Lipum

Sector: Biotech

Financed and ready to go

Redeye provides a research update following Lipum's clinical progress, recent rights issue, and revised development plan for SOL-116. As the candidate demonstrated promising results from the first interim readout of the ongoing phase I study, we increase our LoA to 15% (11%). Furthermore, we include the proceeds (and dilution) from the recent rights issue and model in-house implementation of the upcoming phase II trial. Accordingly, we adjust our valuation of Lipum with a revised base case of SEK15 (20).

Promising phase I data – Raised LoA

SOL-116 is currently being evaluated in a phase I clinical study divided into three parts. At the beginning of 2024, Lipum announced interim results from the first part (SAD) of the phase I study. The findings suggest that SOL-116 is well-tolerated, with minimal to no severe side effects observed across five dosage levels. Furthermore, the candidate showcased strong immunogenicity and pharmacokinetics. Accordingly, we raise our likelihood of approval (LoA) of the candidate to 15% (11%).

Financed to increase value

Lipum has now announced the outcome of its recent rights issue. The company bolsters its cash position with gross proceeds of almost SEK80m. The main reason behind the decision of a capital raise was to finance in-house development of the upcoming phase II studies, set to commence in Q4 2025. Should the candidate manage to deliver encouraging data in the phase II trials, we argue that it will substantially increase its value and attract interest from Big Pharma. Accordingly, we model a USD 250m licensing deal in 2027.

Revised base case of SEK15 per share

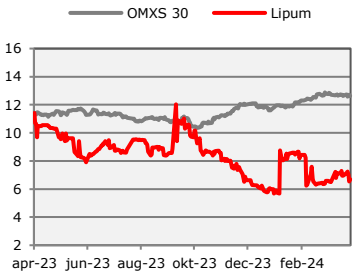
We base our valuation of Lipum on a DCF model of its current pipeline. Following the recent rights issue and clinical progress, we update our valuation model. Accordingly, we adjust our fair value range with a revised base case of SEK15 (20) per share, with respective bull and bear cases of SEK25 (32) and SEK3 (5). This suggests an upside potential of more than 100% from current share price levels. With interim- and final data from the ongoing phase I trials in the horizon, we see multiple inflection points ahead that could close our valuation gap.

Key Financials (SEKm)	2022	2023	2024e	2025e	2026e
Net Sales	0	0	0	0	0
Revenue growth	N/A	N/A	N/A	N/A	N/A
EBITDA	-38	-37	-41	-46	-46
EBIT	-38	-37	-41	-46	-46
EBIT Margin (%)	neg	neg	neg	neg	neg
Net Income	-38	-37	-41	-46	-46

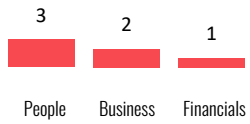
FAIR VALUE RANGE

BEAR	BASE	BULL
3 (5)	**15 (20)**	25 (32)

LIPUM VERSUS OMXS30 LTM



REDEYE RATING



KEY STATS

Ticker	LIPUM
Market	First North
Share Price (SEK)	6.5
Market Cap (SEKm)	61
Net Debt (SEKm)	45
Free Float (%)	60
Avg. daily volume	44.7k

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Investment Case

Case: Potential to satisfy market need

Lipum has its sight set for the multibillion-dollar rheumatoid arthritis (RA) market with the aim of providing a new first-in-class treatment to a population in need of a paradigm shift. RA continues to be one of the largest pharmaceutical markets globally, yet, despite the vast number of approved drugs, the medical need remains high as no drug has been able to achieve disease-free remission. The demand for cost-effective and safe treatments is glaring as current standard of care entail multiple side-effects and lack efficacy in a significant part of the patient population.

However, we believe that Lipum's lead candidate, SOL-116, has the potential to eradicate this discrepancy and offer a resolution-based therapy. The candidate has a unique mechanism of action (MOA), targeting the previously-overlooked BSSL protein, suggested to play a central role in inflammation and inflammatory response. Should SOL-116 prove a good safety profile and repeat signs of its efficacy shown in preclinical studies, in the ongoing and upcoming clinical trials, we believe that it is well-positioned to attract interest from the public and catch the eye of large industry players.

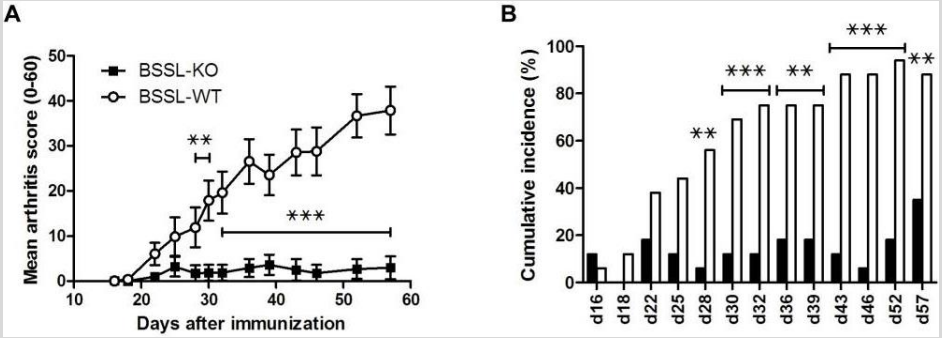
Evidence: Establishing a platform to broaden pipeline

Lipum is simultaneously establishing a platform of preclinical data on the therapeutic effect of SOL-116 in several other diseases and targets of interest. This could potentially lead to the discovery of further possible indications where the candidate could be developed as a novel treatment. The list of viable chronic inflammatory diseases and proinflammatory conditions can be made very long given the candidate's believed potential in both autoimmune and autoinflammatory illness. The company continually evaluates the indications and carries out selections for in-depth preclinical studies based on medical need, market potential and conditions for validating SOL-116 through suitable models.

Supportive analysis: Promising preclinical evidence

Preclinical studies performed by founders Prof. Olle Hernell, prof. Lennart Lundberg and prof. Susanne Lindqvist demonstrated strong support of BSSL being a key player in the inflammatory process and disease development of arthritis. The researchers used a Collagen-induced arthritis (CIA) model in rodents – a commonly used experimental model to reproduce the pathogenic features of human RA – to compare the response in BSSL wild type (BSSL-WT) mice with BSSL-deficient 'knock-out' (BSSL-KO) mice. In two consecutive trials, they found that BSSL-KO mice were significantly protected from developing arthritis, suggesting a direct correlation between BSSL levels and disease development.

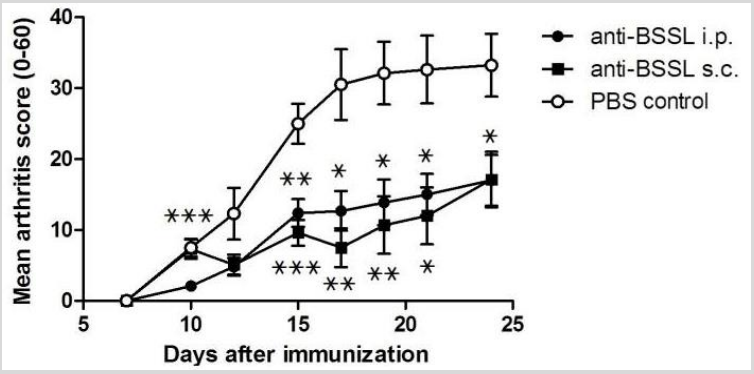
Disease development of arthritis in BSSL-KO mice



Source: Lindqvist, S. et al. (2012)

Moreover, they also found that injection with BSSL-neutralizing antibodies (similar to SOL-116) reduced both the incidence and severity of arthritis in rodents.

Disease development of arthritis in BSSL-KO mice



Source: Lindqvist, S. et al. (2012)

Challenge I: Unproven target

SOL-116 targets the BSSL protein, which is an unproven target in previous biopharmaceuticals. While showing great promise in preclinical models, there is no guarantee that the enzyme is an effective target in humans as well. However, the fact that SOL-116 is developed as a monoclonal antibody, as are the current biological disease-modifying antirheumatic drugs (TNFα-inhibitors), could prove to be an advantage when it comes to clinical implementation in patients.

Challenge II: Highly competitive market

The market for RA is one of the world's most competitive markets within the pharmaceutical industry – with many drugs approved, or under development, and an established treatment protocol. Should SOL-116 fail to show substantial safety or efficacy benefits over today's established treatments, it may struggle to gain meaningful market share even if it receives marketing authorization.

Valuation: Long-term value potential

Our revised base case fair valuation amounts to SEK15 (20) per share, suggesting more than 100% upside from today's share price levels. Further, our bull and bear Cases equal SEK25 (32) and SEK3 (5) per share, respectively. We argue that the share trades at a discount to its fundamental value and offers an attractive entry point at current levels.

We foresee an exciting 2024 and beyond for Lipum as the first clinical phase I trials with the lead candidate SOL-116 will be concluded. Primarily, we judge that further interim- and top-line data from the phase I study and in-depth preclinical data on further indications could induce positive share price re-ratings.

Counter Points

Early-stage development

The company is in its early-stage development with lead candidate SOL-116, currently in phase I studies. There are always significant risks associated with developing drug candidates, and SOL-116 is no exception. While the candidate offers a unique and promising MOA, failure to show a clinically meaningful effect or robust safety profile in clinical trials would be major setbacks.

Dependent on partners and investors

Lipum being a pre-revenue biotech company in the research and development phase indicates that the company is far from receiving any recurring cash streams. Instead, the company will heavily rely on capital markets to finance its operations for the coming years. With the general risk appetite on the market having been suppressed during the past years, raising capital is a tougher task for the majority of biotech companies. Investors should be aware of this when considering early-stage biotech companies. There is a risk that the company may be squeezed for cash to finance its clinical studies and operations in the future, which could lead to heavily dilutive and rebated rights issues. Further, we judge that Lipum will heavily depend on finding and cooperating with a licensing partner in the future for the late-stage development of SOL-116, and ultimately, to bring it to the market.

One-trick pony characteristics

The company could be seen as a one-trick pony given the high dependency on lead candidate SOL-116. There is certainly a significant risk allocated to the ongoing clinical trials, if the treatment fails to show a good safety profile (and clinically relevant efficacy indicators) in RA patients, the pipeline will have almost no residual value. However, the company's dual development strategy with a parallel track devoted to establishing a platform of several other potential target indications reduces some of the risk.

Key Catalysts

- SOL-116 phase I MAD study data

  Following the initial phase I SAD study, Lipum expects interim data from the phase I Multiple Ascending Dose (MAD) trial in healthy volunteers (HV) in Q2 2024.

  Timeframe: 0-3 months

  Impact: Moderate

- SOL-116 phase I data on RA patients

  Lipum has included an arm of 8 RA patients in the ongoing phase I study. Topline data is expected in Q3 2024 and will include the first clinical data on safety, tolerability, and pharmacokinetics of SOL-116 in RA patient.

