SynAct Pharma

Sector: Biotech

New approach to established therapy

SynAct offers a new approach to the USD 20 billion-plus rheumatoid arthritis (RA) market. Its lead candidate AP1189 could mark an advance in **melanocortin therapy:** already in Phase II, it is believed to resolve inflammation without suppressing the immune system - making the severe side effects of current treatments less likely. Credible management and supportive valuation reinforce the case's attractions. However, a capital injection will be needed later this year to finance the full Phase II trial.

USD 20 billion+ market

Cheap small molecules are preferred by payers in large indications like RA. Yet this very substantial market lacks therapy with a positive risk-benefit profile. Accordingly, we see a place for AP1189 in RA and forecast peak US and EU5 sales of more than USD 600 million.

Proven management

As management and the board own one-third of the shares, alignment with external shareholders is high. Moreover, SynAct's senior executives have successfully taken compounds through Phase I and II together before. They also bring considerable experience in melanocortin therapy.

Supportive valuation

While nearer-term upside is limited by the company's need for new capital this year, our risk-adjusted DCF model suggests a base case valuation of SEK 13 per share, which comparison with peers supports as SynAct trades at a discount to other Swedish Phase II biotechs. This differential should narrow as top-line readouts from the Phase II study approach – first in Q1 20.

Our broad valuation range illustrates the binary nature of the investment case. If AP1189 fails to show clinically relevant efficacy in the ongoing Phase II trial, the pipeline will have a low remaining value (bear case: SEK 2). However, very encouraging data could lead to an attractive licensing deal and blockbuster sales, we judge (bull case: SEK 30)

FAIR VALUE RANGE

BEAR	BASE	BULL
2	13	30

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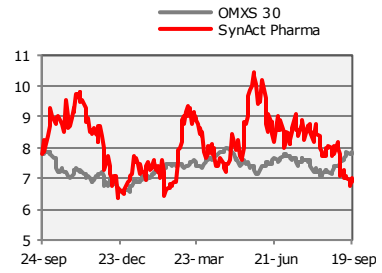
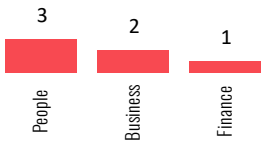


REDEYE RATING



KEY STATS

Ticker	SYNACT
Market	Spotlight
Share Price (SEK)	7
Market Cap (MSEK)	100
Net Debt 19E (MSEK)	27
Free Float	85 %
Avg. daily volume ('000)	10

KEY FINANCIALS (SEKm)	2017	2018	2019E	2020E	2021E	2022E
Net sales	0	0	0	0	168	8
EBITDA	0	-28	-35	-48	139	-22
EBIT	0	-29	-35	-48	139	-22

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Investment thesis

New approach to RA

SynAct is a Phase II biotech that aims to start melanocortin-based therapy earlier in the treatment paradigm for rheumatoid arthritis (RA). Currently melanocortin therapy serves as a last option for hard-to-treat patients due to its severe side effects. It is also expensive.

However, SynAct's lead candidate AP1189 is believed by the company to not cause the same side effects as Mallinckrodt's ACTH medicine Acthar – the current melanocortin standard. First in its class, the biased agonist approach is to help the body's own cells to fight inflammation. This resolution-based therapy contrasts with current treatments, which suppress the immune system. This suggests that AP1189 could potentially reap the efficacy benefits of conventional melanocortin-based therapy without causing severe side effects in patients.

RA is one of the largest pharmaceutical markets globally. Currently it is worth over USD 20 billion in the US, EU5 and Japan. Yet despite the vast number of drugs approved for RA the medical need remains high as no drug has been able to achieve disease-free remission. We believe a low-cost small molecule like AP1189 could be attractive to payers and has potential to come is an alternative treatment prior to high-priced biologics.

This could position AP1189 attractively, if approved. We forecast peak US and EU5 sales of more than USD 600 million.

Skin in the game

SynAct's management team has worked in this field for the last 20 years and has significant expertise in melanocortin research, clinical development and global deal making. Together they have taken compounds through Phase II successfully at both Action Pharma and TXP Pharma, scoring solid deals with large pharmaceutical companies.

Management and the board have skin in the game through their combined holding of more than 30 percent of the shares. This aligns their interests with those of shareholders. As part of taking out a loan of SEK 10 million in May 2019 management committed to a new lock-up period of 12 months.

Potential intact despite delays

After a Phase I trial of AP1189 was initiated, a setback from a new experimental formulation of the drug led to a delay of nine months. This hurt the company's credibility, resulting in the share price plunging from its all-time high of SEK 16 to below SEK 6. Despite the newly-initiated Phase II study, investors' negative perception of the share persists. As a result SynAct currently trades at a discount to its intrinsic value, we judge.

While we do not expect the price-value gap to close in near-term, we believe investors' interest in SynAct should increase as the top-line readout of the Phase II study approaches. We regard this as the key catalyst for the stock. As RA patients remain an easy population to recruit, we see a decent prospect of SynAct managing to adhere to its timeline of part 1 and 2 topline readouts in Q1 20 and Q1 21, respectively.

Key Catalysts

Asia licensing deal

While SynAct will probably await top line-data from the ongoing Phase II study before striking an AP1189 licensing deal in Europe and the US, there is a chance of a deal involving one or several Asian countries ahead of data readout. This would validate AP1189 and put SynAct on investors' radar at an early stage and also potentially provide Synact with non-dilutive financing to support development of its pipeline indication nephrotic syndrome.

New indication in clinic

SynAct has performed pre-clinical trials of AP1189 in nephrotic syndrome, a rare chronic kidney disorder with orphan designation potential in both US and Europe. Results have been positive and show a significant reduction of proteinuria in mice after daily dose for four weeks. We expect SynAct to enter into clinic for this indication during 2020, which could provide additional value for the AP1189 project.

Top-line Phase II data

The ongoing Phase II is a two-part trial. The first part will determine appropriate dosing. Read-out from this part of the study is due for release in Q1 20. The second part of the study will measure AP1189's efficacy with the potential of achieving proof-of-concept for the treatment of rheumatoid arthritis. Read-out from the trial's second part is due to be released in Q1 21.

Counter Thesis

Capital need this year

SynAct took out a loan of SEK 10m to finance the first part of the Phase II trial that it initiated recently. To pursue the subsequent Phase IIb trial, the company will need additional funding by the end of 2019. Investors may await a rights issue before entering the stock, which will hold it back in the near term. Down below we show the impact on our base case with different levels of size and discount of an anticipated rights issue.

Base case sensitivity analysis - impact of future rights issue*

		Discount		
		20%	30%	40%
Issue size (SEKm)	20	11	10	10
	30	10	9	9
	40	9	8	8

Source: Redeye Research
**Based on a current stock price of SEK 7*

One-trick pony

The company could be seen as a one-trick pony. Certainly if AP1189 fails to show clinically relevant efficacy in the ongoing Phase II trial, the pipeline will have almost no residual value. A dual development strategy with a parallel track in the nephrotic syndrome indication would reduce some of the risk, however.

Competitive market

The market for RA is one of the most competitive with many drugs approved or under development. If AP1189 fails to show safety or efficacy benefits over today's established brands, it will struggle to gain market share.

Company profile

SynAct Pharma AB is a Swedish clinical-stage biotech company developing drugs to treat inflammatory diseases. SynAct was founded in 2016 and is the parent company in a group including its wholly owned subsidiary SynAct Pharma ApS, which was founded in 2012 based on acquired intangible assets from Action Pharma. SynAct Pharma AB has been listed on Spotlight Stock Market since July 2016.

Through its technology platform the company has developed AP1189, an oral compound intended to treat rheumatoid arthritis. Encouraging safety data has been shown in a Phase I trial with 100 patients, and AP1189 is currently being evaluated in a Phase II study. In addition, preclinical trials with AP1189 are being pursued in nephrotic syndrome.

SynAct's business model revolves around licensing its clinical assets after achieving proof-of-concept in a Phase II study, earning upfront and milestone payments as well as recurring royalty revenues.

SynAct Pharma: Historical milestones

Year	Event
2012	SynAct Pharma ApS was founded based on acquired intangible assets from Action Pharma
2015	Preclinical studies of AP1189 are completed A scientific paper describing the "mode of action" for AP1189 was published SynAct Pharma received patent approval in Europe for AP1189 (US patent was approved in 2011)
2016	SynAct Pharma was listed on Aktietorget (Spotlight Stock Market)
2017	Clinical phase I trial for AP1189 was initiated Preclinical trials in several indications were initiated
2018	SynAct Pharma reports positive results from a preclinical trial in nephrotic syndrome The multiple-dose part of the phase I trial with AP1189 was finalized
2019	SynAct Pharma reported positive results from the phase I trial with AP1189 First patient in the phase II trial dosed with AP1189

Source: SynAct Pharma

Management and board

The management team consists of four people with extensive experience in drug development and deal making. The CEO, CFO and CSO have together successfully taken a compound through Phases I and II at both Action Pharma and TXP Pharma and were able to deliver solid deals with large pharmaceutical companies thanks to promising Phase II data.

