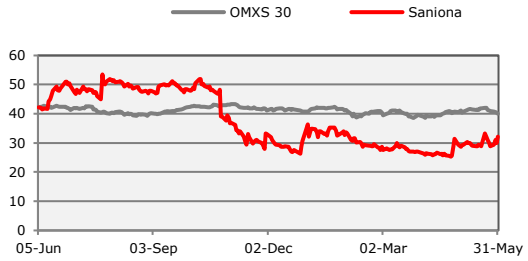
Summary

Saniona (Sanion.st)

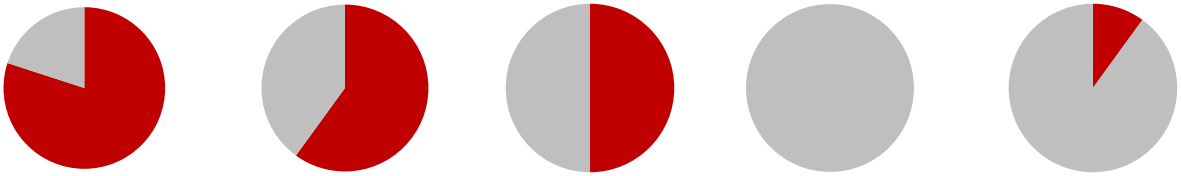
PWS is (ultra-) orphan!

- In this update, we will do a deep-dive of the two programs that have advanced in the last couple of months, i.e., the Ataxia program and Tesomet within eating disorders. The Ataxia program still represents a small share of our total value whereas we see the Tesomet program within eating disorders to have the largest potential for Saniona.
- Our new base value of Saniona is SEK 68 (SEK 70) per share with a Bear-Bull value of SEK 25 (SEK 28) and SEK 130 (SEK 125) respectively. Positive contributors have been the advancement of the Cadent program into clinical development and, in particular, our revised estimates within PWS. Previous estimates within PWS were not even close to reflecting the real potential within this disorder. Negative contributors are primarily related to the strategic shift within Tesomet which has caused a slight short-term negative net effect.

List:	Small Cap
Market Cap:	706 MSEK
Industry:	Biotech
CEO:	Jörgen Drejer
Chairman:	J. Donald DeBethizy



Redeye Rating (0 – 10 points)



Management	Ownership	Profit outlook	Profitability	Financial strength
8,0 points	6,0 points	5,0 points	0,0 points	1,0 points

Key Financials

	2016	2017	2018E	2019E	2020E
Revenue, MSEK	75	21	48	19	42
Growth	*450%*	*-72%*	*133%*	*-61%*	*124%*
EBITDA	5	-57	-26	-67	-50
EBITDA margin	*6%*	*-274%*	*-54%*	*-362%*	*-120%*
EBIT	4	-57	-27	-68	-51
EBIT margin	*6%*	*-276%*	*-55%*	*-365%*	*-122%*
Pre-tax earnings	5	-56	-27	-68	-51
Net earnings	2	-56	-27	-68	-51
Net margin	*3%*	*-272%*	*-55%*	*-365%*	*-122%*
Dividend/Share	0,00	0,00	0,00	0,00	0,00
EPS adj.	0,00	-2,55	-1,21	-3,08	-2,30
P/E adj.	0,0	0,0	-26,4	-10,4	-13,9
EV/S	-0,7	-1,1	14,8	42,2	20,0
EV/EBITDA	-11,7	0,4	-27,3	-11,7	-16,6

Share information	
Share price (SEK)	32,0
Number of shares (m)	22,1
Market Cap (MSEK)	706
Net debt (MSEK)	10
Free float (%)	73 %
Daily turnover ('000)	1850

Analysts:
Anders Hedlund
anders.hedlund@redeye.se

Redeye Rating: Background and definitions

The aim of a Redeye Rating is to help investors identify high-quality companies with attractive valuation.

Company Qualities

The aim of Company Qualities is to provide a well-structured and clear profile of a company's qualities (or operating risk) – its chances of surviving and its potential for achieving long-term stable profit growth.

We categorize a company's qualities on a ten-point scale based on five valuation keys; 1 – Management, 2 – Ownership, 3 – Profit Outlook, 4 – Profitability and 5 – Financial Strength.

Each valuation key is assessed based a number of quantitative and qualitative key factors that are weighted differently according to how important they are deemed to be. Each key factor is allocated a number of points based on its rating. The assessment of each valuation key is based on the total number of points for these individual factors. The rating scale ranges from 0 to +10 points.

The overall rating for each valuation key is indicated by the size of the bar shown in the chart. The relative size of the bars therefore reflects the rating distribution between the different valuation keys.

Management

Our Management rating represents an assessment of the ability of the board of directors and management to manage the company in the best interests of the shareholders. A good board and management can make a mediocre business concept profitable, while a poor board and management can even lead a strong company into crisis. The factors used to assess a company's management are: 1 – Execution, 2 – Capital allocation, 3 – Communication, 4 – Experience, 5 – Leadership and 6 – Integrity.

Ownership

Our Ownership rating represents an assessment of the ownership exercised for longer-term value creation. Owner commitment and expertise are key to a company's stability and the board's ability to take action. Companies with a dispersed ownership structure without a clear controlling shareholder have historically performed worse than the market index over time. The factors used to assess Ownership are: 1 – Ownership structure, 2 – Owner commitment, 3 – Institutional ownership, 4 – Abuse of power, 5 – Reputation, and 6 – Financial sustainability.

Profit Outlook

Our Profit Outlook rating represents an assessment of a company's potential to achieve long-term stable profit growth. Over the long-term, the share price roughly mirrors the company's earnings trend. A company that does not grow may be a good short-term investment, but is usually unwise in the long term. The factors used to assess Profit Outlook are: 1 – Business model, 2 – Sale potential, 3 – Market growth, 4 – Market position, and 5 – Competitiveness.

Profitability

Our Profitability rating represents an assessment of how effective a company has historically utilised its capital to generate profit. Companies cannot survive if they are not profitable. The assessment of how profitable a company has been is based on a number of key ratios and criteria over a period of up to the past five years: 1 – Return on total assets (ROA), 2 – Return on equity (ROE), 3 – Net profit margin, 4 – Free cash flow, and 5 – Operating profit margin or EBIT.