  Timeframe: 3-6 months

  Impact: Moderate to major

- SOL-116 phase I complete data

  Complete data from the ongoing first clinical study of SOL-116 will be a major milestone for the company, an analysis of the results is expected in Q4 2024.

  Timeframe: 6-9 months

  Impact: Moderate to major

- Preclinical data on further indications

  Lipum is establishing a platform of preclinical data on the therapeutic effect of SOL-116 in several other diseases and targets. This could potentially lead to the discovery of further possible indications for the candidate.

  Time frame: 9-18 months

  Impact: Moderate

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SOL-116 – Current status

Lipum aims to develop the next-generation inflammatory disease-treatment. The company has developed a biological drug candidate, SOL-116, as a potential treatment of autoimmune and autoinflammatory diseases. After extensive preclinical progress, the humanized antibody is now clinical development with an ongoing phase I study.

Phase I trials

SOL-116 is currently being evaluated in a phase I clinical study that started in October 2022. The study is a double-blind, randomized and placebo-controlled first in human study and is divided into three parts. The initial segment was a single ascending dose (SAD) trial and included 40 healthy participants, each receiving either the antibody or a placebo. At the beginning of 2024, Lipum announced interim results from the first part (SAD) of the phase I study. The interim findings suggest that SOL-116 is well-tolerated, with minimal to no severe side effects observed. This was consistent throughout the (five) different dose levels.

Furthermore, the candidate showcased strong immunogenicity as no subject was found to elicit anti-drug antibodies after treatment. Similarly, pharmacokinetic assessments demonstrate favorable absorption with SOL-116 having a half-life of 20 days.

The study also investigated how SOL-116 interacts with its target protein bile salt-stimulated lipase (BSSL) in subjects. Notably, the initial findings suggests that the antibody reduces the amount of the target protein BSSL in plasma to undetectable levels from day 3 after administration. This effect was maintained until day 90 post treatment. Accordingly, this confirms that SOL-116 is able to interact and bind to the BSSL protein, eliminating freely circulating BSSL in an effective manner. While this was not an efficacy study, we argue that this strengthens the scientific rationale behind SOL-116.

Revised Likelihood of Approval

An essential part of the process of evaluating drug candidates in clinical progress is to assess the probability of success (PoS) for each upcoming phase, as well as the candidate's overall likelihood of approval (LoA). The LoA determines the risk-adjustment percentage used when discounting future cash flows and has an incremental impact on the overall valuation. Defining definite values for the PoS and LoA of biotech companies is tricky and riddled with uncertainty. When assessing a clinical candidate's LoA, our starting point is always in historical success rate data within the field.

SOL-116 – Updated probability of Success and Likelihood of Approval

	Ph I - PH II	Ph II - PH III	Ph III - NDA	NDA - Approval	LoA overall
Autoimmune	60%	32%	66%	93%	11%
SOL-116	80%	32%	66%	93%	15%

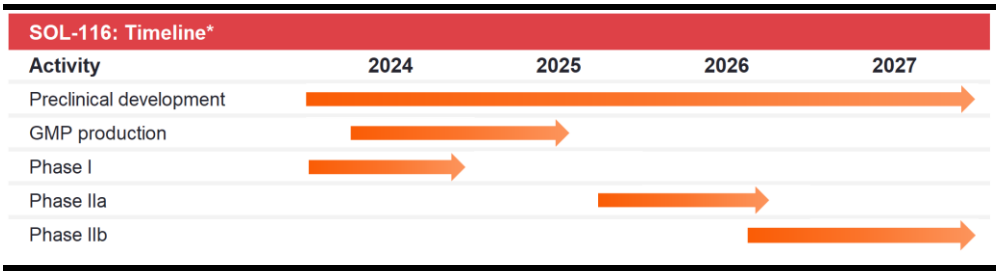
Source: Redeye Research, Informa Pharma Intelligence

Following the clinical progress and the promising findings from the abovementioned interim analysis, we have decided to revise the probability of success (PoS) for phase I development of SOL-116. We have raised our estimated probability from 60% to 80%, accordingly. In turn, this increases the overall likelihood of approval (LoA) of the candidate from 11% to 15%. With the planning for the upcoming phase II trials under full swing, we argue that this more closely represents the candidate's current chances of success.

Upcoming phase II trials

Previously, Lipum had communicated a desire to find a licensing partner for SOL-116 post phase I trials for the mid- and late-stage development of the candidate. However, the main reason behind the decision of performing the recent capital raise was to instead finance an in-house development of phase II studies. While this entails an enlarged cost and financial burden for the company in the short term, conducting phase II studies in-house will also elevate the value of the candidate (given favourable results from the trials).

Lipum – Planned timeline



Source: Lipum, Redeye Research

The upcoming phase II study is scheduled to begin in the fourth quarter of 2025. Work to develop a suitable design for the study is ongoing and discussions with CROs for implementation have begun. Final clinical protocol for the study will be completed when the ongoing phase I study is completed and evaluated. The tentative plan includes a double-blinded and placebo-controlled study divided into two parts, where the first part (phase IIa) aims to identify and select the appropriate dosage for late-stage development and the second part (phase IIb) aims to demonstrate efficacy, i.e., Proof-of-concept (PoC). The overall evaluation and endpoints used in the studies are expected to be based on standardized criteria for similar clinical RA-treatment studies in the same development phase.

We will provide more information and our view of the study design when it is announced and made publicly available.

New collaboration with NorthX Biologics

In relation to the recent rights issue and the announcement of in-house development of phase II studies, Lipum announced that it has entered into a framework agreement and a related project agreement (Master services agreement) with NorthX Biologics. The agreements cover the development and manufacturing of SOL-116 as an investigational drug product intended for use in the upcoming phase II studies. NorthX is a leading Swedish contract development and manufacturing organization (CDMO) that specializes in producing plasmids, proteins, vaccines, and other advanced biological products.

NorthX Biologics - Logo

Source: NorthX Biologics

The initial project agreement within the Master Services Agreement encompasses 9 work packages, covering all currently anticipated tasks from the initiation of development activities to the production and release of the investigational drug product for phase 2 clinical trials with SOL-116, along with subsequent storage and stability testing of the investigational drug product. The collective cost of these 9 work packages under the initial project agreement is approximately SEK52m. Lipum has committed to providing an upfront payment of the aforementioned fee (approximately SEK52m) to NorthX to cover the entire cost of these 9 work packages.

The agreement with NorthX was established after a thorough procurement process where Lipum obtained several different offers from potential European contract manufacturers. Lipum chose to proceed with NorthX as it judges that it will lead to cost and time savings while allowing the company to maintain quality and supply security in the manufacturing process. This also allows for the possibility to move the manufacturing process to Sweden, which reduces the need for long transports and eliminates any risks related to time differences or currency effects. Effectively, this provides a cost effective one-stop-shop for both drug substance and sterile fill finish drug product.

The current cooperation between Lipum and Abzena continues under the current agreement throughout the entire completion of the phase I program (until at least May 2025). Thereafter, the cooperation between Lipum and Abzena will be terminated.

Funding grant from Swelife

In April 2024, Lipum announced that it had been granted funding of SEK2.8m from Swelife for its project related to identifying proteomic biomarkers to predict the course of early RA. The project is a collaboration involving Karolinska Institutet in Stockholm, and Linköping University.

The project aims to define a panel of protein biomarkers to predict arthritis development and disease progression in individuals at risk of RA or with recent-onset disease. Specifically, the project will explore biomarkers linked to BSSL serum levels to predict response to Lipum's SOL-116, potentially leading to the development of a companion diagnostic test to increase SOL-116's chances of reaching the market.

In connection with the announcement, CEO, Ola Sandborgh, expressed his gratitude for Swelife's support, highlighting the importance of this collaboration in identifying proteomic biomarkers to predict the course of early RA.

Swelife - Logo

Source: Swelife

Swelife is a strategic innovation program supported by the Swedish Government and Vinnova to facilitate collaboration between academia, industry, and healthcare in order to strengthen Sweden's life sciences sector and improve public health.

We are encouraged by the grant and will continue to follow the development of the project.

Rights issue – Outcome

Terms and conditions for the rights issue

In February, Lipum announced its intention to carry out a rights issue of up to approximately SEK187m. The issue would comprise of up to 27,944,055 shares at a subscription price of SEK6.70 per share, representing a discount of approximately 21.5% to the previous day's close price (SEK8.54).

Lipum stated that it was supported by the company's larger shareholders as it was covered by subscription undertakings totaling an amount of approximately SEK67m, corresponding to approximately 36 percent of the rights issue. Primarily, specialist investor and largest shareholder Flerie Invest AB, who holds approximately 33 percent of the shares and votes in Lipum, had undertaken to subscribe for its pro rata share of the rights issue. In addition, a number of other existing shareholders, including the Crafoord Foundation, Adam Dahlberg and Christian von Koenigsegg, had also undertaken to subscribe for shares in the issue.

Those who on the record date, 5 April 2024, were registered as shareholders in the share register had preferential right to subscribe for new shares. One (1) existing share in Lipum entitled to three (3) subscription rights, where one (1) subscription right would entitle to subscription for one (1) new share. The subscription period was active during the period 9–23 April 2024.

Outcome of the rights issue

Following the end of the subscription period, Lipum announced on 23 April 2024 that a preliminary subscription breakdown indicates that 11,897,753 shares (corresponding to approximately 42.6% of the rights issue) have been subscribed for in the rights issue. Accordingly, the company is estimated to raise approximately SEK79.7m before deduction of transaction costs.

Based on the information given in the rights issue prospectus, we estimate the issue costs to be in the region of SEK7.5m. Accordingly, we are encouraged by the fact that Lipum will bolster its cash position by some SEK72.5m net proceeds from the rights issue. However, given that approximately 35.7% of the issue was covered by subscription undertakings and secured beforehand, this means that only approximately 6.9% of the remaining 64.3% shares available in the issue were subscribed for. We see this as somewhat disappointing as the proceeds raised will not be enough to cover the costs of the upcoming phase IIa trial.

Planned use of proceeds

While we anticipated the company to carry out a rights issue to resolve its financing needs, we did not expect it to be of such a large size. Previously, Lipum had communicated a desire to find a licensing partner for SOL-116 post phase I trials for the mid- and late-stage development of the candidate. However, the main reason behind the decision of a capital raise of this size is to instead finance an in-house development of phase II studies.

While this entails an enlarged cost and financial burden for the company in the short term, conducting phase II studies in-house will also elevate the value of the candidate (given favourable results from the trials). Furthermore, it is evident that the current landscape within biotech is a tough environment for the potential licensors. With many biotech companies looking to find partner agreements while being pressed for cash, it is undoubtably a buyer's market where the Big Pharma players have the upper hand. Accordingly, we see a clear rationale for advancing SOL-116 into phase II trials in-house at this point in time.