Name	Position	Shares and warrant:	Experience
Management			
Jeppe Øvlesen	CEO	1 396 583 shares through Quantass ApS	Jeppe Øvlesen holds an MBA in Leadership and Finance from the University of Hartford. Previous experience includes, among others, CEO of ChemoMetec and PNN Medical A/S. Furthermore, Øvlesen is the founder of TXP Pharma.
Thierry Duvauchell	CMO	No holdings	Dr. Duvauchelle is one of Europe's most experienced experts within clinical pharmacology, with more than 25 years of experience in early clinical development. Dr. Duvauchelle has, for several years, been the head of the leading phase I clinic in Paris, Aster-Cephac, as well as Corporate VP of SGS, responsible for phase I clinics in France and Belgium.
Thomas Jonassen	CSO	2 236 971 shares	Thomas Jonassen is associate Professor at Copenhagen University and guest Professor at WHRI, Barts and London School of Medicine. Jonnassen has published more than 50 research papers and is the inventor behind six approved patents in the US and Europe. Previous experience includes, among others, co-founder and CSO of Action Pharma and TXP Pharma. Moreover, Jonassen is one of the researchers behind AP1189.
Henrik Stage	CFO	511 430 shares	Henrik Stage holds an MSc in Finance and has more than 25 years of experience from leading positions in the biotech and finance sector. Previous experience includes CFO and CEO of Santaris Pharma, where he carried out more than 10 partnership agreements with Big Pharma companies such as Pfizer, BMS, Roche, GSK and Shire.

Source: Redeye Research

Name	Position	Shares and warrant:	Experience
Board of Directors			
Torbjørn Bjerke	Chairman of the Board	733 210 shares	Torbjørn Bjerke has more than 25 years of experience within drug and business development. Bjerke has extensive experience of leading and developing early-stage biotech companies. Previous experience includes CEO of Karolinska Development AB, Orexo AB and Biolopox AB. Furthermore, Bjerke is co-founder of Action Pharma and TXP Pharma.
John Haurum	Board Member	-	John Haurum is former CEO of F-star (UK) with deal flow in excess of 200M EUR. He is also co-founder and former CSO of Symphogen and member of the board in a number of European biotech companies.
Terje Kelland	Board Member	-	Terje Kelland has experience from executive positions in Novo Nordisk, Biovitrum (SOBI) and Pharmacia. He is also the former vice CEO of Karolinska Development. He has a background as a professor at Lund University.
Thomas Jonassen	Board Member	2 206 669 shares	Thomas Jonassen is associate Professor from Copenhagen University and guest Professor at WHRI, Barts and London School of Medicine. Jonassen has published more than 50 research papers and is the inventor behind six approved patents in the US and Europe. Previous experience includes, among others, Co-founder and CSO of Action Pharma and TXP Pharma. Furthermore, Jonassen is one of the researchers behind AP1189.

Source: Redeye Research

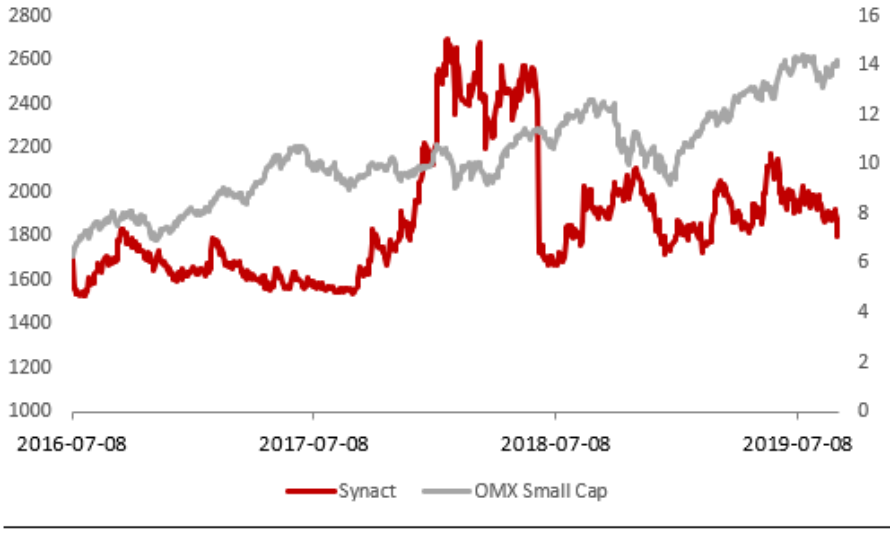
Ownership structure

While there is a lack of institutional owners at SynAct, the management and board do have skin in the game and together hold more than 33% of the shares. In May, SynAct took up a loan of SEK 10m from Formue Nord A/S and two other parties in order to finance the first part of the Phase II trial. In conjunction with this loan, the management committed to a new lock-up period of 12 months, which we view as encouraging.

Top 10 Owners	Stocks	% Capital/Votes
Thomas Jonassen	2,236,971	15.24%
Quantass ApS (Jeppe Øvlesen)	1,396,583	9.52%
Nordnet Pensionsförsäkring	1,078,563	7.35%
Avanza Pension	1,006,684	6.86%
Torbjörn Bjerke	763,512	5.20%
Henrik Stage	511,430	3.49%
A.M. Karlsson i Kvicksund AB	500,665	3.41%
Omt Invest A/S	328,587	2.24%
Robert Sahlin	289,000	1.97%
Dory Gevryie	251,700	1.72%

Source: Holdings, Redeye Research

Stock performance since the IPO



Source: Bloomberg

Since its IPO in July 2016, SynAct's stock has risen ~30% to SEK 7. However, due to specific clinical events, another preferential rights issue, and generally low liquidity, the stock's movement has been volatile. Notably, its strong performance in H2 2017 was due to positive results in the first part of the Phase I study with AP1189, at which point the stock rose from SEK 5 to SEK 15. The excitement was brief though, as in June 2018 SynAct announced a delay in the clinical development timeline owing to an experimental new formulation of the drug. The stock price subsequently collapsed to SEK 6. Since then it has been trading in a range of SEK 6-10.

The stock price is currently wavering between the excitement of finally initiating a Phase II study with AP1189 and the uncertainty as to how this will be financed. Its listing on the Spotlight Stock Market means SynAct struggles to attract institutional investors, as low liquidity in the stock discourages them from taking a position. We would be encouraged if SynAct were to aim for a listing on Nasdaq First North to broaden its ownership basis.

Given management's lock-up period within the coming 12 months, the current free float of shares is low. This indicates to us that fundamental events have the potential to drive significant movements in the stock, in either direction.

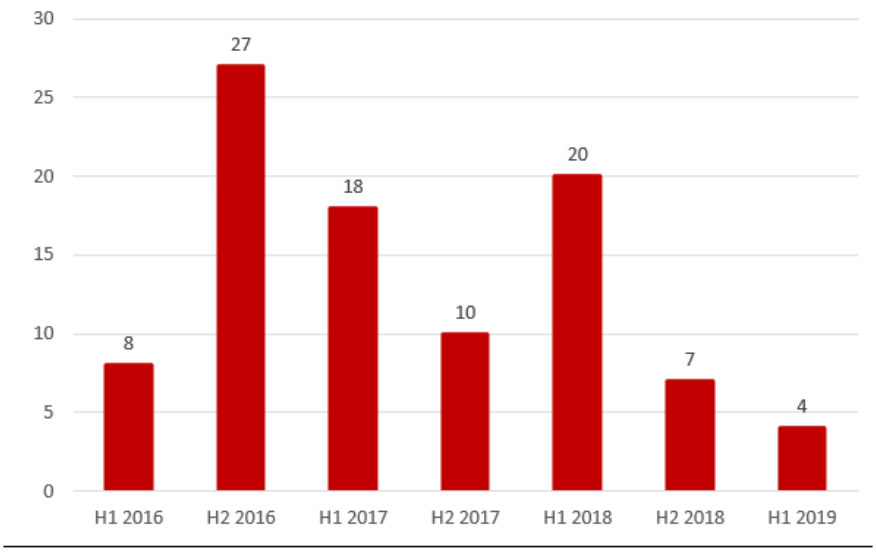
SynAct: Upcoming catalysts

Catalyst	Likelihood	Impact	Timeframe
Topline phase IIa	Highly	Very important	6-9 months
Topline phase IIb	Highly	Very important	18-24 months
US and EU licensing deal	Moderate	Very important	>24 months
Asia licensing deal	Moderate	Important	6-<24 months
NS indication enters into clinic	Highly	Modest	6-12 months

Source: Redeye Research

Capital need before the end of 2019

SynAct: Cash position (SEKm)



Source: SynAct Pharma

Synact: Previous financing rounds			
Event	**Time**	**Amount raised**	**Comment**
IPO	Q3 2016	~SEK 30m	Subscribed by roughly 203%
Warrants exercised	Q1 2017	~SEK 1m	
Rights issue	Q2 2018	~SEK 20m	Subscribed by roughly 196%
Loan	Q2 2019	SEK 10m	

Source: Synact Pharma

While the recent uptake of a SEK 10m loan will finance the Phase IIa trial, SynAct will need additional capital to pursue the full Phase II programme. We anticipate a rights issue of SEK 30-40 million after transaction costs will take place during H2 2019.