Financial Strength

Our Financial Strength rating represents an assessment of a company's ability to pay in the short and long term. The core of a company's financial strength is its balance sheet and cash flow. Even the greatest potential is of no benefit unless the balance sheet can cope with funding growth. The assessment of a company's financial strength is based on a number of key ratios and criteria: 1 – Times-interest-coverage ratio, 2 – Debt-to-equity ratio, 3 – Quick ratio, 4 – Current ratio, 5 – Sales turnover, 6 – Capital needs, 7 – Cyclicality, and 8 – Forthcoming binary events.

Prader-Willi Syndrome deep-dive

Disease Background

Prader-Willi Syndrome (PWS) is an inherited disorder caused by loss of expression in the region of chromosome pair 15; the father should normally contribute the absent region. The gene depletion results in uncontrolled signaling between the central nervous system, specifically the hypothalamus, and the endocrine system. Hypothalamus is a critical center in the brain that regulates appetite and hunger. Due to the dysfunctional signaling from the hypothalamus, PWS patients form a constant hunger and craving for food, no matter how much they eat.

Half of the PWS patients die when they are still children

PWS patients have a life-expectancy no longer than in their thirties, approximately half of them dies when they are still children. Primary reasons for death are related to choking and rupture bowel which is due to the constant craving for food. Hyperphagia (food craving) is hence a life-threatening part of the disease and causes a heavy burden on caregivers, family, and society. The patients have to be held under constant supervision and with restricted access to food.

The first-line diagnosis of a patient suspected to have PWS is to assess the patient clinically. In infancy, PWS is characterized by severe hypotonia, poor sucking abilities, and feeding difficulties in general. As the patient reaches early childhood, excessive eating (hyperphagia) and morbid obesity become evident symptoms. There are also signs of motor impairment and delay in language development. Cognitive dysfunction and behavioral problems become apparent as the patient reaches early adulthood. PWS patients do also have cognitive impairments, and usually some degree of mental retardation.

PWS: Clinical criterias to justify DNA testing

Age at assessment features

Birth to 2 y	1. Hypotonia with poor suck.
2y–6 y	1. Hypotonia with history of poor suck. 2. Global developmental delay.
6y–12 y	1. History of hypotonia with poor suck (hypotonia often persists). 2. Global developmental delay. 3. Excessive eating (hyperphagia; preoccupation with food) with central obesity if uncontrolled.
13 y through adulthood	1. Cognitive disabilities; usually mild mental retardation. 2. Excessive eating (hyperphagia; preoccupation with food) with central obesity if uncontrolled. 3. Hypothalamic hypogonadism and/or typical behavior problems (including temper tantrums, perseverative and compulsive-like behaviors).

Source: PWSAUSA.org

PWS can be diagnosed with high accuracy using gene testing

If a patient is subject to the clinical symptoms as described above, a DNA methylation testing can be performed. This test detects PWS disorder with a > 99 percent accuracy. The disorder has thus potential to have a high treatment ratio.

Currently only one drug is approved for PWS

The management paradigm of treating PWS is at present limited to lifestyle modifications, physical- and psychiatric therapy, and strict supervision of the patient's access to food. There is currently one approved drug therapy, Genotropin (somatropin, Pfizer), for the treatment of PWS. Genotropin is a

growth hormone receptor and has shown efficacy towards normalizing height, decrease fat mass and maintain muscle volume.

Market Outlook

Genotropin (somatropin) is a biosimilar that was taken to market in the US in 2000 and later by Novartis (somatropin) in Europe. A key feature in PWS is growth hormone deficiency, and by injecting growth hormone, positive effects such as aforementioned are possibly obtained. Genotropin has been close to blockbuster potential (i.e., Sales > USD 1.000 million) at its peak almost ten years ago. Genotropin is approved for treating PWS, Turner syndrome and short stature.

Saniona: PWS Clinical pipeline*

Drug_Name	Lead_Company	Current_Phase	Molecule	Target
Genotropin	Pfizer Inc.	Approved	Protein	Growth hormone receptor (GHR)
Omnitrope	Novartis AG	Approved in Europe	Protein	Growth hormone receptor (GHR)
Victoza	Novo Nordisk A/S	III	Peptide	GLP-1 Receptor
Biosimilar Somatropin	LG Chem, Ltd.	III	Protein	Growth hormone receptor (GHR)
DCCR	Soleno Therapeutics, Inc.	III	Small Molecule	Potassium channels
Livoletide	Millendo Therapeutics, Inc.	II	Peptide	Ghrelin Receptor
Tesomet	***Saniona AB***	***II***	***Small Molecule***	***Beta Adrenergic Receptors^ Dopamine Reuptake^ Norepinephrine (Noradrenaline) Reuptake/Transporter^ Serotonin Reuptake***
Cannabidiol (INSYS)	INSYS Therapeutics, Inc.	II	Small Molecule	Cannabinoid reuptake/Endocannabinoid system^ Cannabinoid-1 (CB1) receptor^ Cannabinoid-2 (CB2) receptor^ GPR55^ Serotonin 5-HT1A receptor
Setmelanotide	Rhythm Pharmaceuticals, Inc.	II	Peptide	Insulin Receptor^ Melanocortin (MC) receptors
LV-101	Levo Therapeutics, Inc.	II	Small Molecule	Oxytocin Receptor

Source: Biomedtracker, Redeye Research
**Only clinical pipeline drugs included*

Tesomet has best-in-class potential in treating PWS patients

In the competitive landscape of PWS, we find Saniona to have an attractive position. We base this on several arguments. Firstly, tesofensine has a unique mechanism of action in the current competitive landscape. There are no other triple monoamine reuptake inhibitors with heart stabilizing mechanism in the PWS landscape. Perhaps most importantly though, most of the pipeline drugs does not address hyperphagia, which we find to be the acute and life-threatening part of the disease. Growth hormone drugs and glucagon peptides (Victoza) have primarily showed efficacy to improve height, and decrease fat mass (GHR) and to improve glycemic parameters (Glucagon-like peptides). Within the drug candidates that do target the hyperphagia symptom in PWS patients, e.g. DCCR and Livoletide, Saniona has showed highly competitive clinical phase II results. To give a recap, the first part of the phase IIa trial in adults living with PWS revealed that patients treated with Tesomet had a:

- Mean change in body weight of 5 percent after eight weeks (N=5).
- Mean change in body weight of 6.76 percent after 13 weeks (N=2).
- Change in hyperphagia score fell from 10.00 (n=6) at baseline to 1.00 (n=5) after eight weeks and to 0.00 after 13 weeks (n=2).

