 1Q16 as well as Ph. II severe obesity data in late Q4/early 1Q16 could still support approval in this rare disease with sig. unmet need. We believe that ZFGN's business model and suite of metAP2 inhibitors are very differentiated from other obesity stories and that recent stock weakness presents an attractive buying opportunity. **Reiterate OP, lowering PT to $56 from $61.**

• **As shown in our slides within, we believe the company has managed to evolve their strategy according to personnel changes at the FDA in a way that still supports a good likelihood of success in Ph III.** Although the new reviewer at the FDA prefers body weight to body mass (DEXA), and views both body weight and hyperphagia behavior as equally important to hit, our analysis of Ph. II data suggests that this outcome is also achievable. Multiple studies of beloranib have demonstrated weight loss across several types of obesity which builds over time. Interestingly, the Street appears to be more comfortable with the ability to succeed on the weight loss co-primary endpoint, however we believe that the hyperphagia effects are actually more impressive and easier to hit, particularly in PWS.

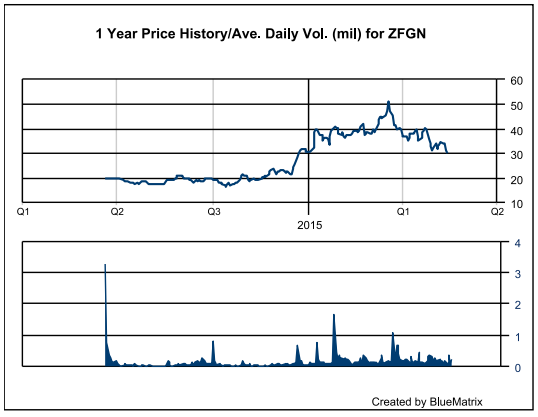
• **Ph. II data suggests that co-primary endpoints are still within reach in the Ph. III bestPWS study.** For the first of the two primary endpoints, 1.2mg and 1.8mg doses of beloranib showed ~1.5% weight loss vs. placebo in Ph2, which was limited by short duration (4wks), s mall numbers (~5 pts/arm), one placebo patient losing a lot of weight and pts. not complying with specific weighing procedures (fasting, voiding and gowning). We are encouraged that Ph. III will employ higher dosing (1.8mg and 2.4mg), longer duration (6 mos), larger numbers (~35 pts/arm), and procedural improvements. On the second of the two primary endpoints (hyperphagia), beloranib actually showed over a 50% improvement vs. 40% worsening for placebo (delta of ~36 pts).

• **Mathematically, powering in Ph.III is unchanged at 90% to show at least a 1.5% improvement in weight and a 4.5 point improvement in hyperphagia;** although ZFGN must now hit both endpoints, the hurdle has been lowered to p<0.05 on both from p<.025 on either one previously. Even if beloranib were to miss one of the co-primary endpoints, we believe that the risk/benefit could be positive for the FDA to approve the drug considering the safety of the drug (fewer dropouts than expected and only using the higher dose in the EU Ph. III bodes well in our view), strong presence of the patient pop. at the FDA, and high unmet medical need in this debilitating orphan disease.

Key Stats:	**(OTC Un:ZFGN)**
S&P 600 Health Care Index:	**1,625.40**
Price:	**$30.28**
Price Target:	$56.00 from $61.00
Methodology:	Probability-weighted DCF analysis, 11% discount rate
52 Week High:	$55.36
52 Week Low:	$16.01
Shares Outstanding (mil):	29.6
Market Capitalization (mil):	$896.3
Book Value/Share:	$0.00
Cash Per Share:	$7.50
Dividend (ann):	$0.00
Dividend Yield:	0.0%

Shares Outstanding (mil): Diluted; includes stock options

Cash Per Share: On a net basis as of 1Q15E



Dec Yr	1Q	2Q	3Q	4Q	FY Rev	1Q	2Q	3Q	4Q	FY EPS	P/E
2014A	0.0	0.0	0.0	0.0	0.0	($6.18)	($2.96)	($0.65)	($0.48)	($3.00)	NM
2015E	0.0A	0.0	0.0	0.0	0.0	($0.53)A	($0.81)	($0.89)	($0.99)	($3.23)	NM
2016E	--	--	--	--	0.0	--	--	--	--	($3.13)	NM