In connection with the original announcement of the rights issue, Lipum stated that it evaluates that the company requires around SEK100m until the onset of the phase IIa study, anticipated to commence by the end of 2025. Additionally, Lipum estimated that to successfully conduct and complete the phase IIa study and begin the phase IIb study, scheduled for the end of 2026, an additional SEK80m will be needed, totaling approximately SEK180m.

In the subsequent rights issue prospectus, Lipum provided additional insight as to how the proceeds from the issue would be used. Specifically, approximately SEK11m will be used for the completion of the ongoing phase I clinical study, of which approximately SEK4m (plus interest) is the repayment of a short-term loan provided by Zonda Partners on 2 April 2024. Furthermore, approximately SEK52.4m will be used for the new production of SOL-116 for clinical phase II studies by making an advance payment to NorthX, according to the framework agreement. Any remaining portion of the proceeds is intended to be used for the following purposes, listed in order of priority:

- Planning and implementation of clinical phase II studies - approximately SEK54m
- Preclinical studies on the mechanism of action (MoA) and treatment of further diseases/indications with SOL-116 - approximately SEK22m
- Financing of Lipum's other operating costs until the end of 2026 - approximately SEK37m

However, due to the shortcoming of the outcome of the rights issue, Lipum currently does not have enough capital to finance these listed activities. Accordingly, in order to, primarily, conduct the phase II studies, we model an additional capital raise in the region of SEK70m in H2 2025.

Flerie Invest mandatory bid

In Mars 2024, Flerie Invest announced that it submits a cash offer to the shareholders and convertible holder in Lipum as the company had surpassed the ownership threshold in Lipum for a mandatory bid. Flerie offered SEK6.60 per share in Lipum (which was not already controlled by Flerie) and SEK2m for the convertible (equivalent to its nominal amount), corresponding to a total bid value of approximately SEK43.8m. Accordingly, the offered consideration represented a discount of approximately 16.24% compared to the previous day's closing price (SEK7.88).

While the offer was inferior to what some investors had expected, it followed a similar pattern to that of Flerie's previous mandatory bids.[1] As such, we expected the offer to be declined by the majority of shareholders in Lipum. Furthermore, Lipum would respond by releasing a statement in which it stated that the board of directors unanimously recommended the shareholders of Lipum do not accept the mandatory cash offer made by Flerie.[2]

In total, 113,892 shares were submitted to the offer, representing approximately 1.22% of the total shares in Lipum. Beyond that, the holder of the convertible also accepted the offer. Accordingly, Flerie thus holds a total of 3,095,445 shares in Lipum, corresponding to approximately 33.23% of the shares and votes in the company.

[1] The company's offers for Xintela and Toleranzia in 2022 represented discounts of approximately 13.4% and 6.8% (compared to previous day's close), respectively. In these cases, what corresponds to approximately 11.3% and 32.3%, respectively, of possible shares (not previously owned by Flerie) were submitted in the offer. Similarly, we did not expect this offer to be accepted by the majority of shareholders in Lipum.

[2] However, the company stated that, according to the independent fairness opinion from Västra Hamnen, the convertible offer, subject to the assumptions stated therein, is considered fair from a financial perspective to the convertible holder.

Sales Model and Assumptions

Given the competitive landscape and established treatment protocols in rheumatism, SOL-116's commercial success hinges on its performance in upcoming clinical trials. Demonstrating superior safety or efficacy compared to current biologics and JAK-inhibitors would be pivotal, given its first-in-class status. Conversely, if SOL-116 only matches or underperforms existing treatments, its estimated late entry in 2031e could limit its market share. Rheumatologists' familiarity with established treatments gives them an advantage over new drugs.

SOL-116 Sales Model

The key assumptions in our SOL-116 RA sales model are:

- Market Launch in 2031e
- Peak market penetration of five percent in the key markets
- Annual pricing of USD18,000, USD12,000, and USD10,000 in the US, EU5 and Japan, respectively.
- Royalty rate of 12 percent
- Deal size of USD250m in 2027e
- 15% percent likelihood of reaching the market

Based on these assumptions, we arrive at annual global peak sales of more than **USD600m** for SOL-116 in RA by 2039e.

SOL-116 Sales Model in RA – US, 5EU & Japan (USDm)

		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
US													
RA prevalence		2 141 606	2 184 438	2 228 127	2 272 689	2 318 143	2 364 506	2 411 796	2 460 032	2 509 233	2 559 417	2 610 606	2 662 818
Moderate/severe RA	75%	1 606 204	1 638 329	1 671 095	1 704 517	1 738 607	1 773 379	1 808 847	1 845 024	1 881 924	1 919 563	1 957 954	1 997 113
Patients on RA treatment	55%	883 412	901 081	919 102	937 484	956 234	975 359	994 866	1 014 763	1 035 058	1 055 760	1 076 875	1 098 412
2nd line patients	60%	530 047	540 648	551 461	562 491	573 740	585 215	596 920	608 858	621 035	633 456	646 125	659 047
Launch curve		0,10	0,25	0,50	0,70	0,90	1,00	1,00	1,00	1,00	0,70	0,40	0,20
Market share	5%	1%	1%	3%	4%	5%	5%	5%	5%	5%	4%	2%	1%
Treated patients		2 650	6 758	13 787	19 687	25 818	29 261	29 846	30 443	31 052	22 171	12 922	6 590
Compliance rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
List price	18 000	18 000	18 000	18 000	18 000	18 000	18 000	18 000	18000	18000	18000	18000	18000
Tax %	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Net price	14 400	14 400	14 400	14 400	14 400	14 400	14 400	14 400	14400	14400	14400	14400	14400
Revenue ($m)		**29**	**73**	**149**	**213**	**279**	**316**	**322**	**329**	**335**	**239**	**140**	**71**
growth		N/A	155%	104%	43%	31%	13%	2%	2%	2%	-29%	-42%	-49%
5EU													
RA prevalence		2 330 431	2 377 039	2 424 580	2 473 071	2 522 533	2 572 984	2 624 443	2 676 932	2 730 471	2 785 080	2 840 782	2 897 597
Moderate/severe RA	75%	1 747 823	1 782 779	1 818 435	1 854 804	1 891 900	1 929 738	1 968 332	2 007 699	2 047 853	2 088 810	2 130 586	2 173 198
Patients on RA treatment	55%	961 303	980 529	1 000 139	1 020 142	1 040 545	1 061 356	1 082 583	1 104 235	1 126 319	1 148 846	1 171 822	1 195 259
2nd line patients	60%	576 782	588 317	600 084	612 085	624 327	636 813	649 550	662 541	675 792	689 307	703 093	717 155
Launch curve		0,10	0,25	0,50	0,70	0,90	1,00	1,00	1,00	1,00	0,70	0,40	0,20
Market share	5%	1%	1%	3%	4%	5%	5%	5%	5%	5%	4%	2%	1%
Treated patients		2 884	7 354	15 002	21 423	28 095	31 841	32 477	33 127	33 790	24 126	14 062	7 172
Compliance rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
List price	12 000	12 000	12 000	12 000	12 000	12 000	12 000	12 000	12000	12000	12000	12000	12000
Tax %	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Net price	9 600	9 600	9 600	9 600	9 600	9 600	9 600	9 600	9600	9600	9600	9600	9600
Revenue ($m)		**21**	**53**	**108**	**154**	**202**	**229**	**234**	**239**	**243**	**174**	**101**	**52**
growth		N/A	155%	104%	43%	31%	13%	2%	2%	2%	-29%	-42%	-49%
Japan													
RA prevalence		776 950	792 489	808 339	824 506	840 996	857 816	874 972	892 471	910 321	928 527	947 098	966 040
Moderate/severe RA	75%	582 712	594 367	606 254	618 379	630 747	643 362	656 229	669 353	682 741	696 395	710 323	724 530
Patients on RA treatment	55,0%	320 492	326 902	333 440	340 109	346 911	353 849	360 926	368 144	375 507	383 017	390 678	398 491
2nd line patients	60%	192 295	196 141	200 064	204 065	208 146	212 309	216 556	220 887	225 304	229 810	234 407	239 095
Launch curve		0,10	0,25	0,50	0,70	0,90	1,00	1,00	1,00	1,00	0,70	0,40	0,20
Market share	5%	1%	1%	3%	4%	5%	5%	5%	5%	5%	4%	2%	1%
Treated patients		961	2 452	5 002	7 142	9 367	10 615	10 828	11 044	11 265	8 043	4 688	2 391
Compliance rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
List price	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10000	10000	10000	10000	10000
Tax %	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Net price	8 000	8 000	8 000	8 000	8 000	8 000	8 000	8 000	8000	8000	8000	8000	8000
Revenue ($m)		**6**	**15**	**30**	**43**	**56**	**64**	**65**	**66**	**68**	**48**	**28**	**14**
growth		N/A	155%	104%	43%	31%	13%	2%	2%	2%	-29%	-42%	-49%

Source: Redeye Research

Valuation

Valuation Summary

In our valuation of Lipum, we estimate the sales potential in its main candidate SOL-116 and assign an associated likelihood of reaching market approval. We then incorporate this into a risk-adjusted discounted cash flow (DCF) valuation model, which provides us with our Base Case. We use a weighted average cost of capital (WACC) of 16%, based on both qualitative and quantitative aspects of the company using our Redeye Company Quality model.

Lipum – Valuation

Valuation summary (SEKm) - Base case						
Program	Indication	Stage	Launch	Peak sales ($m)	Probability (LoA)	Value, r-adj (SEKm)
SOL-116	RA	Phase I	2031	646	15%	402
				Tech Value (SEKm)		**402**
				Est. net cash		70,8
				Shared costs		-72,5
				Equity Value		**400**
				Shares outstanding (2024)		21,2
				Est. Capital raised from issue (2025)		66,5
				Est. Increase in shares from issue		10,4
WACC: 16%				**Base case**		**15**

Source: Redeye Research

** Numbers may not add up due to rounding.*

Summary of changes to our valuation

- We include the outcome of the recent rights issue, adjusting net cash and shares outstanding.
- We raise the PoS of the phase I development of SOL-116 and, by extension, the overall LoA.
- We factor in in-house development of phase II studies with SOL-116.
- We adjust the estimated deal size and potential market launch year of SOL-116.
- We include a grant of SEK2.8m from Swelife.
- We include an additional rights issue in 2025e.

Bear Case 3 SEK (5)

We factor in disappointing results from the remaining SOL-116 phase I trials and see limited prospects in the rheumatism indications. The company's cash position and the candidate's potential in other chronic inflammatory indications constitutes the company's remaining value.

Base Case 15 SEK (20)

The DCF model above represents our Base Case scenario.