The score 0.00 after 13 weeks of treatment is equivalent to no signs of hyperphagia. Based on this, we hence argue that Tesomet has the potential to establish itself as a standard treatment for PWS patients in EU and the US, with the possibility to become an effective mono- and/or combination therapy.

Tesomet – Status and Estimates in PWS

Our previous estimates of the Tesomet program within PWS were as follows:

- Risk-adjusted LoA of 20 percent
- Top Sales at USD 240 million (based on n=30k, market penetration of 25 percent, and an annual cost of USD 30k)
- Launch in 2022

We revise our likelihood of approval

We now see the Tesomet program within eating disorders as Saniona's lead indication. In the disease group 'Endocrine,' the likelihood of approval is 24 percent according to Hay et al. (2014) in the current phase that Saniona is with Tesomet for the treatment of PWS. We thus change it to 24 percent.

To have a more sophisticated analysis of the Tesomet program within PWS, we have split our analysis between the US and EU region. There is not a lot of data to capture the prevalence of PWS in the two markets, and different associations have different assumptions. For example, PWSAUSA estimates that there could be as many as one PWS patient for every 12.000 individuals in the US. When we look at Danish and Swedish associations and authorities, they tend to estimate the prevalence between 1/25.000 up to 1/44.000 in prevalence. We take the 'golden middle way' approach and estimate the prevalence to one PWS patient for every 27.000 individuals. Based on a population of roughly 315 million in the US and 500 million in the EU, the PWS prevalence would be approximately 12.000 and 19.000 patients respectively.

Market penetration of 25 percent in the US and EU

We have assumed a market penetration of 25 percent (unchanged) for Tesomet in the regions. Our estimate is rather high; we motivate it with Saniona's encouraging clinical results and especially its potential to reduce the hyperphagia and weight loss.

Annual price significantly increased from our previous estimate

The assumptions of top sales estimates do boil down very much to a pricing discussion in the end. We have used an annual cost per patient of USD 140.000 (US) and USD 98.000 (EU). Our rationale for this high price is that the average annual cost per patient for orphan drugs amounted to approximately USD 140.000 in 2016 in the US (source: Evaluate Pharma, 2016). And PWS is orphan, be it a very much of orphan considering that the definition as defined by law is a patient population of < 200.000 (US) and < 250.000 (EU) patients. From that perspective, our annual cost per patient could still consider being rather conservative.

Saniona: Top sales US within PWS	
Prevalence (m)	**0,012**
Diagnosed and treated	90%
Diagnosed and treated (m)	**0,011**
Market penetration	25%
Saniona patients (m)	**0,003**
Annual treatment cost	140 000 USD
Top sales estimate ($m)	**370**

Source: Redeye Reseach

Saniona: Top sales EU within PWS	
Prevalence (m)	**0,019**
Diagnosed and treated	90%
Diagnosed and treated (m)	**0,017**
Market penetration	25%
Saniona patients (m)	**0,004**
Annual treatment cost	98 000 USD
Top sales estimate ($m)	**410**

Source: Redeye Reseach

Revised top sales: USD 780 million in the US and EU combined

As we stated above, when estimating top sales in the PWS disorder, it comes down to what price can be obtained and what is likely market penetration. To give a clearer picture of how our assumptions on annual cost per patient and market penetration affect our top sales estimates, we present a sensitivity analysis for the two regions.

Saniona: PWS sensitivity sales for US market					
Price (k$) / Penetration	**100**	**120**	**140**	**160**	**180**
15%	160	190	220	250	280
20%	210	250	290	340	380
25%	260	320	370	420	470
30%	320	380	440	500	570
35%	370	440	510	590	660

Source: Redeye Research

Saniona: PWS sensitivity sales for EU market					
Price (k$) / Penetration	**70**	**84**	**98**	**112**	**126**
15%	180	210	250	280	320
20%	230	280	330	370	420
25%	290	350	410	470	530
30%	350	420	490	560	630
35%	410	490	570	650	740

Source: Redeye Research

Ataxia program

CAD-1883 is in clinical development

We were encouraged to take part of the news earlier this year that the Cadent Therapeutics program has moved into clinics. Albeit being a small portion of our total value of Saniona, we will follow this projects evolvement closely. Saniona has a 7 percent ownership and is obliged to single-digit royalties on future sales. We find this program to have high signal value as it is the first program that has gone into clinics from Saniona's ion channel program since the inception of the company.

CAD-1883 is being developed for the treatment of Spinocerebellar Ataxia (SCA) and essential tremors. SCA is the indication we have chosen to base our model on, and what we will focus on in this section. SCA is a rare disease with potential orphan status, whereas essential tremor is the most common movement disorder.

SCA is a rare movement disorder, with orphan status potential

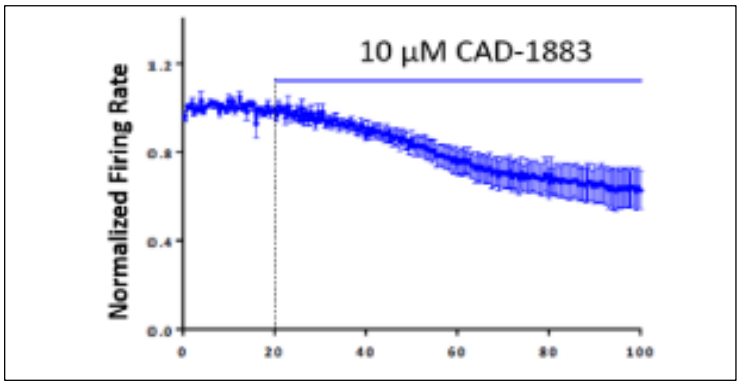
SCA is caused by a dysregulating function in the cerebellum part of the brain. In this part, the SK2 channel (a calcium-activated potassium channel) plays a key role in controlling the tonic firing of Purkinje cells, a neuron type of cell. Activating the SK2 channels has a normalizing effect on the irregular firing which is deemed to be the cause of SCA. The disorder manifests through difficulties in controlling movements, it also impairs balance and the ability to walk.