Source: Company Information and Leerink Partners LLC Research
GAAP EPS presented

INVESTMENT THESIS

We rate ZFGN Shares Outperform. Zafgen (NASDAQ: ZFGN) is a biopharmaceutical company dedicated to the development of medicines to address the unmet need in obesity, with an initial focus on two orphan diseases that offer a potentially streamlined development path and high margin business model. We believe that ZFGN has an experienced management team with an outstanding track record executing in the field of drug discovery and commercialization. ZFGN's lead asset, beloranib, is a MetAP2 inhibitor that has generated compelling Phase II data in Prader-Willi syndrome (PWS) and severe obesity on a number of clinically relevant endpoints, in our view, and is now being studied in a registration-enabling Phase III PWS study expected to read out data by 1Q16. We project a 70% probability of PWS approval in 2017, and peak gross PWS sales of ~$700MM worldwide in 2029. Zafgen is also developing beloranib in hypothalamic-injury associated obesity (HIAO), where it also recently released positive proof-of-concept Phase IIa data and expects to initiate a registration-enabling study in HIAO in the near future. We project 60% probability of HIAO approval in 2018, and peak gross HIAO sales of ~$445MM worldwide in 2029. The commercial opportunity presented by severe obesity holds the potential to be orders of magnitude larger than PWS and HIAO, though ZFGN will likely need support from a larger partner to unlock its full potential. Thus, while severe obesity afflicts ~16MM Americans in the US, we only model ~$200MM in peak beloranib sales in non-PWS/HIAO patients, though in a partnership/acquisition (P&A) scenario, ZFGN is likely to receive considerably more value for beloranib in high prevalence indications. In the meantime, we believe that establishing broader proof-of-concept in orphan sub-populations offers a less risky and more rapid development path, and over the long term could position ZFGN as a very attractive partnership or takeout target. Likewise, a second generation MetAP2 inhibitor in preclinical development for general obesity, and a novel chemical class MetAP2 inhibitor in preclinical development for NASH/diabetes could provide significant upside to our price target as their development advances further.

VALUATION

We derive a ~$56 per share value for ZFGN using an 11% discount rate and a 2% terminal growth rate. Our price target assumes 70% and a 60% probabilities of beloranib approval in PWS and HIAO, respectively, which leads to our risk adjusted peak sales estimates of ~$485MM and ~$270MM in each indication. We only model ~$200MM in peak sales in severe obesity, which we believe holds the potential to be very conservative if/when ZFGN generates pivotal beloranib data in orphan indications.

RISKS TO VALUATION

Risks to our valuation include disappointing clinical data, regulatory setbacks, dilution risk from an additional equity offering, and commercial shortfalls. Because ZFGN has only one late stage product, the occurrence of any of these could impact the stock significantly.

Beloranib Prader-Willi Ph. 3 Clinical Development

Bull Case of Launch in 2H16 Based on US Trial; Base Case of Launch in 2H17 After EU Trial Readout

The recent revision to statistical plan has no impact (mathematically) on trial design and hence, shouldn't meaningfully impact probability of success

Ph. 3 bestPWS (US trial)
NCT02179151(in US only)

N = 84

Original guidance in 4Q14

Two separate primary endpoints powered at 90% each at a higher bar (lower alpha)

- ❑ Total body **MASS** (assessed by DEXA) **α = 0.025**
- ❑ Hyperphagia-related behavior (Dysken PWS questionnaire filled by caregiver) **α = 0.025**

Secondary endpoint:

- Total Body weight (assessed by BMI)

Trial enrollment initiated based on original guidance

Unfortunate Death of FDA's Lead Obesity Drug Reviewer*; Review Process Restarted

N = 84

Revised Guidance in 1Q15

Two separate primary endpoints powered at 90% each at a higher bar (lower alpha)

- ❑ Total body **WEIGHT** (assessed by BMI): **α = 0.025**
- ❑ Hyperphagia-related behavior (Dysken PWS questionnaire filled by caregiver); **α = 0.025**

Secondary endpoint:

- Total body mass (assessed by DEXA)

N = 102+ (due to growing patient interest in the study)

Final guidance in 2Q15

One consolidated co-primary endpoint powered at >90% (95% X 95% = 90%) to hit both items together at a lower bar (higher alpha); combined α = 0.05

- Total body weight (assessed by BMI): **need to show delta of 1.5% b/w beloranib vs. pbo** (powered at 95%)
- Hyperphagia-related behavior (Dysken PWS questionnaire filled by caregiver): **need to show delta of 4.5 b/w beloranib vs. pbo** (powered at 95%)

Secondary endpoint:

- Total body mass (assessed by DEXA)

Trial finishes enrollment

6-mos. primary endpoint data expected in 1Q16

- Eric Coleman, Ex-Deputy Director, Division of Metabolism and Endocrinology, FDA

Ph. 3 bestPWS|EU (EU trial)
(in EU sites only)