As seen in the table above, there has not been any problem financing the company in previous rounds. We believe the members of management and the board sitting on 30%+ of the shares will subscribe for more in the issue in order to defend their holdings in the company. We expect the majority of the shares to be subscribed for by retail investors though.

Project overview: AP1189 for the treatment of rheumatoid arthritis

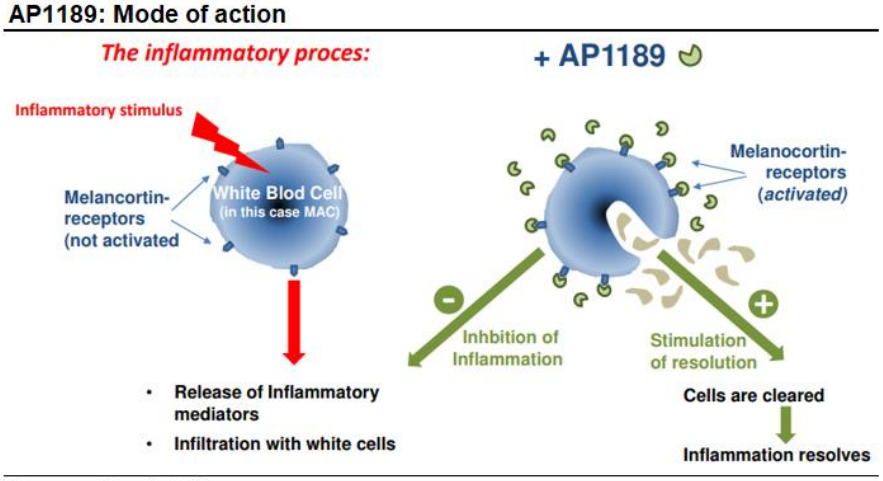
AP1189 is a first-in-class, orally formulated small molecule, targeting the melanocortin system. The drug is developed to treat patients suffering from moderate to severe rheumatoid arthritis (RA). AP1189 has a novel approach of resolving inflammation by helping the body's own cells to fight the inflammation, in contrast to today's standard treatments that inhibit immune system activity.

Today, methotrexate (MTX) is used as first-line treatment for RA patients. However, roughly 60% of patients have an inadequate response to MTX monotherapy and have to move on to costly biologics and/or corticosteroids. Key opinion leaders and payers stress the need for a cheap, small molecule that can serve as an add-on to MTX therapy in order to reduce the number of patients proceeding to next-line therapy. Given a cheaper pricing than established brands in later lines of therapy, we believe market uptake for AP1189 should be encouraging.

While current melanocortin-based therapies target all five receptors, AP1189 is a biased agonism against the specific receptors MC1 and MC3. The rationale of it only targeting the MC1 and MC3 receptors is to avoid unwanted side effects. Most important among these are, MC2-receptor-mediated side effects due to overproduction of natural steroids and MC4-mediated effects leading to reduced food intake and increased heart rate. In addition, as AP1189 is a biased agonist on the MC1 and MC3 receptors, it eliminates the unwanted side effect of skin pigmentation seen with traditional agonists.

The approach has been validated in preclinical models, where AP1189 was shown to significantly reduce inflammation in mice without inducing any steroid-related side effects.

AP1189: Mode of action



Source: SynAct Pharma

The side effects associated with conventional melanocortin-based therapy have limited its commercial success so far. Today it is used as an expensive last option for RA patients who have failed all other lines of therapy. If AP1189 can reap the efficacy benefits of conventional melanocortin-based therapy and also demonstrate a benign safety profile in humans, we believe it has the potential to be used in second-line therapy in patients who have failed MTX monotherapy. This would imply a total addressable patient population for AP1189 of nearly 1.7 million in the US and EU5.

Phase I studies have confirmed that the compound does not cause cardiovascular side effects, and it did not lead to any signs of skin pigmentation in the 100 patients. SynAct is now pursuing a two-part Phase II study with AP1189 as an adjunct to MTX in patients with active RA. The final results from the study are expected in late 2020, positioning the company for a potential licensing deal in 2021.

Clinical validation of AP1189

Preclinical evidence of AP1189 for arthritis

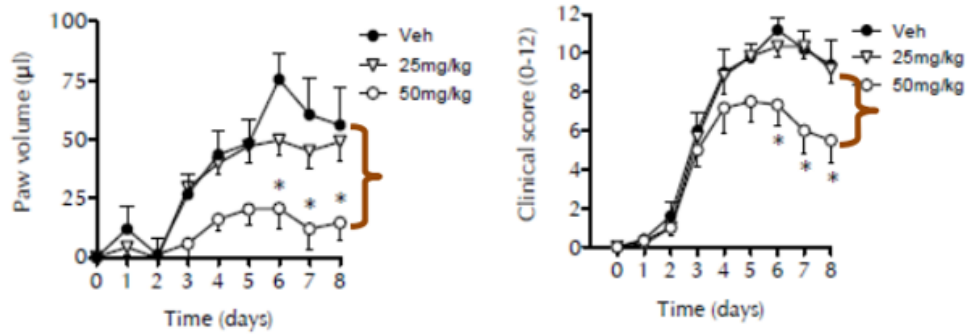
In 2015, a preclinical study of AP1189 for arthritis was published in The Journal of Immunology. In the study conducted by Melendez et al, the biased agonist AP1189 was shown to reduce arthritis in mice.[1]

In the study, AP1189 was administrated once daily at 25 or 50 mg/kg orally for one week, starting from the day when the arthritis began to be macroscopically detectable. A vehicle-treated[2] group was used as control. At 50 mg/kg, AP1189 reduced all signs of arthritis measured. Clinical score was reduced by 42%, paw swelling reduced by 87%, the proportion of animals with all four paws affected was reduced by 50%, and the severity of the inflammation was reduced by 70%. Histological analyses also revealed a significant reduction of synovitis (inflammation of the membrane of the joint). All in all, AP1189 displayed a benign safety profile.

Furthermore, when administrated at the peak of the inflammation (in other words, right before the beginning of the resolution), AP1189 was shown to promote resolution. In AP1189-treated mice, recovery was achieved three times faster than in vehicle-treated mice. Tissues were more effectively cleared from recruited immune cells when treated with AP1189.

Results from this study provided proof-of-concept data supporting the rationale of using a biased agonism for arthritis. The authors concluded that a biased agonism can lead to improved therapeutics and that AP1189 is a promising oral candidate for joint diseases including RA.

AP1189 effect on arthritis in mice. Less swelling (left) and lower disease activity (right)



Source: Montero Melendez, et al. J immunol, 2015

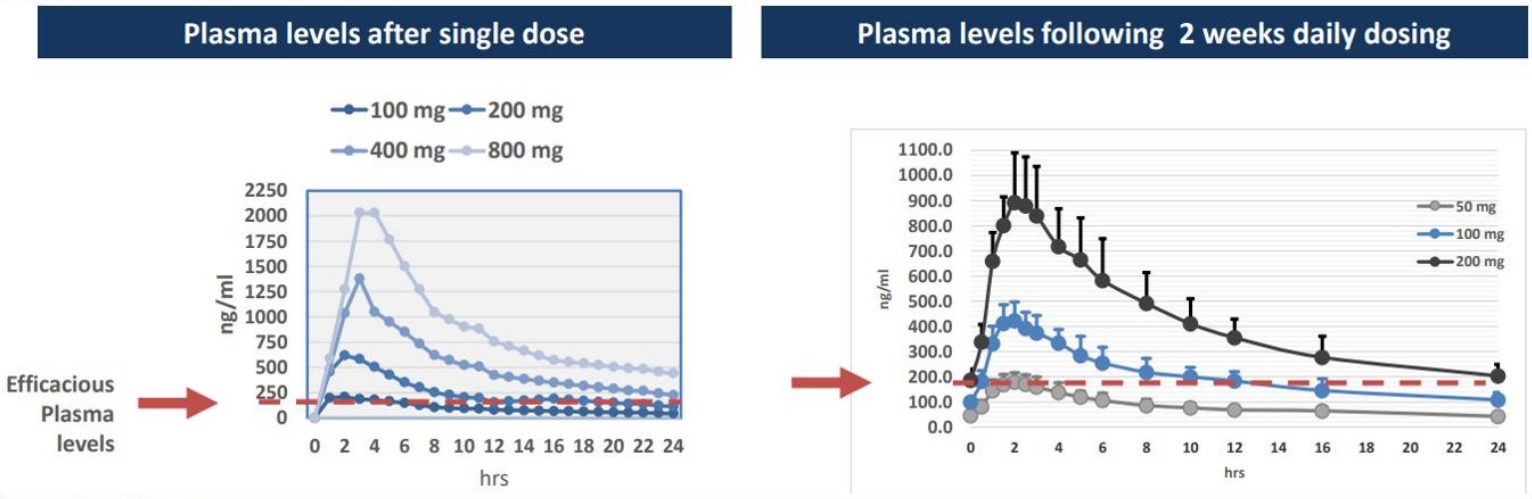
Phase I – safety evidence of AP1189

In 2018, SynAct initiated a Phase I study with AP1189, the primary objective being to evaluate safety and determine optimal dosing of the compound. In total, the study included more than 100 healthy individuals divided into single-dose and multiple-dose parts.