CAD-1883 was discovered in the research collaboration with Cadent Therapeutics. The drug candidate has demonstrated selectivity to especially SK2 channels where it was found to be a positive allosteric modulator. CAD-1883 is an oral formulation that crosses the blood-brain barrier and executes its biologic effect in the brain. It interacts directly with the channels, e.g. SK2, in the brain which are responsible for controlling the firing of Purkinje cells. Preclinical studies were conducted in ataxia mouse models which we believe has a credible transferability to human models in this indication.

Clinical trial in SCA patients could get started in early 2019

Cadent Therapeutics is conducting a phase I study on healthy volunteers to determine safe drug levels. We expect trial completion in late 2018. The plan is then to conduct a clinical trial with SCA patients in early 2019.

Saniona: CAD-1883 in animal models



Source: Cadent Therapeutics

Figure illustrates reduction of neuron firing in mouse models. CAD-1883 reduced the firing rate by approximately 40 percent (n=24).

Saniona pipeline and anticipated news flow – temperature increases

Several read-outs in the coming nine months

The potential value drivers for the remaining 2018 and beginning of 2019 are substantial. It includes, among others, read-out from phase III (tesofensine), read-out from phase II (Tesomet-PWS), interim-data from phase II (NS2359), and candidate drug (CD) selection by Boehringer Ingelheim (BI).

A possible CD selection by BI would be entitled to a risk-adjusted milestone of roughly SEK 30 million to Saniona according to our estimates.

Our anticipated news flow for tesofensine phase III study remains. We think data can be presented at the beginning of 2019.

Positive phase I results with Tesomet reported last week

For the Tesomet program in general, Saniona reported positive results from the phase I study last week. That means that the innovative fixed-dose combination of tesofensine and metoprolol is now actually a real thing, it is an oral formulation drug candidate. The trial was conducted in 60 healthy male subjects with the aim to investigate the pharmacokinetic profile and bioavailability. Tesomet was well tolerated and demonstrated that it permits daily dosing.

For Tesomet program within metabolic diseases, we have postponed a start of a phase IIb trial to first half of the year 2019. The trial will be important on many aspects. Specifically, we want to see the efficacy in glycemic endpoints before we feel entitled to include T2D/pre-diabetic patients in our estimates.

We hope to take part of read-out in the PWS for adolescents in beginning 2019. The second part of the study in PWS adolescents will comprise up to 10 patients. Treatment period is 12 weeks, and participants will be randomized 3:2 to either treatment with Tesomet (tesofensine 0.125 mg + metoprolol 25 mg daily) or placebo. The primary endpoint is; change in body weight over the treatment period. Secondary endpoints include a measure of hyperphagia and other metabolic aspects.

There is no change in where we expect to take part of interim results for the treatment of cocaine addiction with NS2359 (H2'18). Interim results are approaching, this catalyst in itself should cause a temperature arise on the stock market.

Saniona: Project portfolio

Project	Indication	Preclinical Research	Preclinical Development	Phase I	Phase II	Phase III	*Sponsor*	*Next Catalyst Event*
Tesofensine	Obesity						*Medix*	*H1'19 (data from ph III)*
Tesomet	Metabolic diseases / T2D						*Saniona*	*H1'19 (ph IIb start)*
Tesomet	Prader-Willi syndrome						*Saniona*	*H1'19 (data from ph II)*
NS2359	Cocaine addiction						*University of Pennsylvania*	*H2'18 (interim data ph II)*
Cadent Therapeutics program	Ataxia						*Cadent Therapeutics*	*H2'18 (data from ph I)*
SAN711	Neuropathic pain						*Saniona*	*H1'19 (initiation ph I)*
BI program	Schizophrenia						*Boehringer Ingelheim*	*H2'18 (CD selection)*
IK program	Inflammation, IBD						*Saniona*	*H1'19 (initiation ph I)*
Kv7 program	Pain, Epilepsy, UI						*Saniona*	*Ongoing (partner)*
Nicotinic a6 program	Parkinson's disease						*Michael J. Fox Foundation*	*H2'18 (CD selection)*

Source: Saniona, Redeye Research

All in all, we continue to see Saniona as a platform based know-how company within ion channels. The company has a broad portfolio that targets some of the world's most common disorders (obesity, diabetes) as well as rare diseases (PWS, Ataxia) with an attractive drug and market profile. That is called diversification, with a touch of orphan!

Financials

Revenues are mainly related to milestones in 2018-2019, tesofensine could start to entail royalty income in 2020

The most significant revenue we have anticipated in 2018 is the milestone payment from BI, triggered by candidate drug selection. We have also estimated risk-adjusted milestones in 2019. The revenue increase in 2020 is related to tesofensine and where royalty on sales could start to kick in.

'Other External Costs' in 2018 costs are attributed to preclinical development costs for the internal programs and are estimated based on costs for GMP production, studies in animal models, toxicology studies, etc. Of the clinical programs, Saniona is currently only incurring costs for the Tesomet program. Tesofensine, NS2359, and the Ataxia program are under collaboration partner's income statement. The Tesomet program development costs in 2018 – 2020 include estimates for the ongoing phase IIa trial (PWS), a phase IIb study within metabolic diseases (est. start in H1'19), and a phase II/III study (PWS) that we assume can start in late 2019.

Pre-clinical programs and Tesomet clinical development are main cost drivers in 2018-2020.

Saniona entered Q2'18 with a cash position of approximately SEK 25,4 million. So far into the year, Saniona has drawn five trances from the deal with Nice & Green with a pace of one each month. We think that the funding deal is likely to continue at this pace until we see the outcome of the important value drivers that are due to take place in H2'18 – H1'19.