N = 150
Same primary endpoint as bestPWS US study

Source: Leerink Partners Research, Company Reports, SEC Filings

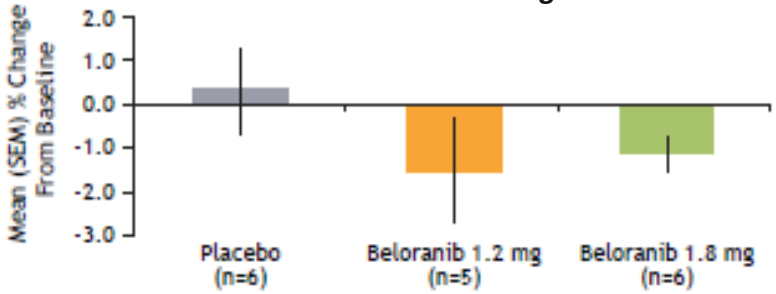
Beloranib Prader-Willi Ph. III Clinical Development

How Much Should We Extrapolate From Ph. I/II Trials?

4-wks PoC data in PWS, 8-wks PoC in HIAO and 12-wks data in severe obesity renders new 6-mos. co-primary endpoint bar achievable, and supports our 80% probability of getting to market

A.

ZAF-211 Ph. 2a PWS 4-wks weight loss PoC data

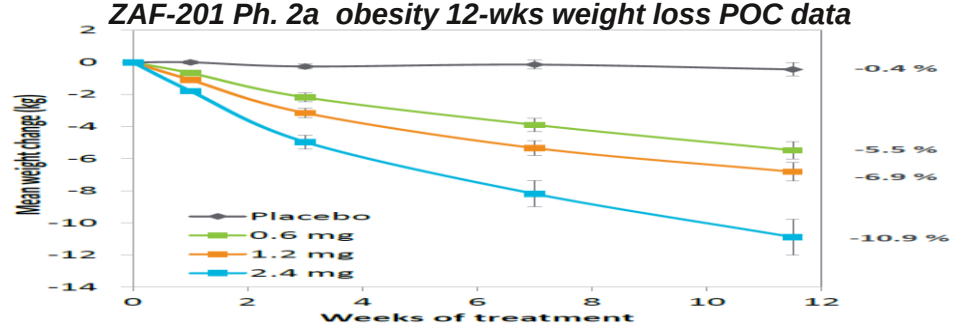


Total body weight loss observed in PWS pts at 4 wks; <u>effect size was ~1.5% vs. placebo at both doses 1.2 mg and 1.8 mg.</u>

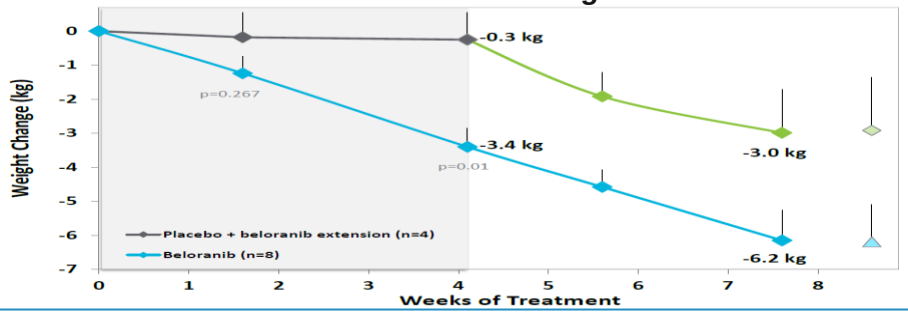
Important considerations when extrapolating to Ph. 3 bestPWS study:

- Small patient numbers in each trial arm (5-6); pbo error bar highlights one patient in particular who lost weight purely due to an extensive exercise regimen
- Improved compliance in Ph.3 with a sophisticated weighing procedure requiring fasting, voiding, and hospital gowns
- Longer 6-mos. endpoint as against 4-wks which bodes well based on the long term data observed in obesity and HIAO Ph.2 trials. In particular, PWS pts have relatively less lean mass which makes losing weight relatively difficult when compared to other indications

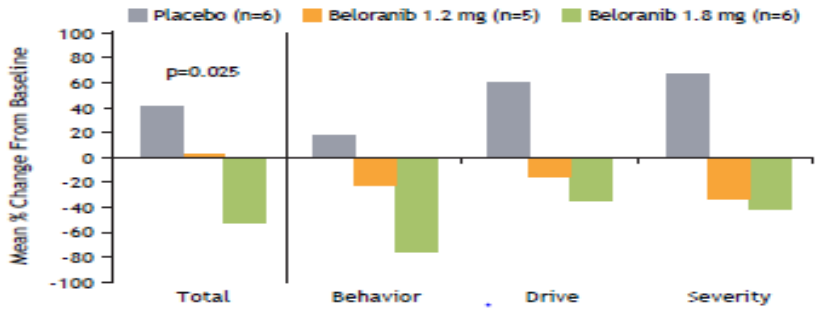
ZAF-201 Ph. 2a obesity 12-wks weight loss POC data