Bull Case 25 SEK (32)

We factor in positive phase I final results and subsequent phase IIa data for SOL-116 that strongly support further development of the candidate. Consequently, Lipum finds a partner and commits on a licensing agreement for the late-stage development and commercialization of the candidate in RA.

Sensitivity Analysis

Our valuation of Lipum is highly affected by the WACC that we attribute to the company. WACC plays an essential part in calculating the discounted cash flow and reflects the uncertainties related to the company and the market. We illustrate the impact of applying changes to the WACC on our fair value range (Base Case, Bull Case, and Bear Case) valuation in a sensitivity analysis below.

Lipum: Sensitivity Analysis

Sensitivity analysis: WACC						
		14%	15%	16%	17%	18%
Value (SEK/share)	Bull	30,0	27,4	25	22,8	20,7
	Base	18,0	16,5	15	13,7	12,4
	Bear	3,6	3,3	3	2,7	2,5

Source: Redeye Research

Peer Valuation

To provide additional insight into the current valuation of similar biotech companies, we include a peer group analysis. The valuation of listed biotech companies in clinical development varies considerably, depending on project validation, potential, financial position, risk, etc. However, we base our relative valuation on the enterprise value (EV) (market cap minus net cash) of what we consider to be comparable drug development companies. Below we present a sample of Nordic peers.

Lipum: Peer Valuation

Peer Group Valuation					
(SEKm)	Market Cap	Cash*	EV	No. Projects	Dev. Stage
Company					
SynAct	254	62	192	2	Phase II
Active Biotech	199	36	163	3	Phase II
Coegin Pharma	59	6	53	2	Phase II
Alzecure	124	29	95	3	Phase I
Modus Therapeutics	36	19	17	1	Phase II
Cyxone	20	18	2	2	Phase II
InDex Pharmaceuticals	185	180	5	1	Phase III
Lipigon	47	32	15	4	Phase II
Average	115	48	68	2	Phase II
Median	91	31	61	2	Phase II
Lipum	140	71	69	1	Phase I

Source: Redeye Research
**Based on the latest reports and Redeye estimates.*

Our peer valuation has no impact on our fair value range. It is instead a snapshot of comparable companies. However, based on the companies listed in the table, Lipum's valuation is currently in line with its peers. The average market cap (SEK115m) is below the current market cap of Lipum (SEK140m). However, the average EV of the listed peers (SEK68m) is very much in line with the EV of Lipum (SEK69m). Although, it is worth noticing that the peer median number of projects in the pipeline is two and the median current development stage (for lead candidate) is phase II, while Lipum currently only has one project entering phase I development.

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General summary

Company description

Lipum AB is a research and development-stage biopharmaceutical company specialized in the discovery and development of a novel treatment for chronic inflammatory diseases. The company was originally founded based on a discovery made by scientists at Umeå University. Co-founder and Board member Prof. Olle Hernell and his team discovered that a protein now known as bile salt-stimulated lipase (BSSL) is present in human white blood cells and plays an important role in inflammation. This novel and unexpected finding led to the development of Lipum's lead candidate drug SOL-116. The candidate is a fully humanized monoclonal antibody currently in development to become a safe and efficacious alternative to current therapy in, primarily, rheumatoid arthritis (RA). The treatment has a new and unique mechanism of action, operating through the blockage of the previously overlooked target molecule of the immune system.

Lipum was founded in 2010 in Umeå, Sweden, where it has its current headquarters. Since April 2021, the company has been listed on Nasdaq First North Growth Market (LIPUM).

Medical Need and Project Description

SOL-116: A BSSL-targeting Antibody

Background

The theoretical and academical origin of SOL-116 stems from extensive research at the unit for pediatrics at Umeå University, conducted by Professor Olle Hernell, Associate Professor Susanne Lindqvist and Professor Lennart Lundberg, who would later become founders of Lipum. Their research on fat-splitting enzyme in breast milk led to the discovery of the enzyme Bile Salt-Stimulated Lipase (BSSL) and its significance for the breastfed baby's digestion of breast milk fat.

However, It turned out that BSSL is not only found in breast milk but also in the blood. When the researchers searched for the source of the protein's presence in the bloodstream, it was possible to note greatly elevated levels of BSSL in inflamed organs. Most prominently, there was on average a ten-fold increase of BSSL in the liver of patients with fatty liver, which is an inflammatory condition, in comparison to other subjects. Namely, these findings gave birth to the idea of BSSL potentially being an attractive drug target to control inflammation.

Inflammation is, in fact, a natural part of the body's healing processes. However, chronic inflammation occurs when the body is unable to heal the acute inflammation. Instead, it lingers and leaves the body in a constant inflammatory state. This is a significant problem in patients with both autoimmune and autoinflammatory diseases.[3]

While the drug candidate is considered to have the potential to treat several chronic inflammatory diseases, Lipum has chosen rheumatism in adults (rheumatoid arthritis) as its current main target indication for SOL-116. The disease is characterized by a great unmet medical need and a large market.

[3] It also occurs in, for example, cancer, obesity, and diabetes.

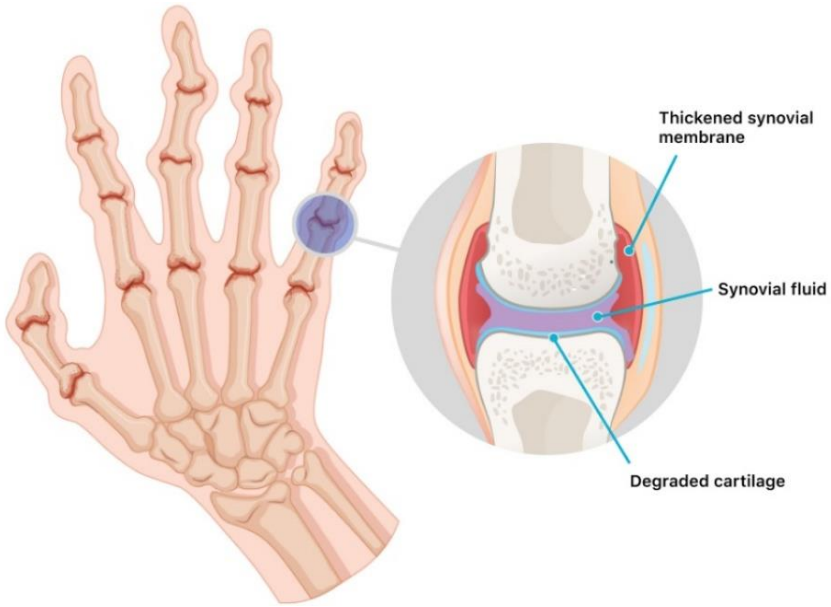
Disease Overview: Rheumatoid Arthritis

Rheumatoid arthritis (RA) is a chronic inflammatory disease that causes pain, swelling and stiffness in the joints. The condition most commonly affects the hands, feet and wrists of patients suffering from the disease and leads to reduced quality of life and increased mortality.

Typical symptoms include:

- Persistent joint stiffness, pain and swelling
- Symmetrical symptoms affecting multiple joints bilaterally
- Severe deformation of joints
- Loss of muscle strength around inflammation
- General feelings of being ill and tired

How Rheumatoid Arthritis Affects Joints

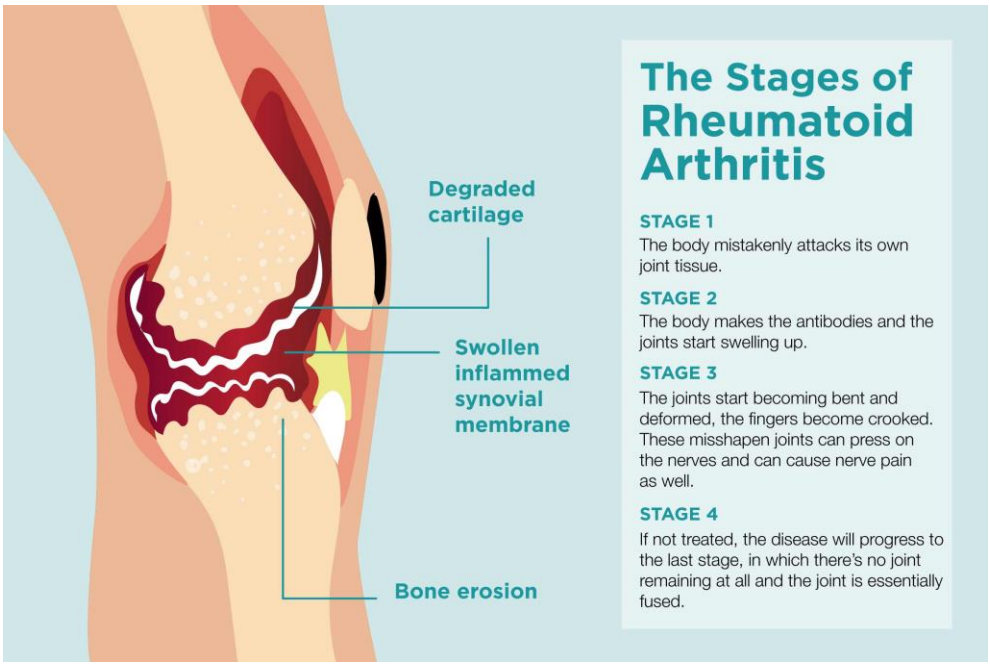


Source: Drugwatch

RA is an autoimmune disease, meaning that the immune system, which normally guards against germs like bacteria and viruses, mistakenly attacks the patient's own body. Normally, the immune system can tell the difference between foreign cells and the body's own cells. However, in autoimmune diseases, the immune system mistakes parts of the body as foreign and releases proteins called autoantibodies that attack healthy cells. In RA specifically, the immune system attacks the lining of the membranes that surround the joints (synovium tissue), leading to inflammation. Over time, the cartilage and bone within the joint are destroyed and the joints lose shape and alignment.

Furthermore, RA is a systemic disease, which means that it can affect the whole body. It can attack organs, such as the heart, the lungs, or other tissues like muscles, cartilage, and ligaments. The damage caused by the disease can be severe and, in some instances, lead to permanent disability. A study by Holmqvist, M.E. et al. (2010) found that the risk of heart attack for people with RA was 60 percent higher just one year after being diagnosed with RA. However, it was also found that therapies used to treat RA, by suppressing inflammation, may also reduce the risk of developing heart diseases.