[1] Melendez, et al, 2015

[2] In a vehicle control, the supposedly innocuous substance is used alone, administered in the same manner in which it will be used with the experimental compound.

AP1189: Plasma levels seen in Phase I



Source: SynAct Pharma

The single-dose study was a double-blinded, placebo-controlled trial including 64 healthy individuals. AP1189 was administrated orally (suspension) once daily for 14 days. The 48 patients receiving AP1189 displayed a favourable safety profile up to concentration levels ten times higher than the anticipated therapeutic relevant dose. No severe side effects were seen, and the compound demonstrated a good pharmacokinetic profile.

Following the successful single-dose study, AP1189 was reformulated as a tablet, with the idea that its commercial attractiveness would increase if administered in tablet form rather than in suspension. SynAct initiated a multiple-dose study with the new tablet formulation, but this had to be terminated as early data indicated too large variations in the pharmacokinetic profile. These were thought to be related to the new formulation. This setback delayed the clinical development timeline by roughly nine months.

A new multiple-dose study was later initiated with the old suspension formulation. This was also a double-blinded, placebo-controlled trial including 36 individuals divided into three cohorts. The results showed that AP1189 was safe and tolerable up to doses of 100mg once daily for 14 days. Long elimination half-life supports the hypothesis that AP1189 should be given once daily.

Phase II – initiated August 2019

The Phase II trial is a two-part, randomized, placebo-controlled, four-week study evaluating the safety and efficacy of AP1189 in combination with methotrexate in patients with active RA. The study has three arms: two different doses of AP1189 (50mg and 100mg) and one placebo arm.

In the Phase IIa study, appropriate dosing of the compound will be determined in approximately 36 patients. Interim data from this part of the study is expected to be released in Q1 2020.

Phase IIb, involving 54 patients, will be a continuation of the first part, the primary purpose being to determine the efficacy of AP1189 (measured as change in CDAI at week 4). Interim data from the Phase IIb study is expected to be released in Q1 2021.

The market for rheumatoid arthritis

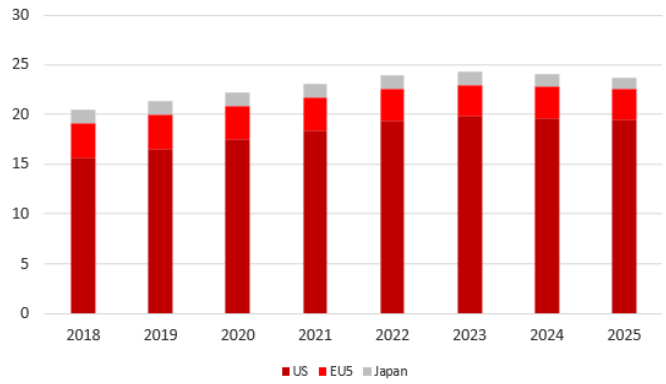
According to Datamonitor, The RA market in the US, Japan and EU5 is worth about USD 21 bn in 2019 and estimated to grow at a CAGR of roughly 3% until 2022. In the US, growth is primarily driven by annual price increases and rising disease prevalence due to an ageing population. The EU5 and Japanese markets are only expected to see marginal growth as an increase in patient numbers is offset by downward pressure from the launch of lower/cost biosimilars. While MTX remains the first-line therapy in all markets, TNF inhibitors (biologics) dominate the market with a 68% share owing to their high price. Among them, Enbrel and Humira are estimated to maintain almost half of the market value alone, despite pressure from biosimilars in the coming years.

Over recent years, Janus kinase (JAK) inhibitors Xeljanz and Olumiant have gained traction in the medical community due to their convenient oral dose formulation. Appetite among payers to reimburse JAK inhibitors has been low, however, as after rebates they are more expensive than the widely used TNF inhibitors. Consequently, JAK inhibitors are primarily used for patients who have failed with TNF inhibitors.

As two promising JAK inhibitors are in Phase III for RA (filgotinib and upadacitinib), we should see price pressure in this segment in the coming years, which we believe will help support market uptake. Two important factors in JAK inhibitors taking further ground from Humira and Enbrel are lower pricing as a consequence of increased competition plus recently updated European guidelines pushing JAK inhibitors earlier in the treatment paradigm.

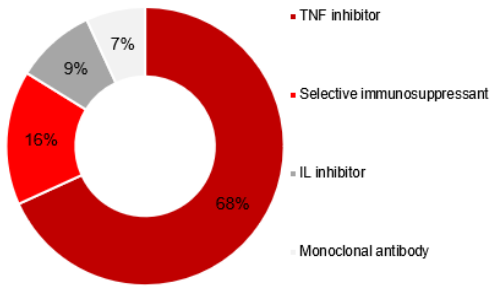
For new agents to stake a claim in the RA market, we believe it will be key for companies to conduct head-to-head trials with biologics such as Humira and Enbrel to prove efficacy and/or safety benefits. Physicians and payors are known for their conservatism and will need proof of long-term efficacy data to be convinced to switch treatment.

Global RA pharmaceuticals sales: 2018-2025



Source: Datamonitor 2019

Global RA sales by drug class: 2018



Source: Datamonitor 2019

Melanocortin therapy: An emerging approach to inflammatory diseases

The concept of resolution of inflammation is a novel approach in developed over the last 20 years to treat acute inflammation. In contrast to today's standard treatment, these drugs mimic the body's way of naturally abating inflammation to promote pro-resolving and anti-inflammatory mediators.

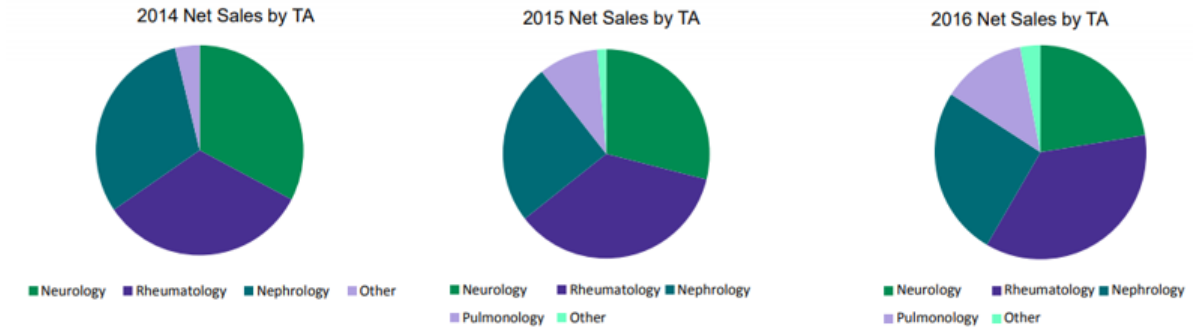
Market for melanocortin-based therapies

There is only one product approved in the melanocortin space, thus accounting for the total global market. Acthar (Mallinckrodt Pharmaceuticals) is a gel approved by the FDA for the treatment of 19 indications. It is injected subcutaneously or intramuscularly (beneath the skin or into the muscle).

In 2018, sales of Acthar amounted to USD 1.1bn. Based on 2014-2016 sales data from Mallinckrodt Pharmaceuticals, we estimate the rheumatology segment accounts for roughly 40% of Acthar sales for 2019, implying a USD 440m market for Acthar in RA. At present, the use of melanocortin-based therapy in current clinical practice is hindered by the lack of studies comparing the efficacy of Acthar gel to corticosteroids. However, we suspect this might well be a deliberate strategy by Mallinckrodt to maintain a very high pricing for Acthar.

Consequently, melanocortin-based therapy is currently a niche therapy used for patients with acute inflammation who do not respond to corticosteroids.