ZAF-221 Ph. 2a HIAO 8-wks weight loss POC data



ZAF-211 Ph. 2a PWS Dykens Score POC data



Improvement in Hyperphagia-related behavior in PWS pts at 4 wks; <u>effect size SIGNIFICANTLY higher than 4.5 units at both doses 1.2 mg and 1.8 mg.</u>

Important considerations when extrapolating to Ph. 3 bestPWS study:

- 40-points score of 10 questions changed to a 36-points score with exclusion of 1 question that was indicator of the caregiver burden (as against patient burden), based on FDA's feedback
- An impressive ~20 points differential for 1.8mg beloranib in Ph.2 has more than enough room we believe to work around investors' concerns over this endpoint. We believe this endpoint should be relatively easier to hit the ~4.5 points delta, as requested by FDA

In worst case of beloranib missing the primary endpoint, pre-specified stratification may facilitate looks at the two endpoints in isolation, which if stat. sig. with a clinically meaningful benefit and when coupled with a benign safety profile may still justify approval in this debilitating orphan disease with a high unmet need for a therapeutic.

Source: Leerink Partners Research, Company Reports, SEC Filings

ZFGN P&L ($MM) GAAP	2013	1Q14	2Q14	3Q14	4Q14	2014	1Q15	2Q15E	3Q15E	4Q15E	2015E	2016E	2017E	2018E	2019E
Beloranib PWS	-	-	-	-	-	-	-	-	-	-	-	-	4.0	46.5	126.6
Beloranib HIAO	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0	34.4
Beloranib Severe Obesity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue (p/w)	-	-	-	-	-	-	-	-	-	-	-	-	**4.0**	**56.5**	**161.0**
COGS	-	-	-	-	-	-	-	-	-	-	-	-	0.4	5.7	16.1
R&D	9.6	3.3	4.7	12.1	7.3	27.4	10.2	18.0	20.0	22.0	70.2	70.2	63.2	56.9	56.4
SG&A	4.2	1.2	1.3	2.3	3.3	8.1	3.0	4.0	4.3	5.0	16.3	22.9	30.0	33.9	48.3
Operating Expenses	13.8	4.5	6.0	14.4	10.7	35.5	13.2	22.0	24.3	27.0	86.5	93.1	93.6	96.4	120.8
Operating Income	(13.8)	(4.5)	(6.0)	(14.4)	(10.7)	(35.5)	(13.2)	(22.0)	(24.3)	(27.0)	(86.5)	(93.1)	(89.6)	(39.9)	40.3
Interest Income (Expense)	-	(0.0)	(0.4)	(0.2)	(0.2)	(0.8)	(0.2)	(0.2)	(0.2)	(0.2)	(0.8)	(0.4)	(0.3)	-	-
FX Gains/Losses	(0.2)	0.1	0.0	(0.1)	(0.1)	(0.1)	(0.1)	-	-	-	(0.1)	-	-	-	-
Total Other Income (expense)	(0.2)	0.1	(0.4)	(0.3)	(0.3)	(0.9)	(0.2)	-	-	-	(0.2)	(0.4)	(0.3)	-	-
EBT	(14.0)	(4.5)	(6.4)	(14.7)	(10.9)	(36.5)	(13.5)	(22.0)	(24.3)	(27.0)	(86.8)	(93.4)	(89.8)	(39.9)	40.3
Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Income (Loss)	**(14.2)**	**(4.5)**	**(6.4)**	**(14.7)**	**(10.9)**	**(36.6)**	**(13.5)**	**(22.0)**	**(24.3)**	**(27.0)**	**(86.8)**	**(93.4)**	**(89.8)**	**(39.9)**	**40.3**
Diluted EPS	**$ (19.53)**	**$ (6.18)**	**$ (2.96)**	**$ (0.65)**	**$ (0.48)**	**$ (3.00)**	**$ (0.53)**	**$ (0.81)**	**$ (0.89)**	**$ (0.99)**	**$ (3.23)**	**$ (3.13)**	**$ (2.78)**	**$ (1.20)**	**$ 1.17**
Basic Shares Outstanding	0.7	0.7	2.2	22.7	22.9	12.2	25.6	27.1	27.2	27.3	26.8	29.8	32.3	33.3	34.3
Diluted Shares Oustanding	0.7	0.7	2.2	22.7	22.9	12.2	29.6	27.1	27.2	27.3	27.8	30.8	33.3	34.3	35.3