Saniona: Income Statement 2018 - 2020*

(SEKm)	2016	2017	2018E	2019E	2020E
Net Sales	74,9	20,7	48,2	18,6	41,7
Other Income	0,0	0,0	0,0	0,0	0,0
Total Operating Income	**74,9**	**20,7**	**48,2**	**18,6**	**41,7**
Operating Expenses					
Raw Materials and Consumables	-1,5	-3,3	-2,3	-2,4	-2,2
Other External Costs	-51,1	-51,4	-49,0	-58,8	-64,1
Personnel costs	-17,8	-22,7	-23,2	-24,8	-25,7
Depreciations and write-downs	-0,4	-0,6	-0,5	-0,5	-0,6
Total Operating Expenses	**-70,8**	**-77,9**	**-75,0**	**-86,4**	**-92,5**
Operating Profit	**4,2**	**-57,2**	**-26,8**	**-67,8**	**-50,8**
Net Financials	0,8	0,9	0,0	0,0	0,0
Profit/Loss after Financial Items	**4,9**	**-56,3**	**-26,8**	**-67,8**	**-50,8**
Tax	-2,7	7,1	0,0	0,0	0,0
Profit/Loss	**2,2**	**-49,2**	**-26,8**	**-67,8**	**-50,8**

Source: Redeye Research

** Risk-adjusted*

Valuation

We value Saniona based on a Sum-of-the-parts model where each project is valued separately. To have a dynamic view of our valuation of Saniona, we have scheduled a Base-scenario (our main scenario) as well as an optimistic Bull-scenario and a pessimistic Bear-scenario. Our Bull- and Base-scenario are based on possible outcomes of events that will happen in the next 24 months. We are focusing mostly on Saniona's clinical pipeline as it is those programs that represent the largest value drivers.

Base-scenario

In our Base-scenario, the positive contributors since our last update are mostly related to our new estimates in the PWS field and, to a smaller extent, the progress in the Ataxia project. The primary negative contributor is to a small extent attributed to the dilution effect, following the conversion of shares by N&G, but mainly because our hefty downward adjustment within metabolic disorders for Tesomet. The adjustment within metabolics is due to Saniona's strategic shift, i.e. addressing rare eating disorders in the US and EU and with a go-to-market strategy without seeking a license partner. We have hence updated our valuation only to include rest-of-the-world (RoW, ex. US and EU) patients with obesity. Our previous estimates for top sales of USD 950 million were solely based on the assumption of current sales trend in the US for obesity, which is the only region where relevant reimbursement codes for obesity drugs do exist as far as we know.

Sum-of-the-Parts Valuation

Saniona

Project	Indication	Partner	Likelihood of Approval	Royalty rate	Top Sales ($m)	Launch year	Net Present Value (SEKm)*
Tesofensine	Obesity	Medix (Mx, Arg)	60%	14%	115	2020	171
Tesomet	Obesity/T2D	-	30%	18%	90	2023	44
Tesomet	PWS	-	24%	38%	780	2022	766
NS2359	Cocaine Addiction	University of Pennsylvania	12%	30%	500	2022	197
BI program	Schizophrenia	Boehringer Ingelheim	9%	7%	1 350	2025	112
Cadent program	Ataxia	Cadent Therapeutics	12%	5%	1 130	2024	68
Kv7 program	Pain, epilepsy, and UI	Proximagen	8%	6%	610	2027	22
Nicotinic a6 program	Parkinson's Disease	Michael J. Fox Foundation	4%	12%	910	2026	42
SAN711	Neuropathic Pain	-	5%	16%	1 250	2025	99
IK Program	IBD	-	5%	16%	1 800	2027	118
Technology value							**1 639**
Net cash position (p. 2018-12-31)							20
Shared costs							-180
Ownership Cadent Therapeutics							30
Fair value							**1 509**
Number of shares, full dilution (Mn)							22
Per share value, SEK							**68**

Source: Redeye Research

* totals may not sum due to roundings

Base-scenario: SEK 68 per share

We strongly emphasize that we see the strategic shift as the right thing to do. We think the management of Saniona are able and trustworthy in taking the right decisions for their shareholders; we have given them a well-deserved high Redeye rating in the category 'Management.' Although it causes a slight negative net impact to our valuation in the short term, it also reduces a lot of

risk and uncertainty in our model. As we elaborated on in our previous update, a phase III study within metabolic disease is a massive task, requiring huge patient population and long study time. We wouldn't be allowed to update this indication until we had seen a partnership agreement in place for Saniona. In the long-term, it is not even comparable to what shareholder value it could bring whit a go-to-market strategy with an own sales force compared to seeking license agreements.

Bull-scenario

Our optimistic case is based on following assumptions:

- PWS phase II study in adolescents present top-line data. A phase III study is being conducted in 2020, following a dose-finding study. We raise our likelihood of approval accordingly.
- Interim-analysis of the phase II trial for NS2359 against cocaine addiction reveal encouraging results, and the study continues to full read-out.
- The phase III trial with tesofensine in Mexico meets its primary endpoint. NDA process is initiated, and we raise our likelihood of approval accordingly.
- Saniona obtains milestone payments from BI both in 2018 and 2019 as the program in Schizophrenia goes into clinics.

Bull-scenario: SEK 130 per share

Our fair value estimate in our Bull-scenario amounts to SEK 130

Bear-scenario

Our pessimistic case is based on following assumptions:

- Phase II study in adolescents requires a longer dose-finding study to find the therapeutic window where it is both safe and have efficacy. We postpone possible launch and remain with our likelihood of approval even after the phase II trial has been completed.
- Tesomet within metabolic disorders (ROW) don't find any likely path forward, and we exclude it from our model.
- Interim-analysis of NS2359 does not support further clinical studies.
- Results with tesofensine become subject of interpretation, primarily from a safety perspective as study reveals elevated heart rates. Authorities require additional data, and market launch gets postponed.
- BI milestone for CD selection does not happen in 2018 nor 2019. Collaboration discontinues.

Bear-scenario: SEK 25 per share

Our fair value estimate in our Bear-scenario amounts to SEK 25

Summary of scenario-model

Significant upside potential at current share price

Saniona: scenarioanalysis	Bear	Base	Bull
SEK per share	25	68	130
Potential / Risk*	*-22%*	*113%*	*306%*

Source: Redeye Research

* Based on close price 2018-06-01

Sensitivity analysis – WACC

We are currently using a WACC of 15.3 percent in our valuation of Saniona. To shed light on how critical WACC is to the valuation, we present a sensitivity analysis in the figure below.