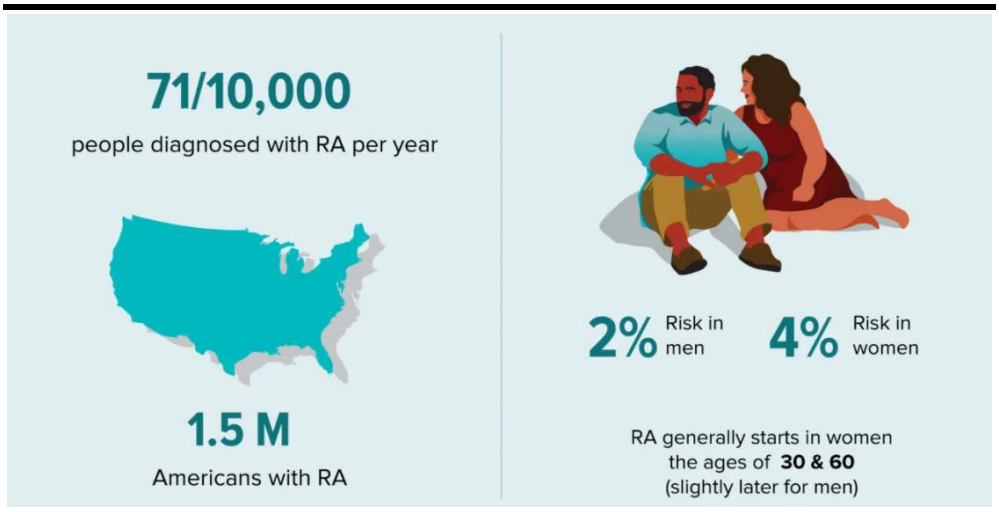
Rheumatoid Arthritis – Disease Development



Source: CreakyJoints

According to Healthline, 71 out of every 100,000 people are on average diagnosed with RA annually. This equates to approximately 235,000 new cases in the US and more than 530,000 in Europe each year. In total, 1.5 million Americans and 3.5 million Europeans are estimated to have RA today.

Rheumatoid Arthritis – Epidemiology



Source: Healthline

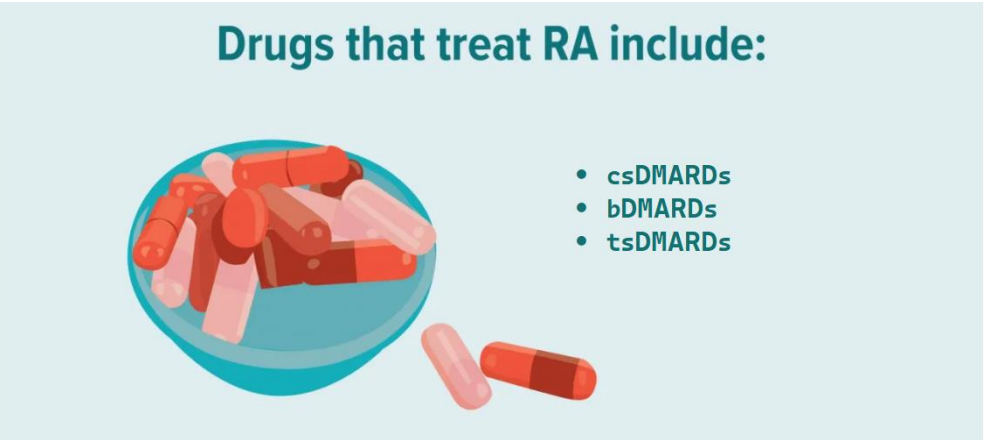
The risk of developing RA is genetically connected. Women are about two to three times more likely to get RA than men and people with close relatives who have suffered from RA are at an increased risk of developing the disease. Research suggests that those born with specific genes called human leukocyte antigen (HLA) class II genotypes are more likely to develop RA. In addition, having these genes can also make the experienced symptoms worse. Further, in people who are obese or who smoke, the risk for RA is also greatly increased.

Current Treatment Paradigm of RA

1st line Treatment – Synthetic DMARDs

There is currently no cure for RA. Early diagnosis and appropriate treatment enables some people with the condition to relieve parts of the symptoms. Today, methotrexate (MTX), a conventional synthetic disease-modifying anti-rheumatic drug (csDMARDs), is used as first-line treatment for most RA patients. MTX is an immune-system suppressant that reduces joint inflammation and slows the course of the disease. It has a relatively fast response and is considered to have decent efficacy and safety profile. Furthermore, it is convenient to administer and comes with a relatively low price tag. However, roughly 60 percent of patients have an inadequate response to MTX monotherapy and have to move on to more costly biologics and/or corticosteroids.

Current Treatments for Rheumatic Disorders



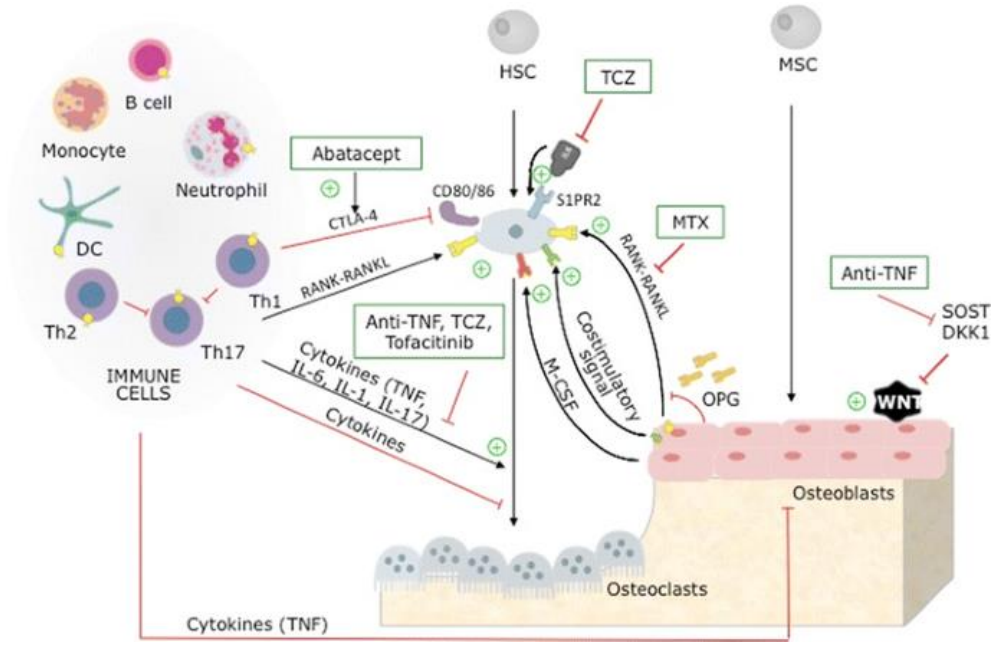
Source: Redeye Research, Healthline

2nd Line Treatment – Biologic DMARDs

Biological disease-modifying antirheumatic drugs (bDMARDs) are typically second-in-line treatments, used either as an alternative or an addition to MTX monotherapy. Biologics are produced through biological processes in living cells, or from biological material, and are usually large and complex molecules whose properties differ significantly from small synthetic drugs. Biologics are most commonly monoclonal antibodies (mAb), which are characterized by an ability to, very specifically, bind to a target molecule in the body and thereby canceling or slowing down an unwanted disease process. SOL-116 places in this treatment category, being developed as an alternative biological drug to current standard bDMARDs.

Tumor necrosis factor (TNF) alpha inhibitors, typically monoclonal antibodies, are the most established class of bDMARDs – with the blockbuster drugs AbbVie's Humira (adalimumab), Pfizer's Enbrel (etanercept), and Merck's Remicade (infliximab) as the most established choices in the key markets. While costly, TNF-α inhibitors have shown high efficiency in combination with DMARDs and have positive long-term safety data, putting them in a strong standing that may be difficult to shake. In the coming years, however, biosimilars are expected to take a larger share of this category following patent expires.

bDMARDs – Mechanism of Action



Source: S. Carvalho Barreira & J. Eurico Fonseca (2016).

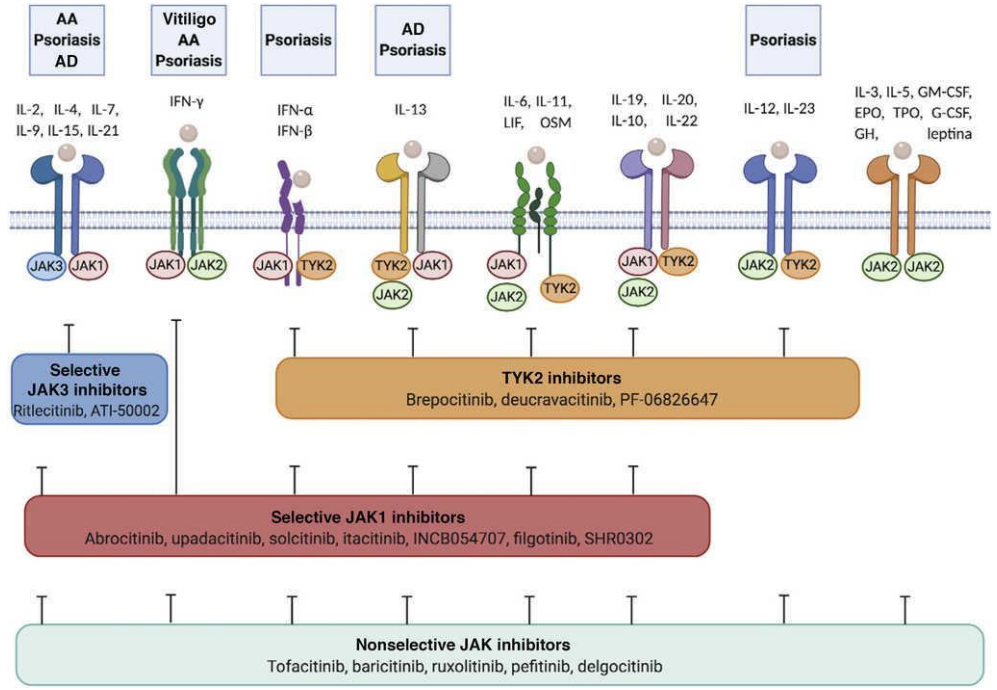
Moreover, a significant proportion of RA patients do not respond to TNF-α inhibitors or respond only temporarily. These can be classified into two groups of patients: those who are primary non-responders and those who initially respond but then exhibit secondary loss of response. Primary non-responders may or may not show some initial response, but never reach their treatment target with anti-TNFs. If these patients do not respond to one anti-TNF therapy, they are not likely to respond to other TNF-α inhibitors. Avoiding anti-TNF therapy could prevent disease progression and improve quality of life for primary non-responders, suggesting that they should switch to an alternative MOA therapy (K, Johnson. et al., 2019). Accordingly, we believe that there is a great unmet need for alternative biological treatment for non-responders. SOL-116 could potentially fill this gap in the market due to its unique MOA, differentiating it from currently marketed biologics.