Source: SEC Filings and Leerink Partners Research

ZFGN BS & CFS ($MM) GAAP	2013	1Q14	2Q14	3Q14	4Q14	2014E	1Q15	2Q15E	3Q15E	4Q15E	2015E	2016E	2017E	2018E	2019E
Net Cash	**35.5**	**31.1**	**126.9**	**119.6**	**102.4**	**102.4**	**222.1**	**201.9**	**178.5**	**151.7**	**151.7**	**65.6**	**(19.0)**	**(46.2)**	**6.6**
Cash & Equivalents	35.5	38.5	134.2	127.0	115.5	115.5	234.2	212.9	188.5	160.6	160.6	70.4	(15.3)	(46.2)	6.6
Debt	-	7.4	7.4	7.4	13.1	13.1	12.0	11.0	10.0	8.9	8.9	4.7	3.7	-	-
Change in Cash	**25.6**	**3.0**	**95.8**	**(7.2)**	**(11.5)**	**80.0**	**118.6**	**(21.3)**	**(24.4)**	**(27.9)**	**45.1**	**(90.2)**	**(85.6)**	**(30.9)**	**52.8**
Operating Cash Flow	**(15.0)**	**(4.0)**	**(6.9)**	**(6.7)**	**(17.2)**	**(34.9)**	**(9.9)**	**(20.2)**	**(22.4)**	**(24.8)**	**(77.3)**	**(81.1)**	**(74.9)**	**(20.9)**	**62.8**
Net Income (Loss)	(14.0)	(4.5)	(6.4)	(14.7)	(10.9)	(36.5)	(13.5)	(22.0)	(24.3)	(27.0)	(86.8)	(93.4)	(89.8)	(39.9)	40.3
SOE	0.4	0.2	0.4	0.9	0.6	2.0	1.1	1.8	1.9	2.2	6.9	8.4	9.3	10.0	12.6
D&A	0.0	0.0	-	-	-	0.0	-	-	-	-	-	4.0	5.6	9.0	10.0
Other	(1.4)	0.3	(0.9)	7.1	(6.9)	(0.4)	2.5	-	-	-	2.5	-	-	-	-
Investing Cash Flow	**(0.0)**	**(0.0)**	**-**	**-**	**-**	**(0.0)**	**-**	**-**	**(1.0)**	**(2.0)**	**(3.0)**	**(5.0)**	**(7.0)**	**(10.0)**	**(10.0)**
CapEx	(0.0)	(0.0)	-	-	-	(0.0)	-	-	(1.0)	(2.0)	(3.0)	(5.0)	(7.0)	(10.0)	(10.0)
Other	-	-	-	-	-	-	-	-	-	-	-	-			
Financing Cash flow	**40.6**	**7.0**	**102.7**	**(0.5)**	**5.7**	**114.9**	**128.6**	**(1.0)**	**(1.0)**	**(1.0)**	**125.4**	**(4.2)**	**(3.7)**	**-**	**-**
Equity Issuance (Buyback)	40.8	0.4	102.7	-	-	103.1	129.6	-	-	-	129.6	-		-	-
Debt Issuance (Retirement)	-	7.4	-	(0.5)	5.7	12.6	(1.0)	(1.0)	(1.0)	(1.0)	(4.2)	(4.2)	(3.7)	-	-
Other	(0.2)	(0.8)	-	-	-	(0.8)	-	-	-	-	-	-	-	-	-

Source: SEC Filings and Leerink Partners Research

ZFGN DCF Analysis	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	TV
Cash Flow From Operations ($MM)	(35)	(77)	(81)	(75)	(21)	63	128	229	266	291	332	364	395	425	448	461	346	177	
Cash Flow From Investing ($MM)	(0)	(3)	(5)	(7)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	
Net Borrowing (Repayment) ($MM)	5	(4)	(4)	(4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Free Cash Flow ($MM)	(30)	(85)	(90)	(86)	(31)	53	118	219	256	281	322	354	385	415	438	451	336	167	1889
Discount Periods	-	-	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
NPV FCF ($MM)	-	(63)	(83)	(71)	(23)	36	72	120	126	125	129	128	125	122	116	107	72	32	365

Sum NPV FCF ($MM)	1434
Net Cash 1Q15E	222
Implied ZFGN Mkt Cap ($MM)	**$ 1,657**
ZFGN Per Share Value	**$ 55.96**