Saniona: sensitivity analysis WACC*	13.3%	14.3%	15.3%	16.3%	17.3%
Fair value (SEKm)	1 852	1 671	**1 509**	1 364	1 234
SEK per share	84	76	**68**	62	56

Source: Redeye Research

* totals may not sum due to roundings

Risks 0 – 12 Months

Tesofensine / Tesomet program within metabolic diseases

As stated above, we think top-line results from the phase III study could be presented in Q1'19. The absence of top-line results or safety issues could postpone possible launch or even terminate the program in Mexico.

Saniona is now focusing on targeting eating disorder patients in EU and the US; we find it unlikely that they could also target metabolic diseases in these regions, with the same product but on a completely different price level. As we have stated above, reimbursement outside the two regions and Mexico is non-existent as far as we are aware which limits the potential for Tesomet in this field.

Tesomet within eating disorders – an updated strategy requires its own sales force

Saniona has no experience yet of taking candidate drugs to commercialization. An own commercialization strategy brings initial higher risk in the project as there is no longer an involved partner to share funding. This risk factor is to some extent reflected by our increased spread in our Bull- to Bear-scenario.

Saniona is in clinical development phase II with Tesomet within eating disorders. Saniona has yet to prove efficacy on a larger patient population. Although we perceive it is a general risk, there seems also to be somewhat of an balance act to find an optimal dose level in PWS patients.

Cocaine addiction interim-analysis don't meet its primary endpoint

We would be forced to exclude the NS2359 project from our valuation model (SEK 8-9) if the interim-analysis conclude it is not working. There are no drugs available against cocaine addiction today as far as we know and addiction disorders are complex treatment groups which is why we have a rather low risk-adjusted likelihood of approval.

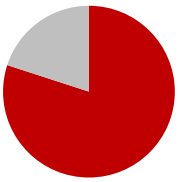
Summary Redeye Rating

The rating consists of five valuation keys, each constituting an overall assessment of several factors that are rated on a scale of 0 to 2 points. The maximum score for a valuation key is 10 points.

Rating changes in the report

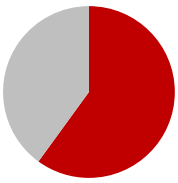
No changes.

Management 8,0p



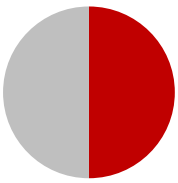
The company has a knowledgeable and experienced management team, which rises above the average in the industry. CEO and CFO have settled important deals for Saniona, license deals as well as research partner deals. Other advantages include substantial shareholding for management.

Ownership 6,0p



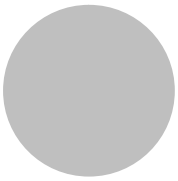
Saniona's management and board of directors have significant ownership in the company, which distinguishes the company positively in relation to many others in the industry. The absence of strong institutional owners can be identified as a challenge for management and the board.

Profit outlook 5,0p



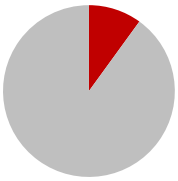
Following Saniona's priority to take Tesomet within eating disorders to the markets in EU and the US, the largest potential is now within the PWS disorder. This indication represents an opportunity where Saniona could develop a go-to-market strategy with its own sales force at the same time has high top sales can be achieved.

Profitability 0,0p



The company is several years from achieving sustainable profitability. Like most other companies in this development phase, there is no consistent history of profitability, which drives up the rate of return required by investors.

Financial strength 1,0p



Saniona entered Q2'18 with a cash position of approximately SEK 25.4 million. So far into the year, Saniona has drawn five trances from the deal with Nice & Green with a pace of one each month. We think that the deal is likely to continue at this pace until we see the outcome of the important value drivers in the coming nine months.

Income statement	2016	2017	2018E	2019E	2020E
Net sales	75	21	48	19	42
Total operating costs	-70	-77	-75	-86	-92
EBITDA	**5**	**-57**	**-26**	**-67**	**-50**
Depreciation	0	-1	-1	-1	-1
Amortization	0	0	0	0	0
Impairment charges	0	0	0	0	0
EBIT	**4**	**-57**	**-27**	**-68**	**-51**
Share in profits	0	0	0	0	0
Net financial items	1	1	0	0	0
Exchange rate dif.	0	0	0	0	0
Pre-tax profit	**5**	**-56**	**-27**	**-68**	**-51**
Tax	-3	0	0	0	0
Net earnings	**2**	**-56**	**-27**	**-68**	**-51**

Balance	2016	2017	2018E	2019E	2020E
Assets					
Current assets					
Cash in banks	53	22	20	18	0
Receivables	15	11	17	16	15
Inventories	0	0	0	0	0
Other current assets	0	0	0	0	0
Current assets	**68**	**33**	**37**	**34**	**15**
Fixed assets					
Tangible assets	1	1	1	3	2
Associated comp.	0	0	0	0	0
Investments	2	6	6	6	6
Goodwill	0	0	0	0	0
Cap. exp. for dev.	0	0	0	0	0
O intangible rights	0	0	0	0	0
O non-current assets	0	0	0	0	0
Total fixed assets	**3**	**8**	**8**	**9**	**9**
Deferred tax assets	0	7	7	7	7
Total (assets)	**71**	**48**	**52**	**51**	**31**
Liabilities					
Current liabilities					
Short-term debt	0	0	13	28	42
Accounts payable	17	11	11	11	11
O current liabilities	0	0	0	0	0
Current liabilities	**17**	**11**	**24**	**39**	**53**
Long-term debt	0	0	0	69	86
O long-term liabilities	0	0	0	0	0
Convertibles	0	0	17	0	0
Total Liabilities	**17**	**11**	**41**	**108**	**139**
Deferred tax liab	0	0	0	0	0
Provisions	0	0	0	0	0
Shareholders' equity	54	38	11	-57	-108
Minority interest (BS)	0	0	0	0	0
Minority & equity	**54**	**38**	**11**	**-57**	**-108**
Total liab & SE	**71**	**48**	**52**	**51**	**31**