H.P. Acthar Gel sales per segment



Source: Mallinckrodt Pharmaceuticals Investor Briefing October 4, 2017

Recent deals within the melanocortin space

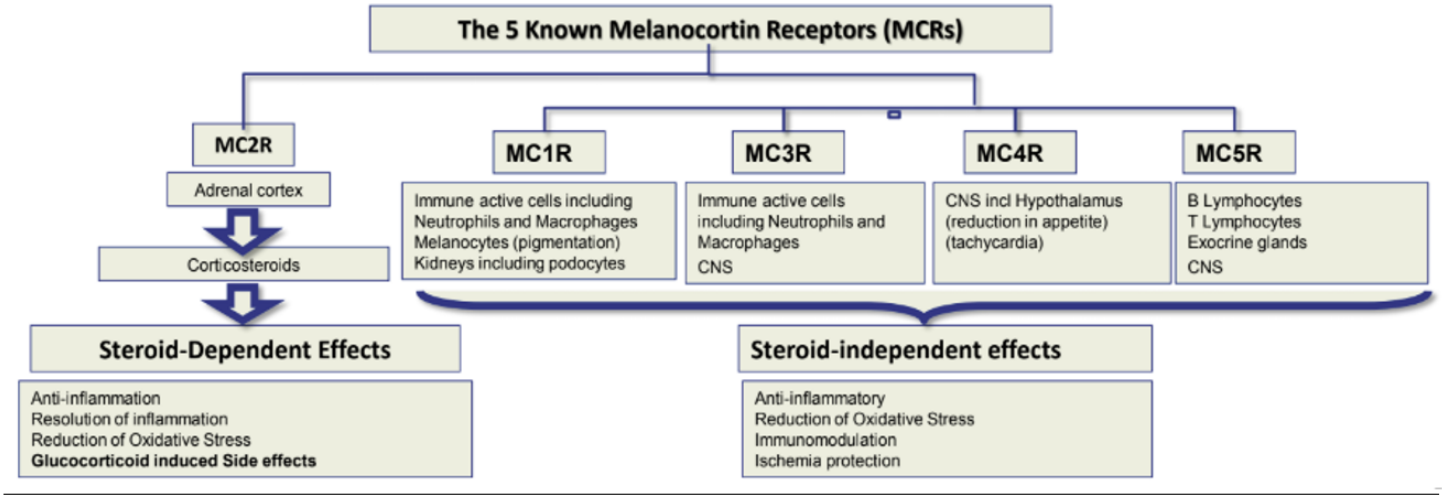
Acquirer	Seller	Program/product	Year	Deal value
Abbott	Action Pharma	AP214	2012	110 USDm
Questcor	TXP Pharma	Peptide programme	2013	100 USDm
Mallinckrodt	Questcor	The whole company including Acthar gel	2014	5.7 USDbn
ANI Pharmaceuticals	Merck	Corticotropin products	2015	75 USDm
AMAG Pharmaceuticals	Palatin	Rekynda (bremelanotide)	2017	440 USDm

Source: Redeye Research

The melanocortin system is critical to survival as it is involved in a wide variety of physiological functions. It comprises five receptors (MC1-MC5) that are a family of druggable G protein-coupled receptors (GOCRs). These receptors are attractive therapeutic targets due to their wide distribution and the diversity of the physiological processes they regulate. The melanocortin system is activated when an inflammatory condition occurs, and it contributes anti-inflammatory effects for a quicker recovery.

Little is known about the effects of melanocortins on human arthritis other than the impact of ACTH-based therapies in RA and gout, which have been known since the 1950s.

Overview of the five melanocortin receptors



Source: SynAct Pharma

ACTH has potent effects in autoimmune and inflammatory disorders thanks to melanocortin receptor activation and the release of steroid hormones. It works with the body and the central nervous system to produce own natural hormones, which are believed to impact the inflammatory process. In addition to RA and gout, ACTH has also shown efficacy in several other rheumatic disorders, suggesting it could be a high-potential therapeutic approach in inflammatory diseases.

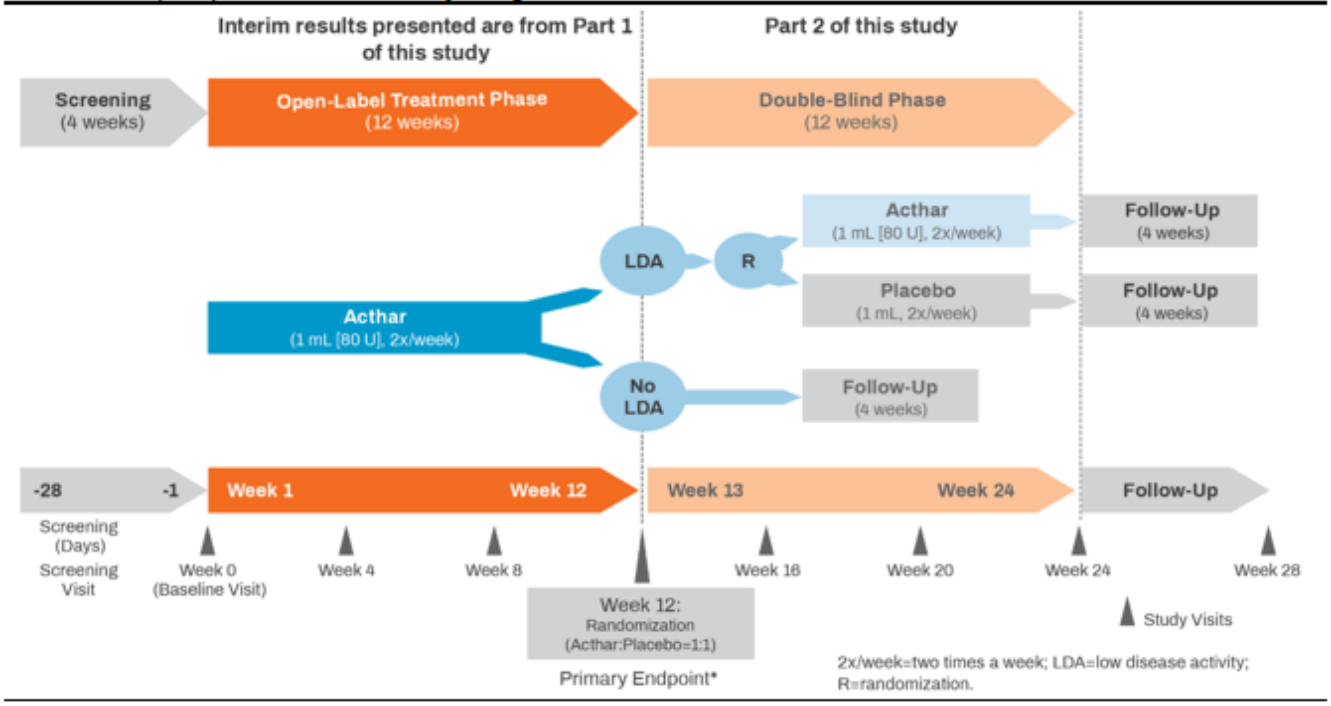
The overall use of ACTH is limited, however, because of the side effects associated with activating all five melanocortin receptors, including the MC2 receptor – leading to overproduction of cortisol, which is immunosuppressive. In addition, a number of other, often treatment-limiting side effects associated with increased circulation of steroid hormones are commonly seen. Skin pigmentation resulting in a marked darkening of the skin is seen with prolonged treatment.

Efficacy of melanocortin-based therapy for RA – Fleischmann (2018)

The effect of melanocortin-based therapy for RA has been validated in several studies, although most were conducted with a low number of patients, limiting the clinical impact of the results. One large-scale study of interest was conducted by Fleischmann (2018).

This was a Phase IV, two-part study assessing the efficacy and safety of Acthar gel in 259 patients with persistently active RA who had previously been treated with corticosteroids and conventional synthetic and/or biologic DMARDs. The primary endpoint of the study was the proportion of patients reaching low disease activity at 12 weeks, measured using DAS28-ESR.

Fleischmann (2018): Acthar for RA - Study design



Source: Mallinckrodt Pharmaceuticals

The full results of the study were presented at the European Congress of Rheumatology in June 2019. The study met all primary and secondary endpoints, the most interesting data, in our view, being the following:

- 63% of patients achieved low disease activity at week 12 (although there was no mention of the level for the placebo group)
- More patients with persistently active RA met response criteria at week 12 and maintained low disease activity results when treated with Acthar gel (62%) versus placebo (43%, P<0.05) at week 24 – a substantial difference in this more refractory patient population
- More patients in the Acthar gel group (86%) than the placebo group (66%, P≤0.05) had sustained low disease activity at week 24 as defined by the Clinical Disease Activity Index.
- Fewer patients in the Acthar gel continuation group experienced cumulative disease activity flare rate at week 24 (17%) than in the placebo group (30%, P<0.05)[3]

Adverse events seen in the study were similar to those seen in previous studies of Acthar and included fluid retention, alteration in glucose tolerance, elevation in blood pressure, behavioral and mood changes, increased appetite, and weight gain. We believe these results support the rationale of using Acthar as a last option in hard-to-treat patients, rather than it being a drug for the wider patient population.

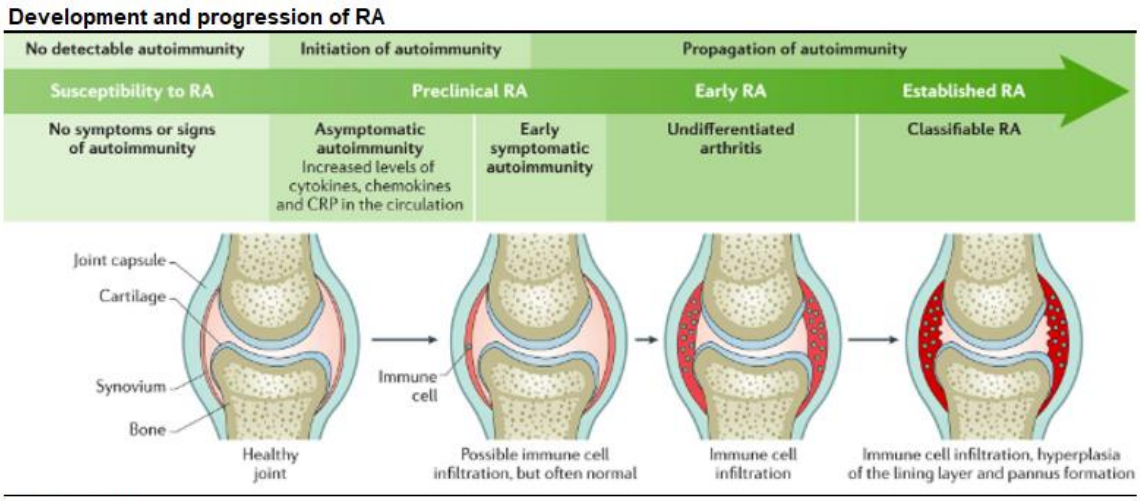
While the efficacy of biased agonist AP1189 for RA remains to be seen, we consider this study meaningful as it validates the melanocortin system as an attractive target for RA.