Cost of Equity	11%
TG Rate	2%
Diluted Shares Oustanding	29.6

Source: Leerink Partners Research

Prader Willi Syndrome Revenue Model	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E
PWS Patients in the US	7,500	7,568	7,636	7,704	7,774	7,844	7,914	7,985	8,057	8,130	8,203	8,277	8,351	8,426	8,502	8,579	8,656	8,734
% >12 years old	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
US PWS Patients >12 yr/old	3,750	3,784	3,818	3,852	3,887	3,922	3,957	3,993	4,029	4,065	4,102	4,138	4,176	4,213	4,251	4,289	4,328	4,367
% treated with Beloranib	0.0%	0.0%	0.0%	1.0%	8.0%	16.0%	21.0%	25.0%	28.0%	30.0%	32.0%	33.0%	34.0%	35.0%	35.0%	35.0%	28.0%	14.0%
PWS Patients on Beloranib	-	-	-	39	311	627	831	998	1,128	1,219	1,312	1,366	1,420	1,475	1,488	1,501	1,212	611
Annual Cost of Therapy	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Gross Revenues ($MM)	$0.0	$0.0	$0.0	$5.8	$46.6	$94.1	$124.6	$149.7	$169.2	$182.9	$196.9	$204.9	$213.0	$221.2	$223.2	$225.2	$181.8	$91.7
%<12 years old	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
US PWS Patients <12 yr/old	3,750	3,784	3,818	3,852	3,887	3,922	3,957	3,993	4,029	4,065	4,102	4,138	4,176	4,213	4,251	4,289	4,328	4,367
% treated with Beloranib	0.0%	0.0%	0.0%	0.0%	1.0%	8.5%	16.0%	21.0%	25.0%	28.0%	30.0%	32.0%	33.0%	34.0%	35.0%	35.0%	24.5%	12.3%
PWS Patients on Beloranib	-	-	-	-	39	333	633	838	1,007	1,138	1,230	1,324	1,378	1,433	1,488	1,501	1,060	535
Annual Cost of Therapy	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Gross Revenues ($MM)	$0.0	$0.0	$0.0	$0.0	$5.8	$50.0	$95.0	$125.8	$151.1	$170.7	$184.6	$198.6	$206.7	$214.9	$223.2	$225.2	$159.1	$80.2
Approval Probability	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
US P(w) Beloranib PWS Revenues	**$0.0**	**$0.0**	**$0.0**	**$4.0**	**$36.7**	**$100.9**	**$153.7**	**$192.8**	**$224.2**	**$247.6**	**$267.0**	**$282.4**	**$293.8**	**$305.2**	**$312.5**	**$315.3**	**$238.6**	**$120.4**
PWS Patients in the EU	12,000	12,108	12,217	12,327	12,438	12,550	12,663	12,777	12,892	13,008	13,125	13,243	13,362	13,482	13,604	13,726	13,850	13,974
% >12 years old	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
EU PWS Patients >12 yr/old	6,000	6,054	6,108	6,163	6,219	6,275	6,331	6,388	6,446	6,504	6,562	6,621	6,681	6,741	6,802	6,863	6,925	6,987
% treated with Beloranib	0.0%	0.0%	0.0%	0.0%	2.5%	4.0%	6.0%	8.0%	11.0%	13.0%	15.0%	16.0%	17.0%	18.0%	19.0%	20.0%	16.0%	8.0%
PWS Patients on Beloranib	-	-	-	-	155	251	380	511	709	846	984	1,059	1,136	1,213	1,292	1,373	1,108	559
Annual Cost of Therapy	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000
Gross Revenues	$0.0	$0.0	$0.0	$0.0	$14.0	$22.6	$34.2	$46.0	$63.8	$76.1	$88.6	$95.3	$102.2	$109.2	$116.3	$123.5	$99.7	$50.3
%<12 years old	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
US PWS Patients <12 yr/old	6,000	6,054	6,108	6,163	6,219	6,275	6,331	6,388	6,446	6,504	6,562	6,621	6,681	6,741	6,802	6,863	6,925	6,987
% treated with Beloranib	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	4.0%	6.0%	8.0%	11.0%	13.0%	15.0%	17.0%	18.0%	19.0%	20.0%	10.0%	4.0%
PWS Patients on Beloranib	-	-	-	-	-	157	253	383	516	715	853	993	1,136	1,213	1,292	1,373	692	279
Annual Cost of Therapy	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000
Gross Revenues ($MM)	$0.0	$0.0	$0.0	$0.0	$0.0	$14.1	$22.8	$34.5	$46.4	$64.4	$76.8	$89.4	$102.2	$109.2	$116.3	$123.5	$62.3	$25.2
Approval Probability	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
EU P(w) Beloranib PWS Revenues	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$9.8**	**$25.7**	**$39.9**	**$56.3**	**$77.2**	**$98.3**	**$115.8**	**$129.3**	**$143.1**	**$152.9**	**$162.8**	**$172.9**	**$113.4**	**$52.8**
WW Beloranib Gross Sales	$0.0	$0.0	$0.0	$5.8	$66.5	$180.8	$276.6	$356.0	$430.5	$494.1	$546.8	$588.2	$624.1	$654.5	$679.0	$697.5	$502.9	$247.4
WW Beloranib P(w) Sales	**$0.0**	**$0.0**	**$0.0**	**$4.0**	**$46.5**	**$126.6**	**$193.6**	**$249.2**	**$301.4**	**$345.9**	**$382.8**	**$411.8**	**$436.9**	**$458.1**	**$475.3**	**$488.2**	**$352.0**	**$173.2**