Free cash flow	2016	2017	2018E	2019E	2020E
Net sales	75	21	48	19	42
Total operating costs	-70	-77	-75	-86	-92
Depreciations total	0	-1	-1	-1	-1
EBIT	**4**	**-57**	**-27**	**-68**	**-51**
Taxes on EBIT	0	0	0	0	0
NOPLAT	**4**	**-57**	**-27**	**-68**	**-51**
Depreciation	0	1	1	1	1
Gross cash flow	**5**	**-57**	**-26**	**-67**	**-50**
Change in WC	5	-2	-6	1	1
Gross CAPEX	-1	-6	0	-2	0
Free cash flow	**9**	**-64**	**-33**	**-68**	**-49**

Capital structure	2016	2017	2018E	2019E	2020E
Equity ratio	77%	78%	21%	-112%	-348%
Debt/equity ratio	0%	0%	276%	-170%	-119%
Net debt	-53	-22	10	79	128
Capital employed	1	15	21	22	20
Capital turnover rate	1,1	0,4	0,9	0,4	1,3

Growth	2016	2017	2018E	2019E	2020E
Sales growth	450%	-72%	133%	-61%	124%
EPS growth (adj)	0%	0%	-52%	153%	-25%

DCF valuation		Cash flow, MSEK	
WACC (%)	15,3 %	NPV FCF (2018-2020)	-119
		NPV FCF (2021-2027)	782
		NPV FCF (2028-)	816
		Non-operating assets	22
		Interest-bearing debt	0
		Fair value estimate MSEK	1502
Assumptions 2017-2023 (%)			
Average sales growth	36,8 %	**Fair value e. per share, SEK**	**68,1**
EBIT margin	-33,1 %	Share price, SEK	32,0

Profitability	2016	2017	2018E	2019E	2020E
ROE	4%	-123%	-110%	0%	0%
ROCE	8%	-124%	-68%	-168%	-169%
ROIC	70%	-5771%	-175%	-322%	-236%
EBITDA margin	6%	-274%	-54%	-362%	-120%
EBIT margin	6%	-276%	-55%	-365%	-122%
Net margin	3%	-272%	-55%	-365%	-122%

Data per share	2016	2017	2018E	2019E	2020E
EPS	0,00	-2,55	-1,21	-3,08	-2,30
EPS adj	0,00	-2,55	-1,21	-3,08	-2,30
Dividend	0,00	0,00	0,00	0,00	0,00
Net debt	0,00	-1,01	0,46	3,56	5,80
Total shares	0,00	22,06	22,06	22,06	22,06

Valuation	2016	2017	2018E	2019E	2020E
EV	-53,3	-22,3	716,0	784,4	833,8
P/E	0,0	0,0	-26,4	-10,4	-13,9
P/E diluted	0,0	0,0	-26,4	-10,4	-13,9
P/Sales	0,0	0,0	14,6	37,9	16,9
EV/Sales	-0,7	-1,1	14,8	42,2	20,0
EV/EBITDA	-11,7	0,4	-27,3	-11,7	-16,6
EV/EBIT	-12,8	0,4	-26,8	-11,6	-16,4
P/BV	0.0	0.0	64.9	-12.4	-6.5

Share performance		Growth/year	15/17e
1 month	9,6 %	Net sales	-19,8 %
3 month	15,7 %	Operating profit adj	
12 month	-24,2 %	EPS, just	0,0 %
Since start of the year	4,2 %	Equity	-55,2 %

Shareholder structure %	Capital	Votes
Jørgen Drejer	10,8 %	10,8 %
Thomas Feldthus	5,5 %	5,5 %
Avanza Pension	5,3 %	5,3 %
Leif Andersson Consulting ApS	4,6 %	4,6 %
Palle Christophersen	3,7 %	3,7 %
Claus Brästrup	3,3 %	3,3 %
Nordnet Pensionsförsäkring	2,6 %	2,6 %
Nordea Liv & Pension	1,7 %	1,7 %
Janus Schreiber Larsen	1,7 %	1,7 %
Christian Olofsson	1,6 %	1,6 %

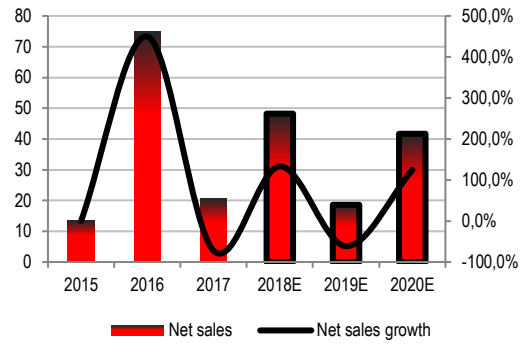
Share information	
Reuters code	Sanion.st
List	Small Cap
Share price	32,0
Total shares, million	22,1
Market Cap, MSEK	705,8

Management & board	
CEO	Jörgen Drejer
CFO	Thomas Feldthus
IR	
Chairman	J. Donald DeBethizy

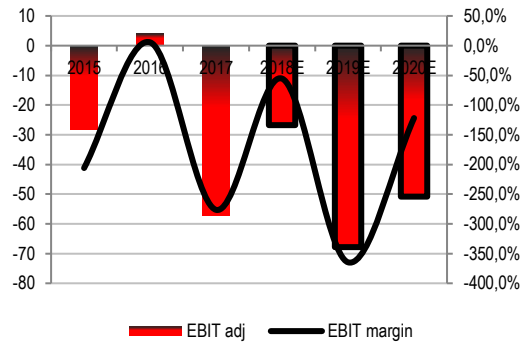
Financial information	
Q2 report	August 22, 2018
Q3 report	November 14, 2018
FY 2018 Results	February 21, 2019

Analysts	Redeye AB
Anders Hedlund	Mäster Samuelsgatan 42, 10tr
anders.hedlund@redeye.se	111 57 Stockholm

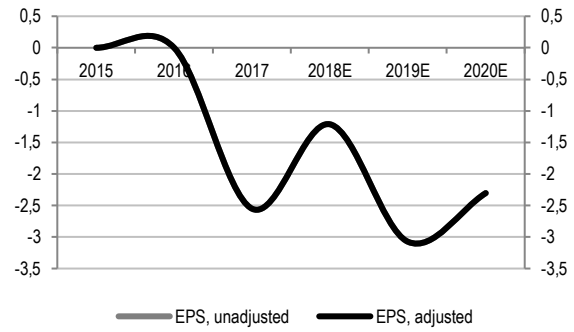
Revenue & Growth (%)