[3] Mallinckrodt 2019

Disease background: Rheumatoid arthritis

RA is a chronic autoimmune disease characterized by inflammation of the joints and other tissue, affecting about 1.3 million patients in the US and 1.5 million in EU5. Left untreated, RA can lead to significant disability and poor quality of life, with high morbidity and mortality rates. The severity of RA may fluctuate over time, but it most commonly results in the progressive development of various degrees of joint destruction and a significant decline in functional status. Patients with RA may have trouble performing activities of daily life, such as standing, walking, or even the use of their hands.

RA can be difficult to diagnose in its early stages because the initial signs and symptoms mimic those of many other diseases. Usually, a physical exam and blood and imaging tests are used to arrive at a diagnosis. RA tends to affect middle-aged and elderly individuals.



Source: Nature

RA occurs when the immune system attacks the synovium – the lining of the membranes that surround the joints. The resulting inflammation thickens the synovium, which can eventually destroy the cartilage and bone within the joint. The tendons and ligaments that hold the joint together weaken and stretch. Gradually, the joint loses its shape and alignment.

It is a disease of ups and downs. One day, a patient's joints might feel good, while the next, the swelling and pain might ratchet up and it can be hard for the sufferer to even get out of bed. When symptoms worsen, this is known as a flare. Patients often find that flares come and go in waves throughout their lives. The duration of each flare varies from a few days to several months. Experiencing a flare commonly interferes with mood, sleep quality, and the ability to perform everyday activities. In a study conducted by RA in America in 2013, more than 1,000 patients with RA were asked questions about their flares. Results showed that 75%-plus experienced at least one flare monthly and more than 20% had flares lasting for a month or more.[4]

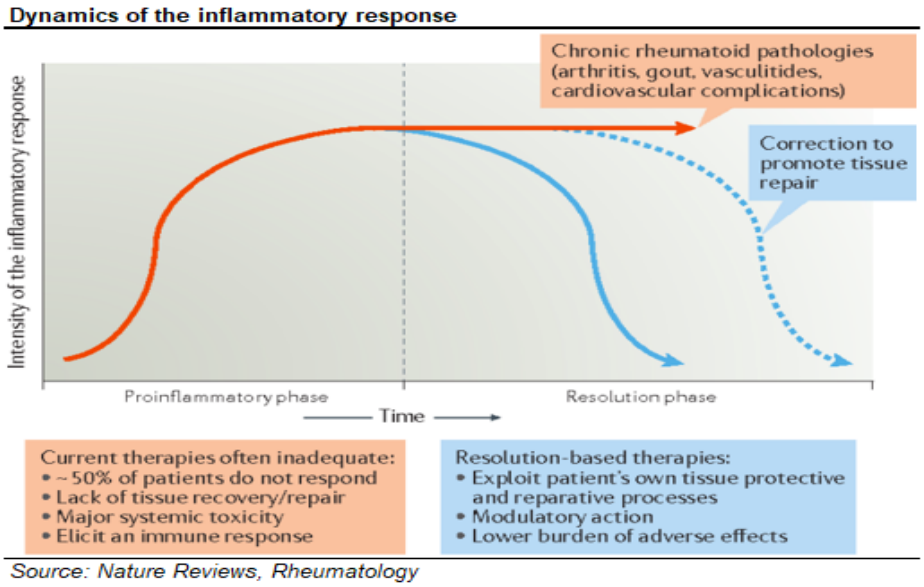
The inflammatory process

Acute inflammation is characterized by a proinflammatory phase, followed by a resolution phase. In the proinflammatory phase, neutrophils (white blood cells) enter the inflamed tissue and release toxins to kill and eliminate foreign entities.

[4] RA in America, 2013

In the resolution phase, macrophages play a crucial role in counterbalancing the proinflammatory phase to end inflammation, supporting an immune response to help heal/repair the affected tissue.

The inflammatory reaction is fundamental to our wellbeing and survival. However, persistent inflammation in a tissue can lead to pathology typified by several rheumatic diseases. Current therapeutic agents are predominantly anti-inflammatory, supressing the active processes of inflammation by antagonising specific receptors. As seen below, this approach often brings unwanted effects.



Source: Nature Reviews, Rheumatology

Current treatment paradigm of rheumatoid arthritis

First line – Synthetic DMARDs

Synthetic disease-modifying antirheumatic drugs (DMARDs) have long been used as first-line treatment to slow the progression of joint destruction in patients with RA. Although these agents fail to significantly improve the course of the disease, they do tend to slow its progression and prevent permanent damage to the joints and other tissues by interfering with the overactive immune system.

Methotrexate (MTX) monotherapy remains the preferred first-line DMARD regimen in the US, EU5 and Japan, owing to its low cost, oral formulation, and the extensive experience physicians have with it. MTX's mechanism of action in RA is complex but most likely associated with its antiproliferative and immunosuppressive effects. A mere 40% of patients can be successfully treated with MTX monotherapy; the rest have to move on to the next line of treatment.[5]

Second line – Biologic DMARDs

If a patient doesn't respond to MTX monotherapy, they are usually switched to or additionally given a tumour necrosis factor (TNF) alpha inhibitor. These are antibodies made in a lab from human or animal tissue. They reduce inflammation and stop disease progression by

[5] Nature 2016

targeting the inflammation-causing TNF. Biologics such as the anti-TNF inhibitors provide the patient with the long-term benefit of a reduced need for surgery (joint replacement) and other treatments or rehabilitation associated with RA. Biologics are considerably costlier than synthetic DMARDs though.

Enbrel and Humira share first-line biologic status in the US, EU5 and Japan. Due to patients' often inadequate response to MTX monotherapy, Enbrel and Humira currently dominate earlier lines of therapy for RA. Key opinion leaders stress the difficulty in displacing these drugs due to their proven real-world efficacy, positive long-term safety data, and physician and patient familiarity.

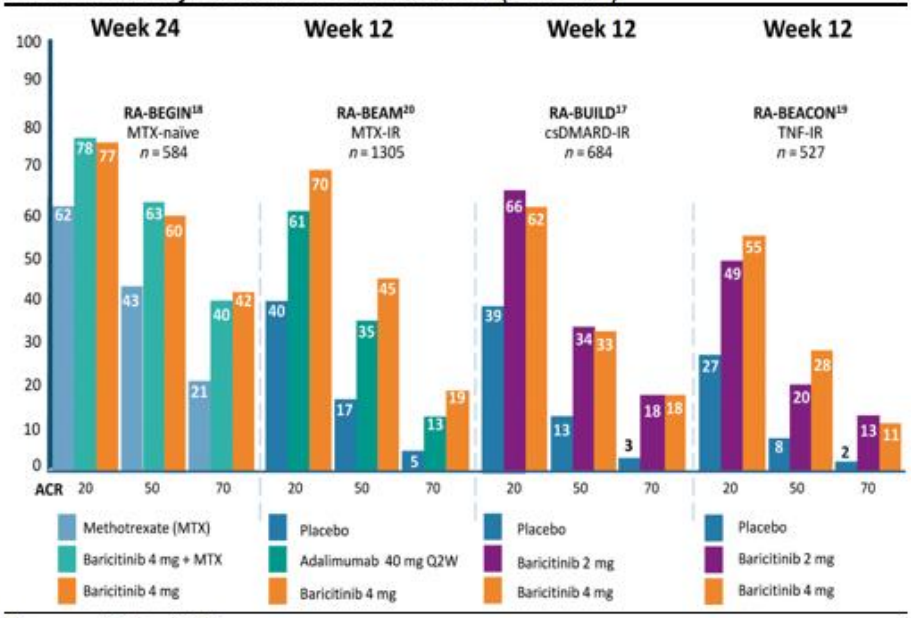
Second/third line – JAK inhibitors (targeted synthetic DMARDs)

Janus kinase (JAK) inhibitors are an emerging treatment approach in RA. They are intracellular enzymes that transmit signals from cytokines binding to receptors on the cell surface to the signal transducers and activators of transcription that drive pro-inflammatory cellular responses. While biologic DMARDs act outside the cells to suppress inflammation and are given by injection or infusion, JAK inhibitors work inside the cells and are taken orally.

Tofacitinib (Xeljanz) was the first JAK inhibitor to make it to the US market back in 2012. It is approved in both the US and Europe for use by adult patients with moderate to severe RA. In US, the label suggests the drug should be given to those who have had an inadequate response or intolerance to MTX, whereas the European label states that tofacitinib is suitable for those who responded inadequately to or are intolerant to one or more DMARDs.