Assumptions	
Beloranib US Cost	$150,000
Beloranib EU Cost	$90,000
Probability of Approval	70%

Source: Company Presentations and Leerink Partners Research

HIAO Revenue Model	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E
HIAO Patients in the US	6,260	6,316	6,373	6,431	6,488	6,547	6,606	6,665	6,725	6,786	6,847	6,908	6,971	7,033	7,097	7,160	7,225	7,290
% with post-treatment hypothalamic dysfunction	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
beloranib HIAO candidates	3,130	3,158	3,187	3,215	3,244	3,273	3,303	3,333	3,363	3,393	3,423	3,454	3,485	3,517	3,548	3,580	3,612	3,645
% treated with Beloranib	0.0%	0.0%	0.0%	0.0%	2.0%	6.0%	13.0%	18.0%	24.0%	29.0%	32.0%	34.0%	36.0%	38.0%	40.0%	40.0%	32.0%	16.0%
Patients on Beloranib	-	-	-	-	65	196	429	600	807	984	1,095	1,174	1,255	1,336	1,419	1,432	1,156	583
Annual Cost of Therapy	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Gross Revenues ($MM)	$0.0	$0.0	$0.0	$0.0	$9.7	$29.5	$64.4	$90.0	$121.1	$147.6	$164.3	$176.2	$188.2	$200.4	$212.9	$214.8	$173.4	$87.5
Approval Probability	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
US P(w) Beloranib HIAO Revenues	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$5.8**	**$17.7**	**$38.6**	**$54.0**	**$72.6**	**$88.6**	**$98.6**	**$105.7**	**$112.9**	**$120.3**	**$127.7**	**$128.9**	**$104.0**	**$52.5**
HIAO Patients in the EU	14,850	14,984	15,119	15,255	15,392	15,530	15,670	15,811	15,953	16,097	16,242	16,388	16,536	16,684	16,835	16,986	17,139	17,293
% with post-treatment hypothalamic dysfunction	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
beloranib HIAO candidates	7,425	7,492	7,559	7,627	7,696	7,765	7,835	7,906	7,977	8,049	8,121	8,194	8,268	8,342	8,417	8,493	8,569	8,647
% treated with Beloranib	0.0%	0.0%	0.0%	0.0%	1.0%	4.0%	8.0%	12.0%	16.0%	20.0%	22.0%	24.0%	26.0%	28.0%	30.0%	30.0%	24.0%	12.0%
Patients on Beloranib	-	-	-	-	77	311	627	949	1,276	1,610	1,787	1,967	2,150	2,336	2,525	2,548	2,057	1,038
Annual Cost of Therapy	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
Gross Revenues ($MM)	$0.0	$0.0	$0.0	$0.0	$6.9	$28.0	$56.4	$85.4	$114.9	$144.9	$160.8	$177.0	$193.5	$210.2	$227.3	$229.3	$185.1	$93.4
Approval Probability	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
EU P(w) Beloranib HIAO Revenues	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$4.2**	**$16.8**	**$33.8**	**$51.2**	**$68.9**	**$86.9**	**$96.5**	**$106.2**	**$116.1**	**$126.1**	**$136.4**	**$137.6**	**$111.1**	**$56.0**
WW Gross Beloranib HIAO Revenues	$0.0	$0.0	$0.0	$0.0	$16.7	$57.4	$120.8	$175.4	$235.9	$292.5	$325.1	$353.2	$381.7	$410.7	$440.2	$444.1	$358.5	$180.9
WW P(w) Beloranib HIAO Revenues	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$10.0**	**$34.4**	**$72.5**	**$105.2**	**$141.6**	**$175.5**	**$195.1**	**$211.9**	**$229.0**	**$246.4**	**$264.1**	**$266.5**	**$215.1**	**$108.5**

Assumptions	
Beloranib US Cost	$150,000
Beloranib EU Cost	$90,000
Probability of Approval	60%

Source: Company Presentations and Leerink Partners Research

Product	Event	Timing
Beloranib	Initiate US Phase III PWS Trial	3Q14
Beloranib	Initiate Phase IIb Severe Obesity Trial	4Q14
Beloranib	Phase IIa HIAO Data	1Q15
ZGN-839	File NASH/Type II Diabetes IND	mid-2015
Beloranib	Initate EU Phase III PWS Trial	mid-2015
Beloranib	6 Month Interim Severe Obesity Data	4Q15/1Q16
Beloranib	Initiate Phase III HIAO Study	2016
Beloranib	6 Mo. Phase III PWS Data	1Q16