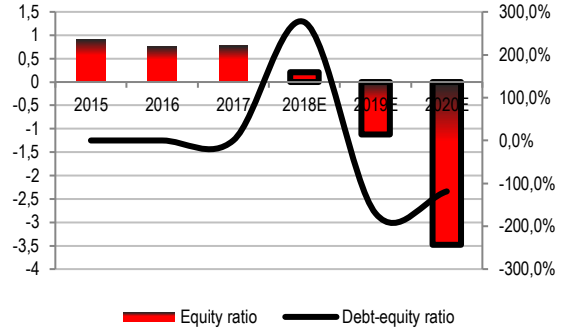
EBIT (adjusted) & Margin (%)



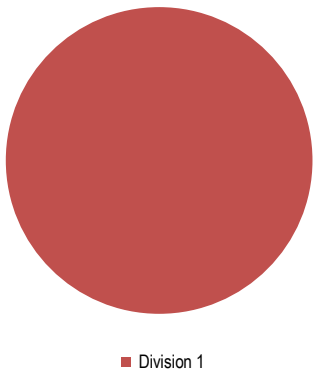
Earnings per share



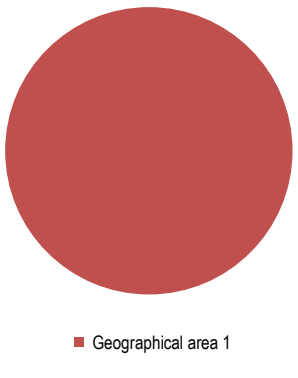
Equity & debt-equity ratio (%)



Sales division



Geographical areas



Conflict of interests

Anders Hedlund owns shares in the company Saniona : No

Redeye performs/have performed services for the Company and receives/have received compensation from the Company in connection with this.

Company description

Saniona is a drug research and development company based in Copenhagen. The company target diseases in the area of Central Nervous System (CNS), metabolic diseases, autoimmune diseases, and treatment of pain. The research platform is focused on ion channels which controls the passage of charged ions across cell membranes. The company was founded in 2011 and has 24 employees. Saniona has been listed since 2014, and is since 2017 listed on the main market of OMX Nasdaq Stockholm (List: Small Cap).

DISCLAIMER

Important information

Redeye AB ("Redeye" or "the Company") is a specialist financial advisory boutique that focuses on small and mid-cap growth companies in the Nordic region. We focus on the technology and life science sectors. We provide services within Corporate Broking, Corporate Finance, equity research and investor relations. Our strengths are our award-winning research department, experienced advisers, a unique investor network, and the powerful distribution channel redeye.se. Redeye was founded in 1999 and since 2007 has been subject to the supervision of the Swedish Financial Supervisory Authority.

Redeye is licensed to; receive and transmit orders in financial instruments, provide investment advice to clients regarding financial instruments, prepare and disseminate financial analyses/recommendations for trading in financial instruments, execute orders in financial instruments on behalf of clients, place financial instruments without position taking, provide corporate advice and services within mergers and acquisition, provide services in conjunction with the provision of guarantees regarding financial instruments and to operate as a Certified Advisory business (ancillary authorization).

Limitation of liability

This document was prepared for information purposes for general distribution and is not intended to be advisory. The information contained in this analysis is based on sources deemed reliable by Redeye. However, Redeye cannot guarantee the accuracy of the information. The forward-looking information in the analysis is based on subjective assessments about the future, which constitutes a factor of uncertainty. Redeye cannot guarantee that forecasts and forward-looking statements will materialize. Investors shall conduct all investment decisions independently. This analysis is intended to be one of a number of tools that can be used in making an investment decision. All investors are therefore encouraged to supplement this information with additional relevant data and to consult a financial advisor prior to an investment decision. Accordingly, Redeye accepts no liability for any loss or damage resulting from the use of this analysis.

Potential conflict of interest

Redeye's research department is regulated by operational and administrative rules established to avoid conflicts of interest and to ensure the objectivity and independence of its analysts. The following applies:

- For companies that are the subject of Redeye's research analysis, the applicable rules include those established by the Swedish Financial Supervisory Authority pertaining to investment recommendations and the handling of conflicts of interest. Furthermore, Redeye employees are not allowed to trade in financial instruments of the company in question, effective from 30 days before its covered company comes with financial reports, such as quarterly reports, year-end reports, or the like, to the date Redeye publishes its analysis plus two trading days after this date.
- An analyst may not engage in corporate finance transactions without the express approval of management, and may not receive any remuneration directly linked to such transactions.
- Redeye may carry out an analysis upon commission or in exchange for payment from the company that is the subject of the analysis, or from an underwriting institution in conjunction with a merger and acquisition (M&A) deal, new share issue or a public listing. Readers of these reports should assume that Redeye may have received or will receive remuneration from the company/companies cited in the report for the performance of financial advisory services. Such remuneration is of a predetermined amount and is not dependent on the content of the analysis.

Redeye's research coverage

Redeye's research analyses consist of case-based analyses, which imply that the frequency of the analytical reports may vary over time. Unless otherwise expressly stated in the report, the analysis is updated when considered necessary by the research department, for example in the event of significant changes in market conditions or events related to the issuer/the financial instrument.

Recommendation structure

Redeye does not issue any investment recommendations for fundamental analysis. However, Redeye has developed a proprietary analysis and rating model, Redeye Rating, in which each company is analyzed and evaluated. This analysis aims to provide an independent assessment of the company in question, its opportunities, risks, etc. The purpose is to provide an objective and professional set of data for owners and investors to use in their decision-making.

Redeye Rating (2018-06-03)

Rating	Management	Ownership	Profit outlook	Profitability	Financial Strength
7,5p - 10,0p	45	44	17	10	20
3,5p - 7,0p	77	69	106	35	47
0,0p - 3,0p	15	24	14	92	70
Company N	137	137	137	137	137

Duplication and distribution

This document may not be duplicated, reproduced or copied for purposes other than personal use. The document may not be distributed to physical or legal entities that are citizens of or domiciled in any country in which such distribution is prohibited according to applicable laws or other regulations.