3rd Line Treatment – Targeted Synthetic DMARDs (JAK-inhibitors)

Janus kinase (JAK) Inhibitors are a relatively new group of drugs for the treatment of chronic inflammatory diseases and are a part of the targeted synthetic disease-modifying antirheumatic drugs (tsDMARDs). Since certain proinflammatory cytokines use the JAK-pathway for signal transduction, it has become an increasingly popular therapeutic target in diseases where selective modulation of the immune system can be useful. JAK-inhibitors work by inhibiting the kinase activity of JAKs, effectively blocking certain cytokine receptor signaling dependent on specific JAK-pathways.

The treatment is today used in either second- or, most commonly, third-line therapy as an alternative to patients not responding to csDMARDs or bDMARDs. The most prominent currently marketed JAK-inhibitors are Pfizer's Xeljanz (tofacitinib), which was the first FDA approved treatment in the drug class in 2012, Eli Lilly's Olumiant (baricitinib) and AbbVie's Rinvoq (upadacitinib). First-generation JAK-inhibitors, such as Xeljanz and Olumiant, are generally poorly selective and inhibit various JAKs, whereas the second-generation inhibitors, such as Rinvoq, are more selective and predominantly block a single member of the JAK family, thus inhibiting a narrower range of cytokines.

Selectivity of Different Types of JAK-inhibitors



Source: C. Garcia-Melando, X. Cubiró & L. Puig (2021).

After the launches, however, it has been shown that JAK-inhibitors are associated with significant side effects that endanger patient safety. This ultimately caused the FDA to update its safety warnings for the entire drug class in September 2021. The revision was mainly based on a review of a large clinical post-approval study that showed an increased risk of serious heart-related events such as heart attack or stroke, cancer, blood clots, and death with Xeljanz and Xeljanz XR. Notably, the FDA decided that the labels for *all* JAK-inhibitors should be updated with so-called "black box warnings" to alert doctors and patients to its potential side effects. Olumiant and Rinvoq have not been studied in similar trials, however, since they share mechanisms of action with Xeljanz, FDA considers that these medicines may have similar risks as seen in the Xeljanz safety trial.

As a result, nearly half (49 percent) of rheumatologists have reduced their prescriptions for Xeljanz in the past three months, according to Spherix Global Insight's first quarter report for 2022. We believe that this is a trend that is likely to continue as an increasing number of patients and rheumatologists refrain from using JAK-inhibitors following the safety concerns. Consequently, this will further induce the unmet medical need and create a vacancy to be filled by potential future treatments, such as SOL-116.

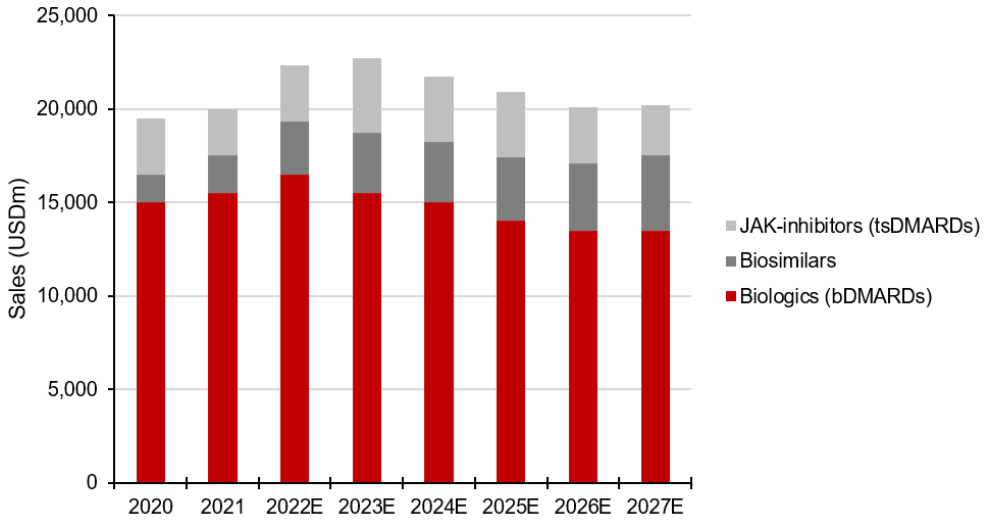
The Market for RA Treatment

RA is one of the world's highest valued drug indication. According to Datamonitor, The RA market in the US, Japan and EU5 was worth about USD 20bn in 2021. Yet development in the RA treatment market has been relatively stagnant in recent years, with only minor changes in the prescribing habits of doctors and a lack of market launches. However, one of the key drivers for the market over the last decade has been the introduction of biologics (bDMARDs). While biologics are second-in-line, they account for the majority of total revenue due to their premium pricing. Among them, Enbrel and Humira are estimated to maintain almost half of the market value alone.

Over recent years, JAK-inhibitors have gained traction in the medical community due to their convenient oral dose formulation. Appetite among payers to reimburse JAK-inhibitors has been quite low, however, as their safety profile has been highly questioned and they are generally more expensive than the widely used TNF-α inhibitors. Consequently, JAK-inhibitors are primarily used for patients who have failed with biologics.

As a whole, the RA market is not expected to showcase any significant growth over the coming years. Historically, growth has primarily been attributed to annual price increases and rising disease prevalence due to an ageing population. However, the increasing introductions of biosimilars (generics for biological drugs) is expected to put downward pressure on prices, which could lead to attrition in the of sales biologics. Accordingly, biosimilars are estimated to grab increasing market shares over the next few years as annual revenue from biologics faces a stagnation in the coming period.

Rheumatoid Arthritis Market 2020-2027, EU5, US and Japan (USDm)

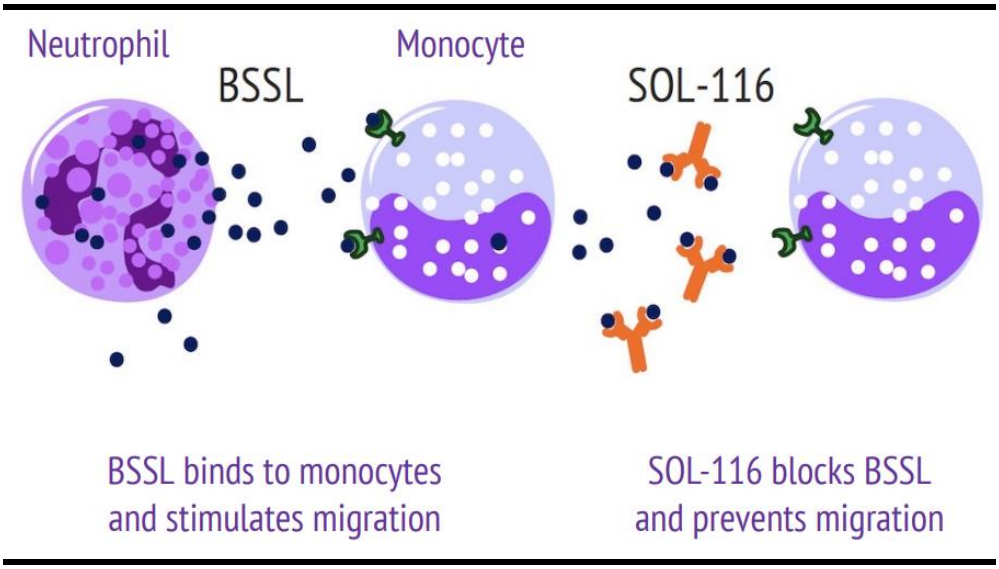


Source: Datamonitor, Redeye Research

SOL-116: Scientific Evidence and Mechanism of action

The significance of the BSSL protein in inflammation has been verified in four different and well-established animal models for arthritis. The work has further led to an explanatory model of the mechanism of action where an important step is that BSSL is secreted from a type of white blood cells (granulocytes) and bind to another (monocytes), which in turn are active in inflammation. It is proposed that BSSL can bind to the CXC motif chemokine receptor type 4 (CXCR4) and thus triggers the signaling pathway leading to migration and recruitment of inflammatory cells to the site of acute inflammation. While this initially may play a positive roll, when the inflammation is no longer controlled and becomes "chronic", BSSL is likely to sustain the inflammatory response and hence become a negative factor. As a result of this, BSSL has emerged as a highly interesting target for the treatment of inflammatory disease. The idea of being able to prevent and restrain these diseases by blocking the protein is the foundation of the anti-BSSL antibody.

SOL-116: Mechanism of Action

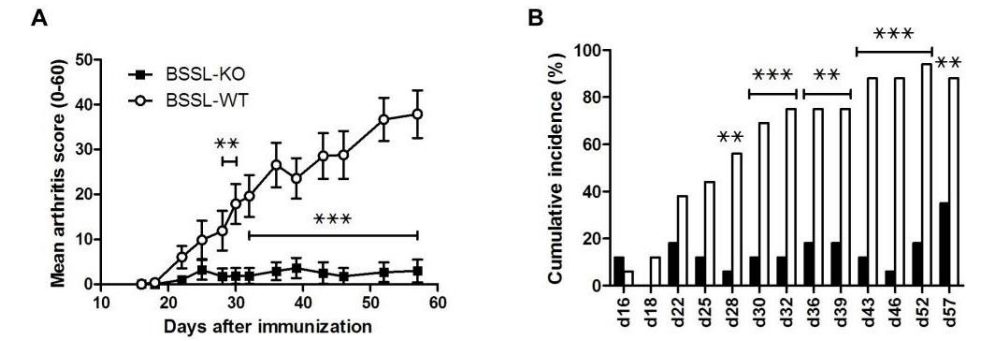


Source: Lipum

Preclinical Evidence

Preclinical studies performed by founders prof. Olle Hernell, prof. Lennart Lundberg and assoc. prof. Susanne Lindqvist demonstrated strong support of BSSL being a key player in the inflammatory process and disease development of arthritis. The researchers used a Collagen-induced arthritis (CIA) model in rodents – a commonly used experimental model to reproduce the pathogenic features of human RA – to compare the response in BSSL wild type (BSSL-WT) mice with conventional BSSL 'knock-out' (BSSL-KO) mice. In two consecutive trials, they found that BSSL-KO mice were significantly protected from developing arthritis, suggesting a direct correlation between BSSL levels and disease development.