Baricitinib (Olumiant) was the second JAK inhibitor approved for RA by the EMA and FDA in 2017 and 2018, respectively. Both baricitinib and tofacitinib showed encouraging data in Phase III trials, where they displayed an efficacy in line with/superior to biologic DMARDs.

Clinical efficacy of JAK inhibitor baricitinib (Olumiant)



Source: Taylor 2019
*adalimumab = Humira

The table below presents cross-trial comparisons of the clinical efficacy of Olumiant and the two pipeline JAK inhibitors, filgotinib and upadacitinib.

Cross-trial comparison - efficacy in rheumatoid arthritis

	Finch 1 (NCT02889796)				Select-Compare (NCT02629159)		
	Filgotinib 200mg	Filgotinib 100mg	Humira 40mg	Placebo	Upadacitinib 15 mg	Humira 40mg	Placebo
ACR20 response (%)	77*	70*	71	50	71*†	63	36

Source: Evaluate 2019
*p<0.001 vs placebo †p<0.05 vs Humira. All at 12 weeks

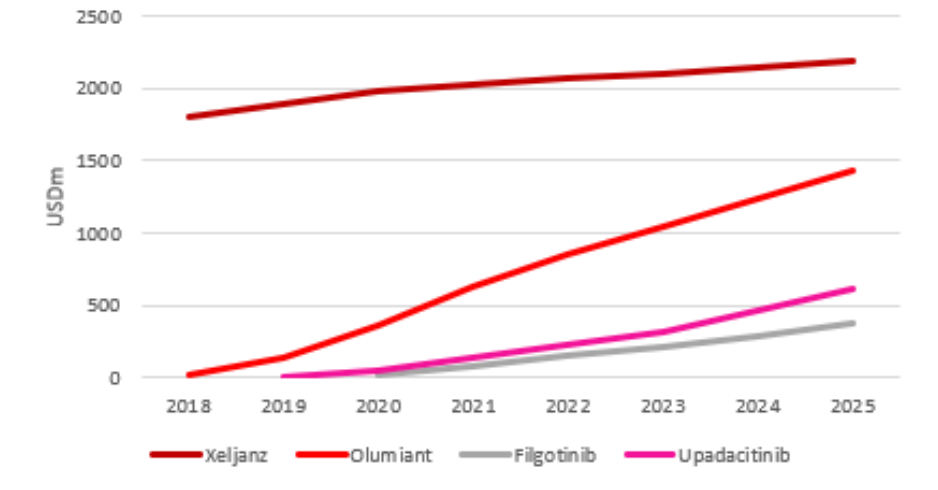
The market uptake of JAK inhibitors has been relatively low so far because their high pricing has led to poor incentives from payors to prescribe them instead of the established Enbrel and Humira. If Xeljanz were priced more competitively, we argue it could move earlier in the treatment paradigm, as its oral formulation is considered more favourable by patients than injections of Enbrel and Humira.

However, we believe safety issues have also played a role in the relatively low market uptake of JAK inhibitors. They tend to cause side effects as they halt some immune system actions, which can leave patients open to different infections. The issue reared its head recently with an official FDA warning on Xeljanz in early 2019 following a reported increase in pulmonary embolism and death in a post-marketing safety trial of the drug in RA.

JAK inhibitors in clinic

Development of new therapies that allow patients to achieve drug-free remission or low disease activity remains the most prominent unmet need in RA. And this keeps R&D investments at a high level. A few promising JAK inhibitors are moving through the RA pipeline, including filgotinib (Galapagos/Gilead) and upadacitinib (AbbVie). We estimate upadacitinib can be launched in the US during 2019 and filgotinib during 2020.

JAK inibitors: Estimated sales in US and EU5



Source: Datamonitor, Redeye Research

Approval of both upadacitinib and filgotinib will likely induce price pressure in the JAK inhibitor space. As of today, the annual cost of treating a patient with Xeljanz/Olumiant in the US is about USD 34 000. We expect that the entry of two additional competitors would decrease pricing to somewhere between USD 25 000 and USD 30 000/year for the players to maintain a decent market share.

Another potential profitability risk is the anticipated 2023 launch of biosimilar adalimumab (Humira) in the US. We believe this will negatively impact market uptake of second-/third-line drugs, as the biosimilars may be considered by physicians earlier in the treatment paradigm thanks to lower costs.

Outcome measures for RA

Payers and key opinion leaders express diverging opinions on the merits of the various efficacy endpoints used in RA. Most regard the DAS28 for RA as the most reliable endpoint for measuring efficacy. This endpoint looks at 28 different joints in the body to measure the number with tenderness upon touching and swelling, and this is then translated into a score.

Many also utilize ACR scores, which take into account a variety of factors to create a score of improvement in a patient's rheumatoid arthritis after treatment. ACR criteria also assess and establish tender and painful joint counts, as well as improvements in several other parameters.

Historically, we have seen drugs gaining market approval based on different endpoints. Whichever endpoint is chosen, the medical community agrees that the magnitude of the results and more stringent endpoints are important.[6]

Additional potential indications for AP1189

Nephrotic syndrome

Nephrotic syndrome (NS) is caused by kidney damage, with symptoms including protein in the urine, low blood albumin levels, high blood lipids, and significant swelling. Left untreated, it can lead to kidney failure. NS is today treated with corticosteroids, cytostatic drugs, and ACTH and ACE receptors.

SynAct has performed pre-clinical trials in NS with AP1189. Results have been positive, demonstrating a significant reduction in proteinuria after taking a daily dose for four weeks. The study was performed in rats with immunologically induced protein and showed a 50% reduction in proteinuria compared to placebo. AP1189 was given when proteinuria was at its highest point in the animal and the results were compared to the highest amount of proteinuria the rat had pre-treatment. The reduction can be compared to the effect that can be reached with ACTH treatment. The market for treating NS with ACTH is worth around USD 300m a year.

Thanks to these results SynAct has applied for a patent on AP1189's potential effects to treat diseases characterized with proteinuria. It will carry out more pre-clinical studies in NS and further in the nephrology field.

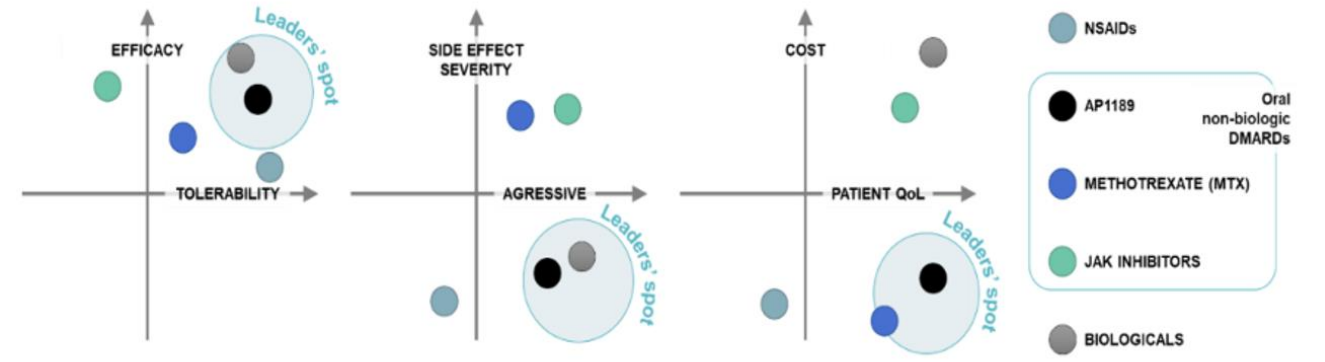
[6] Datamonitor

Market opportunity

The clinical landscape within RA is highly competitive, with many approved drugs and several pipeline candidates. Enbrel and Humira are the most widely used biologics for patients not responding to MTX. According to Datamonitor, these two drugs are expected to maintain their favourable market positions due to their proven efficacy, safety, and long-term physician and patient experience.

As AP1189 is likely to serve as an add-on to MTX, we do not view Enbrel, Humira, and the other TNF inhibitors as its primary competitors. Given encouraging data in the upcoming Phase II trial, we believe AP1189 is likely to be evaluated as an alternative drug prior to these, after patients have failed MTX monotherapy. AP1189's main competitors are drugs prescribed before biologics or that can be considered an add-on to MTX. Among these, we see the JAK inhibitors as the biggest threat, as all have shown encouraging data in comprehensive Phase III trials. Like AP1189, these are given orally, either as monotherapy or as an adjunct to MTX.

AP1189: Market positioning



Source: SynAct Pharma

If AP1189 were to demonstrate efficacy in line with established JAK inhibitors and be approved, we believe it would be in an appealing position on the market, as side effects have long been an issue with JAK inhibitors. However, we argue a Phase III study with AP1189 would have to show clinically relevant efficacy in 1000+ RA patients in order to gain traction among clinicians and payers. As a reference, 3315 RA patients received the first-to-market JAK inhibitor Xeljanz across its five Phase III trials.[7]

JAK inhibitors: Number of RA patients in pivotal phase III trials

	Xeljanz	Olumiant	Filgotinib	Upadacitinib
No. patients	3315	2572	3273	4125

Source: Datamonitor

[7] Datamonitor

Financials

Operating costs and cash burn will be driven by R&D costs stemming from the Phase II study for AP1189, as well as shared overhead costs related to management, the board, and preclinical studies. We model the total costs for the Phase II study at slightly above SEK 20m, which will burden 2019 and 2020 figures.