Source: Company Presentations and Leerink Partners Research

Disclosures Appendix

Analyst Certification

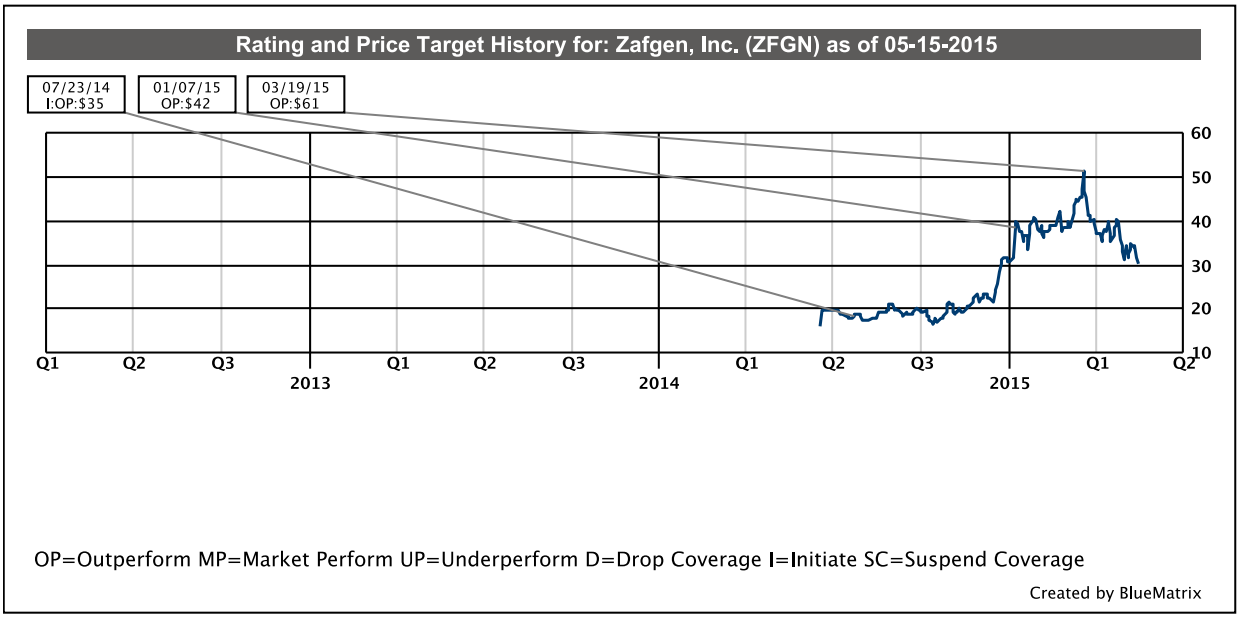
I, Joseph P. Schwartz, certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

Valuation

We derive a ~$56 per share value for ZFGN using an 11% discount rate and a 2% terminal growth rate. Our price target assumes 70% and a 60% probabilities of beloranib approval in PWS and HIAO, respectively, which leads to our risk adjusted peak sales estimates of ~$485MM and ~$270MM in each indication. We only model ~$200MM in peak sales in severe obesity, which we believe holds the potential to be very conservative if/when ZFGN generates pivotal beloranib data in orphan indications.

Risks to Valuation

Risks to our valuation include disappointing clinical data, regulatory setbacks, dilution risk from an additional equity offering, and commercial shortfalls. Because ZFGN has only one late stage product, the occurrence of any of these could impact the stock significantly.



Distribution of Ratings/Investment Banking Services (IB) as of 03/31/15				
			IB Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [OP]	151	70.20	55	36.00
HOLD [MP]	64	29.80	2	3.00
SELL [UP]	0	0.00	0	0.00

Explanation of Ratings

Outperform (Buy): We expect this stock to outperform its benchmark over the next 12 months.

Market Perform (Hold/Neutral): We expect this stock to perform in line with its benchmark over the next 12 months.

Underperform (Sell): We expect this stock to underperform its benchmark over the next 12 months.The degree of outperformance or underperformance required to warrant an Outperform or an Underperform rating should be commensurate with the risk profile of the company.

For the purposes of these definitions the relevant benchmark will be the S&P 600® Health Care Index for issuers with a market capitalization of less than $2 billion and the S&P 500® Health Care Index for issuers with a market capitalization over $2 billion.

Important Disclosures

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Leerink Partners LLC makes a market in Zafgen, Inc.

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