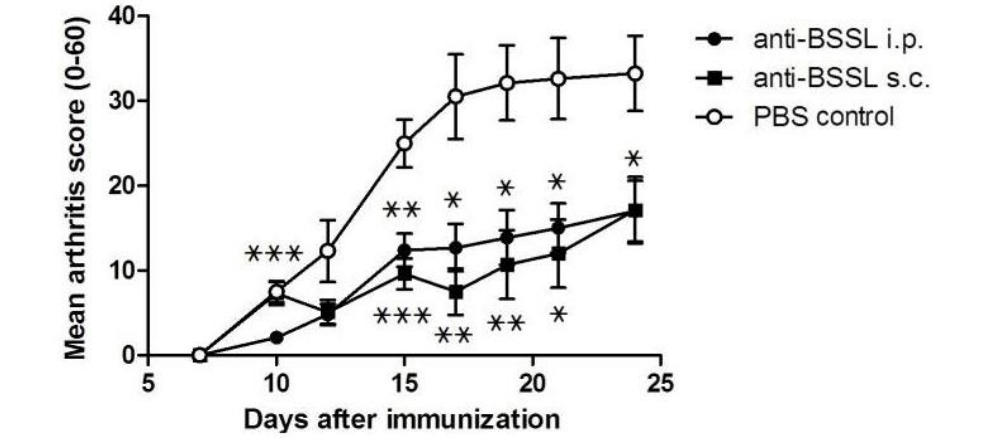
Disease development of arthritis in BSSL-KO mice



Source: Lindqvist, S. et al. (2012)

Moreover, they also found that injection with rabbit polyclonal anti-BSSL antibodies reduced both the incidence and severity of arthritis in rodents. In one of the trials, thirty male DA rats (age 8–10 weeks) were randomized into three groups (n = 10 per group) for treatment. The rats were given a single injection of pristane, known to induce arthritis within two weeks. BSSL-neutralizing antibodies (5 mg/kg) were then given through either intraperitoneal- or subcutaneous injection on days 5, 10, and 15 after pristane immunization, and the effect was compared to a placebo control. Blinded clinical scoring confirmed that treatment with anti-BSSL antibody significantly reduced disease severity as compared to PBS control. Treated animals also showed a marked decrease in the number of inflammatory cells present in the joint synovium and less cartilage destruction.

Disease development of arthritis in BSSL-KO mice



Source: Lindqvist, S. et al. (2012)

Commercialization and Marketing

Business strategy and Organization

Lipum focuses on differentiating itself from competitors and staying competitive in the long run through superior functionality and operational excellence. The company intends to, in parallel with the development work to reach its clinical milestones, follow up previous results on other diseases and carry out in-depth studies on further selected indications. The objective is to increase knowledge of the mechanism of action and reach clinical development as quickly as possible in potential indications. This way, Lipum intends to create a unique platform which will be the key driver for continued development and growth.

Given the resources, organizational structure and competence required to run late-stage development, the company has stated that it intends to look for licensing agreements with a pharmaceutical partner in connection with phase II trials. Thus, future potential revenue is primarily expected to come in the form of upfront payments, development- and sales-based milestone payments and royalties on subsequent profits. The company intends to use the strengthened finances from a potential licensing deal to further develop its preclinical platform.

If it proves difficult to establish any fruitful partnership collaboration, Lipum has stated that it may choose to continue the clinical development plan independently. The focus would then primarily be RA.

Furthermore, Lipum puts emphasis on building important competitive advantages in the form of intangible assets. The company has made major investments to take advantage of opportunities for intellectual property protection. Specifically, in 2020, a very comprehensive international PCT patent application was filed concerning SOL-116 and therapeutic antibodies directed against the target molecule BSSL. This patent is expected to extend current protection with an additional 10 years, from ending in year 2030 to 2040. Intangible protection is important, especially for biotech companies, although biological drugs are generally relatively difficult to replicate compared to small chemical entities.

Similar to many other biotech companies alike, Lipum's organizational structure is quite lean without excessive departments or personnel. The company only employs key members of staff and outsources wherever possible.

Sales Model and Assumptions

Given the tough competition and already-established treatment regime in the field of rheumatism, the commercial success of SOL-116 will be largely dependent on the performance demonstrated in the upcoming clinical trials. Superior safety or efficacy to currently approved biologics (and JAK-inhibitors) would be highly encouraging considering SOL-116's first-in-class Profile. However, should the candidate only manage to demonstrate data in line with/worse than currently approved treatment options, we believe the anticipated late market entry in 2031e will restrict its patient share. Rheumatologists experience and practice with established bDMARDs and tsDMARDs is likely to provide such products with a leg-up on newly-approved drugs.

Furthermore, for now, our sales model of SOL-116 exclusively contains RA as the targeted indication. Should Lipum initiate clinical trials in any other indications in the future, we will evaluate and potentially add these to our sales model in upcoming research updates.

SOL-116 Sales Model – RA

Our sales projections are based on a quite modest five-percent market penetration of the addressable patient population in the US, EU5 and Japan, owing to the increasing availability of biosimilars. We assume a six-year launch curve before reaching this market penetration, based on a study by Robey & David (2017) which analyses historical averages for prescription drugs. Our estimate for sales erosion from this point relates to patent expiry. SOL-116 is expected to be patent protected until 2040e, following the company's international PCT-application. Considering our estimated market launch in 2031, this would provide nine years of market exclusivity.

The key assumptions in our SOL-116 RA sales model are:

- Market Launch in 2031e
- Peak market penetration of five percent in the key markets
- Annual pricing of USD18,000, USD12,000, and USD10,000 in the US, EU5 and Japan, respectively.
- Royalty rate of 12 percent
- Deal size of USD250m in 2027e
- 15% percent likelihood of reaching the market

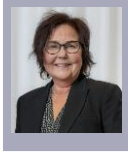
Based on these assumptions, we arrive at annual global peak sales of more than **USD600m** for SOL-116 in RA by 2039e.

SOL-116 Sales Model in RA – US, 5EU & Japan (USDm)

		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
US													
RA prevalence		2 141 606	2 184 438	2 228 127	2 272 689	2 318 143	2 364 506	2 411 796	2 460 032	2 509 233	2 559 417	2 610 606	2 662 818
Moderate/severe RA	75%	1 606 204	1 638 329	1 671 095	1 704 517	1 738 607	1 773 379	1 808 847	1 845 024	1 881 924	1 919 563	1 957 954	1 997 113
Patients on RA treatment	55%	883 412	901 081	919 102	937 484	956 234	975 359	994 866	1 014 763	1 035 058	1 055 760	1 076 875	1 098 412
2nd line patients	60%	530 047	540 648	551 461	562 491	573 740	585 215	596 920	608 858	621 035	633 456	646 125	659 047
Launch curve		0,10	0,25	0,50	0,70	0,90	1,00	1,00	1,00	1,00	0,70	0,40	0,20
Market share	5%	1%	1%	3%	4%	5%	5%	5%	5%	5%	4%	2%	1%
Treated patients		2 650	6 758	13 787	19 687	25 818	29 261	29 846	30 443	31 052	22 171	12 922	6 590
Compliance rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
List price	18 000	18 000	18 000	18 000	18 000	18 000	18 000	18 000	18000	18000	18000	18000	18000
Tax %	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Net price	14 400	14 400	14 400	14 400	14 400	14 400	14 400	14 400	14400	14400	14400	14400	14400
Revenue ($m)		**29**	**73**	**149**	**213**	**279**	**316**	**322**	**329**	**335**	**239**	**140**	**71**
growth		N/A	155%	104%	43%	31%	13%	2%	2%	2%	-29%	-42%	-49%
5EU													
RA prevalence		2 330 431	2 377 039	2 424 580	2 473 071	2 522 533	2 572 984	2 624 443	2 676 932	2 730 471	2 785 080	2 840 782	2 897 597
Moderate/severe RA	75%	1 747 823	1 782 779	1 818 435	1 854 804	1 891 900	1 929 738	1 968 332	2 007 699	2 047 853	2 088 810	2 130 586	2 173 198
Patients on RA treatment	55%	961 303	980 529	1 000 139	1 020 142	1 040 545	1 061 356	1 082 583	1 104 235	1 126 319	1 148 846	1 171 822	1 195 259
2nd line patients	60%	576 782	588 317	600 084	612 085	624 327	636 813	649 550	662 541	675 792	689 307	703 093	717 155
Launch curve		0,10	0,25	0,50	0,70	0,90	1,00	1,00	1,00	1,00	0,70	0,40	0,20
Market share	5%	1%	1%	3%	4%	5%	5%	5%	5%	5%	4%	2%	1%
Treated patients		2 884	7 354	15 002	21 423	28 095	31 841	32 477	33 127	33 790	24 126	14 062	7 172
Compliance rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
List price	12 000	12 000	12 000	12 000	12 000	12 000	12 000	12 000	12000	12000	12000	12000	12000
Tax %	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Net price	9 600	9 600	9 600	9 600	9 600	9 600	9 600	9 600	9600	9600	9600	9600	9600
Revenue ($m)		**21**	**53**	**108**	**154**	**202**	**229**	**234**	**239**	**243**	**174**	**101**	**52**
growth		N/A	155%	104%	43%	31%	13%	2%	2%	2%	-29%	-42%	-49%
Japan													
RA prevalence		776 950	792 489	808 339	824 506	840 996	857 816	874 972	892 471	910 321	928 527	947 098	966 040
Moderate/severe RA	75%	582 712	594 367	606 254	618 379	630 747	643 362	656 229	669 353	682 741	696 395	710 323	724 530
Patients on RA treatment	55,0%	320 492	326 902	333 440	340 109	346 911	353 849	360 926	368 144	375 507	383 017	390 678	398 491
2nd line patients	60%	192 295	196 141	200 064	204 065	208 146	212 309	216 556	220 887	225 304	229 810	234 407	239 095
Launch curve		0,10	0,25	0,50	0,70	0,90	1,00	1,00	1,00	1,00	0,70	0,40	0,20
Market share	5%	1%	1%	3%	4%	5%	5%	5%	5%	5%	4%	2%	1%
Treated patients		961	2 452	5 002	7 142	9 367	10 615	10 828	11 044	11 265	8 043	4 688	2 391
Compliance rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
List price	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10000	10000	10000	10000	10000
Tax %	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Net price	8 000	8 000	8 000	8 000	8 000	8 000	8 000	8 000	8000	8000	8000	8000	8000
Revenue ($m)		**6**	**15**	**30**	**43**	**56**	**64**	**65**	**66**	**68**	**48**	**28**	**14**
growth		N/A	155%	104%	43%	31%	13%	2%	2%	2%	-29%	-42%	-49%

Source: Redeye Research

Appendix I – Executive Management

Name	Position	Shares	Options
Ola Sandborgh	CEO		
	Leading roles in different commercial, innovation and business development positions in companies such as Pfizer, Sanofi Pasteur MSD and, most recently, as Vice President Immunology & Specialty Care at Swedish Orphan Biovitrum (Sobi). Been leading global cross functional teams as well as coordinating partnerships with numerous of companies, contributing in several early to late-stage development projects and acquiring a significant experience within M&A´s and DD´s.	15 000	0
Marina Norberg	Chief Financial Officer		
	Marina Norberg has experience of companies of different sizes in different industries. She has for many years been an approved auditor at PwC and worked as an authorized accounting consultant within Aspia AB. Marina has broad managerial experience and has also been part of the management team for Aspia.	7 900	4 000
Susanne Lindquist	Chief Scientific Officer		
	Doctoral degree in microbiology and associate professor in pediatrics at Umeå University. More than 20 years of research work on BSSL and more than 20 original scientific articles. Susanne Lindquist has expertise in preclinical models for arthritis and other inflammatory diseases. Co-founder of Lipum.	317 196	0
Pernilla Abrahamsson	Chief Operating Officer		
	Doctoral degree in anaesthesiology and intensive care at Umeå University. Pernilla Abrahamsson founded MD Biomedical AB and developed advanced medical equipment (OnZurf Probe). The company was acquired by Senzime AB in 2015, where she worked until she started her job at Lipum.	4 125	8 000

Appendix II – Board of Directors

Name	Position	Shares	Options
Ulf Björklund	Chairman of the board		
	Pharmacy degree at Uppsala University. Ulf Björklund has more than 35 years of experience from the pharmaceutical industry from research, development and marketing of pharmaceuticals to diagnostics. Previous engagements include CEO of Aprea in oncology and CEO of OxyPharma in autoimmune diseases.	15 895	15000
Olle Hernell	Director		
	Olle Hernell, MD, PhD, Professor of pediatrics and former head of Pediatrics at the Department of Clinical Sciences, Umeå University. He has more than 30 year experience as senior consultant, responsible for pediatric gastroenterology, hepatology and nutrition. He discovered the bile salt-stimulated lipase (BSSL) in human milk and is internationally well known for his BSSL research, clarifying its structure, characteristics and physiological function in fat digestion and its role in inflammation. Co-founder of Lipum.	330 169	0
Kristian Sandberg	Director		
	Dr Kristian Sandberg is an associate professor in immunology and an experienced leader in the pharmaceutical industry's research and development. Sandberg has over 20 years' experience from AstraZeneca in various functions within R&D, primarily with project leader responsibilities. He has experiences from the development of both protein and conventional small molecule based drugs from concept to clinical Phase II studies, in the field of neuroscience as well as respiratory, inflammatory and autoimmune diseases.	0	7 500
Åsa Hansdotter	Director		
	Åsa Hansdotter is an attorney-at-law and partner of the business law firm HWF Advokater AB in Helsingborg. She works with company and equity capital markets law, Swedish and international M&A and further handles corporate commercial matters as external legal counsel for listed and non-listed companies within the industry and life science sectors among others.	0	0
Ingemar Kihlström	Director		
	Dr Ingemar Kihlström has doctoral degree in physiology/toxicology from Uppsala University. He has extensive experience in drug development and the Life Science industry. Previously Dr Kihlström worked with research and development and business development at both Astra AB and Pharmacia AB followed by a career as pharmaceutical analyst in the finance industry at Swedbank, Aros Securities and ABG Sundal Collier. Over the years, he has worked both as Chairman and Director on the board of more than thirty companies.	0	7 500
Carl-Johan Spak	Director		
	Carl-Johan Spak is a senior advisor at Flerie Invest AB. Carl-Johan held senior positions at Recipharm between 2009 and April 2021, prior to which he was Head of Meda's Nordic organisation and CEO of Recip AB. He is currently engaged as a board member in several life science companies, both in Sweden and internationally.	0	0

Summary Redeye Rating

The rating consists of three valuation keys, each constituting an overall assessment of several factors that are rated on a scale of 0 to 1 points. The maximum score for a valuation key is 5 points.

Rating changes in the report

People: 3

We view the company's management and board as competent, and we believe shareholders can be confident in its executive and strategic abilities. Despite being small, the management team is dynamic and experienced.

Business: 3

Lipum is a biotech company in the research and development stage. Consequently, the company is yet to register any recurring revenue. Instead, the company is highly dependent on capital markets for near-term funding and potential licensing partners for future late-stage development. However, we argue that the future sales potential for SOL-116 is significant as our sales model estimates global annual peak sales of more than USD 600m.

Financials: 0

The company will be in need of capital and dependent on the capital markets to carry on operations until completion of phase II trials with SOL-116.

	2022	2023	2024e	2025e
INCOME STATEMENT				
Revenues	0	0	0	0
Cost of Revenues	0	0	0	0
Gross Profit	0	0	0	0
Operating Expenses	38	37	41	46
EBITDA	-38	-37	-41	-46
Depreciation & Amortization	0	0	0	0
EBIT	-38	-37	-41	-46
Net Financial Items	0	0	0	0
EBT	-38	-37	-41	-46
Income Tax Expenses	0	0	0	0
Non-Controlling Interest	0	0	0	0
Net Income	-38	-37	-41	-46
BALANCE SHEET				
Assets				
Current assets				
Cash & Equivalents	33	10	44	69
Inventories	0	0	0	0
Accounts Receivable	0	0	0	0
Other Current Assets	1	1	1	1
Total Current Assets	35	12	45	71
Non-current assets				
Property, Plant & Equipment, Net	0	0	0	0
Goodwill	0	0	0	0
Intangible Assets	0	0	0	0
Right-of-Use Assets	0	0	0	0
Shares in Associates	0	0	0	0
Other Long-Term Assets	0	0	0	0
Total Non-Current Assets	0	0	0	0
Total Assets	35	12	45	71
Liabilities				
Current liabilities				
Short-Term Debt	0	1	1	1
Short-Term Lease Liabilities	0	0	0	0
Accounts Payable	1	4	4	4
Other Current Liabilities	3	1	1	1
Total Current Liabilities	5	6	6	6
Non-current liabilities				
Long-Term Debt	2	2	2	2
Long-Term Lease Liabilities	0	0	0	0
Other Long-Term Liabilities	0	0	0	0
Total Non-current Liabilities	2	2	2	2
Non-Controlling Interest	0	0	0	0
Shareholder's Equity	2	2	2	3
Total Liabilities & Equity	8	10	10	11
CASH FLOW				
NOPAT	-38	-37	-41	-46
Change in Working Capital	-16	1	0	0
Operating Cash Flow	-52	-36	-38	-46
Capital Expenditures	0	0	0	0
Investment in Intangible Assets	0	0	0	0
Investing Cash Flow	0	0	0	0
Financing Cash Flow	38	14	72	72
Free Cash Flow	-52	-36	-38	-46

DCF Valuation Metrics	**Sum FCF (SEKm)**
Initial Period (2023–2030)	41
Momentum Period (2031–2035)	204
Stable Period (2036–)	163
Firm Value	408
Net Debt (last quarter)	-8
Equity Value	400
Fair Value per Share	15,00

	2022	2023	2024e	2025e
CAPITAL STRUCTURE				
Equity Ratio	0,1	0,2	0,1	0,0
Debt to equity	1,1	1,0	1,0	1,0
Net Debt	-31	-8	-41	-67
Capital Employed	30	6	39	65
Working Capital Turnover	0,0	0,0	0,0	0,0
GROWTH				
Revenue Growth	-23%	-100%	N/A	N/A
Basic EPS Growth	-53%	-19%	-52%	-20%
Adjusted Basic EPS Growth	-53%	-19%	-52%	-20%
PROFITABILITY				
ROE	-2398%	-1764%	-1720%	-1859%
ROCE	-128%	-591%	-104%	-71%
ROIC	388%	1245%	1186%	1282%
EBITDA Margin (%)	N/A	N/A	N/A	N/A
EBIT Margin (%)	N/A	N/A	N/A	N/A
Net Income Margin (%)	N/A	N/A	N/A	N/A
VALUATION				
Basic EPS	neg	neg	neg	neg
Adjusted Basic EPS	neg	neg	neg	neg
P/E	neg	neg	neg	neg
EV/Revenue	153,4	N/A	N/A	N/A
EV/EBITDA	neg	neg	neg	neg
EV/EBIT	neg	neg	neg	neg
P/B	55,8	26,4	57,8	77,7

SHAREHOLDER STRUCTURE	**CAPITAL %**	**VOTES %**
Thomas Eldered	33,2%	33,2%
Crafoordska stiftelsen	7,4%	7,4%
Susanne Lindqvist	4,1%	4,1%
Tibia Konsult AB	3,8%	3,8%
Olle Hernell	3,5%	3,5%

SHARE INFORMATION	
Reuters code	LIPUM
List	First North
Share price	6,6
Total shares, million	21,21244

MANAGEMENT & BOARD	
CEO	Ola Sandborgh
CFO	Marina Norberg
Chairman	Ulf Björklund

ANALYSTS
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Fredrik Thor

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Redeye Rating and Background Definitions

Company Quality

Company Quality is based on a set of quality checks across three categories: PEOPLE, BUSINESS, FINANCE. These are the building blocks that enable a company to deliver sustained operational outperformance and attractive long-term earnings growth.

Each category is grouped into multiple sub-categories assessed by five checks. These are based on widely accepted and tested investment criteria and used by demonstrably successful investors and investment firms. Each sub-category may also include a complementary check that provides additional information to assist with investment decision-making.

If a check is successful, it is assigned a score of one point; the total successful checks are added to give a score for each sub-category. The overall score for a category is the average of all sub-category scores, based on a scale that ranges from 0 to 5 rounded up to the nearest whole number. The overall score for each category is then used to generate the size of the bar in the Company Quality graphic.

People

At the end of the day, people drive profits. Not numbers. Understanding the motivations of people behind a business is a significant part of understanding the long-term drive of the company. It all comes down to doing business with people you trust, or at least avoiding dealing with people of questionable character.

The People rating is based on quantitative scores in seven categories:

- Passion, Execution, Capital Allocation, Communication, Compensation, Ownership, and Board.

Business

If you don't understand the competitive environment and don't have a clear sense of how the business will engage customers, create value and consistently deliver that value at a profit, you won't succeed as an investor. Knowing the business model inside out will provide you some level of certainty and reduce the risk when you buy a stock.

The Business rating is based on quantitative scores grouped into five sub-categories:

- Business Scalability, Market Structure, Value Proposition, Economic Moat, and Operational Risks.

Financials

Investing is part art, part science. Financial ratios make up most of the science. Ratios are used to evaluate the financial soundness of a business. Also, these ratios are key factors that will impact a company's financial performance and valuation. However, you only need a few to determine whether a company is financially strong or weak.

The Financial rating is based on quantitative scores that are grouped into five separate categories:

- Earnings Power, Profit Margin, Growth Rate, Financial Health, and Earnings Quality.

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Disclaimer

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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.
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Redeye Rating (2024-04-24)

Rating	People	Business	Financials
5p	7	5	2
3p - 4p	147	146	37
0p - 2p	18	21	133
Company N	172	172	172

Duplication and distribution

CONFLICT OF INTERESTS

Kevin Sule owns shares in the company : No
Fredrik Thor owns shares in the company :No
Redeye performs/have performed services for the Company and receives/have received compensation from the Company in connection with this.