In May 2019, SynAct took up a loan of SEK 10m with interest of 15% to finance the first part of the Phase II trial. The loan is due to be paid back by the end of 2019. We expect no other financial costs going forward. However, SynAct will need an additional capital injection to finance the Phase IIb trial.

SynAct Pharma: Income statement (non-risk-adjusted)

(SEKm)	FY 2018A	Q1 2019A	Q2 2019A	Q3 2019E	Q4 2019E	FY 2019E	FY 2020E
Sales	0	0	0	0	0	0	0
OPEX	-28	-6	-6	-12	-12	-35	-48
EBIT	-28	-6	-6	-12	-12	-35	-48
Net financials	0	0	-1	0	-1	-2	0
Tax	5	1	1	1	1	6	7
Net profit	**-23**	**-5**	**-6**	**-11**	**-12**	**-31**	**-41**

Source: Redeye Research

Licensing deal assumptions

SynAct's business model is to seek a licensing partner after completing the Phase II trial. Our base-case scenario models that SynAct enters into a partner collaboration after a successful Phase II programme. We use the recent deal between AMAG Pharmaceuticals and Palatin on melanocortin asset Rekynda as a benchmark deal for AP1189. While the Rekynda deal only included North American rights to the drug, it had two encouraging Phase III deals under its belt at the time of agreement.

AP1189: Benchmark deal

Licensor	Licensee	Year	Indication	Phase*	Upfront ($m)	Deal value ($m)	Comments
AMAG Pharmaceuticals	Palatin	2017	HSDD	III	60	440	AMAG Pharmaceuticals receive exclusive North American rights to develop and commercialize Rekynda (bremelanotide), an investigational product designed for on-demand treatment of hypoactive sexual desire disorder (HSDD) in pre-menopausal women, that has successfully completed two phase 3 trials.

Source: Redeye Research

There are other examples of large conducted deals that could serve as a benchmark for AP1189. One is the deal between Rigel Pharmaceuticals and Astra Zeneca for RA candidate R788/fostamatinib disodium.

Licensor	Licensee	Year	Indication	Phase*	Upfront ($m)	Deal value ($m)	Comments
Rigel Pharmaceuticals	Astra Zeneca	2010	RA	II	100	1245	Worldwide licensing agreement for the development and commercialisation of Rigel's late-stage investigational product for rheumatoid arthritis (RA), fostamatinib disodium (R788). AstraZeneca will pay Rigel USD 100 million upfront, with up to an additional USD 345 million payable subject to development, regulatory and first sales milestones.

** When agreement was entered into*
Source: Redeye Research

It is hard to make a fair comparison between these two, however. At the time of agreement, three encouraging Phase II trials had been completed with R788/fostamatinib disodium in a total of 865 patients.

By comparison, SynAct is pursuing its Phase II trial with AP1189 in 100 patients. Even if positive data is shown in this trial, we assume a subsequent Phase III trial pursued by a partner would have to include 1000+ RA patients in order to validate the Phase II data. Consequently, we believe the relatively small Phase II study with AP1189 justifies a smaller potential deal size for SynAct.

All factors considered, our assumptions for a licensing deal on AP1189 with a partner are:

- A total potential deal value of USD 500m
- An upfront payment of USD 50m
- Milestone payments based on clinical development, regulatory achievements, and achieved sales levels
- An applied royalty rate on future sales of 15%
- The partner finances clinical development and commercialization

Likelihood of approval and timeline for reaching the market

We use a risk-adjusted likelihood of approval (from Phase II to market) of 20%. This is based on aggregated data from studies of Phase success in the autoimmune field. We assume market launch in mid-2025. We consider partner negotiations in our timeline and assume a pivotal trial is initiated at the beginning of 2022.

Probability of reaching the market for autoimmune projects

Study	Ph II-Ph III	Ph III-NDA	NDA-Market	LOA
Hay (2014)	37%	81%	76%	23%
Thomas (2016)	32%	62%	86%	17%
Average	**35%**	**72%**	**81%**	**20%**

Source: Redeye Research

AP1189: Anticipated clinical development timeline

Year	2019	2021	2022	2025	2026
AP1189	Initiation of phase II	Licensing deal	Initiation Phase III	Filing	US/EU launch

Source: Redeye Research

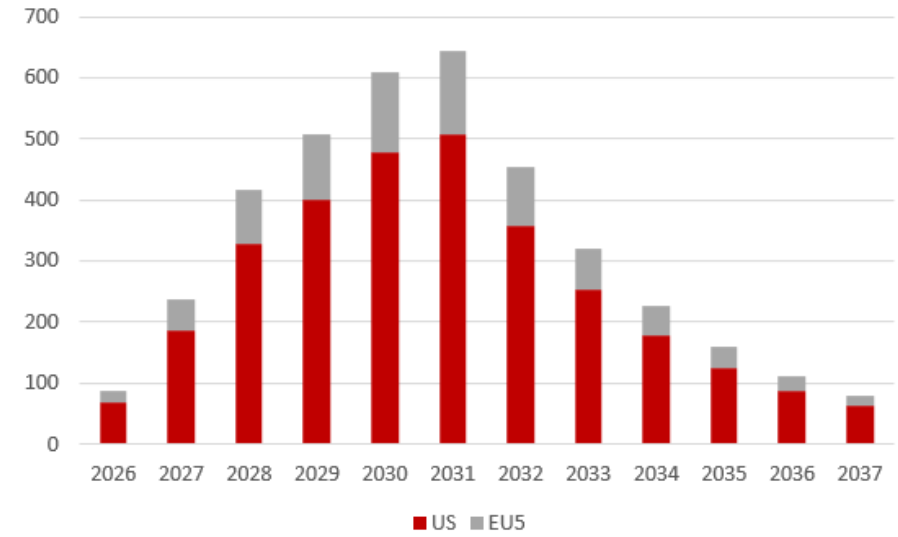
AP1189 sales model

Given the tough competition in the field of RA, the commercial success of AP1189 will be largely dependent on clinical performance in the upcoming Phase II trial and the pricing strategy if approved. Superior safety or efficacy to approved JAK inhibitors by AP1189's melanocortin-based approach would be highly encouraging considering AP1189's resolution-based therapy is the first in its class for RA. However, if AP1189's data is in line with/worse than currently approved JAK inhibitors, we believe the anticipated late market entry in 2025 will restrict its patient share, given that physicians' growing experience with JAK inhibitors would provide such products with a leg-up on AP1189.

Our base-case scenario estimates AP1189 will primarily grab market share from JAK inhibitors. While there is a possibility that AP1189 will take market share from biologics as

well, we view this as unlikely because the potential launch of biosimilar adalimumab in 2023 is likely to give payers and physicians further incentives to prescribe this rather than JAK inhibitors or AP1189.

AP1189: Estimated sales in US and EU5



Source: Redeye Research

We have included US and EU5 markets in our project valuation of AP1189. We consider patients who receive pharmacologic treatment today and had an inadequate response to MTX monotherapy as the target patient population for AP1189. We use RA prevalence data from Datamonitor for the US and EU5 markets (France, Germany, Italy, Spain, and the UK). While EU5 has a slightly larger RA population, the US is the largest market due to its higher pricing.

We assume peak sales in 2031 which translates into a ramp-up period of five years. Our estimate for sales erosion from this point relates to patent expiry. SynAct has patents on AP1189 approved until 2027 and 2028 for the EU5 and US, respectively. However, given first sales in 2026 we estimate market exclusivity until 2031. Considering the demanding competition within RA, we assume sales erosion from 2031. Our sales projections are based on 5% market penetration of the addressable patient population in the US and 3% in the EU5.

We use the currently approved JAK inhibitors Xeljanz and Olumiant as benchmark drugs when determining a reasonable price for AP1189. We consider these good pricing peers to AP1189 as they are also small molecules with an oral approach.

Today Xeljanz and Olumiant are priced fairly high at USD 34 000/year in the US, owing to encouraging Phase III data and their being among the few orally formulated alternatives for RA patients. As stated above, we forecast launch of two additional JAK inhibitors in the near term, which is likely to induce price pressure. At the time of an anticipated launch of AP1189 in 2026, we estimate prices for JAK inhibitors of about USD 25 000/year. Given no efficacy data yet for AP1189 in humans, we take a somewhat conservative stance, modelling a price of USD 20 000/year and USD 10 000/year for AP1189 in the US and EU5, respectively. As a reference point, the first-line RA drug MTX is currently priced in the USD 3 000-10 000 range in the US and EU5.

According to Datamonitor Healthcare's 2016 survey results, RA patients receiving oral formulations of a drug have a compliance rate of 69-80% depending on country. For AP1189 we choose the middle of this range and model a compliance rate of 75%.

AP1189: US&EU5 sales model	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
RA patients under treatment												
US	1,011,198	1,018,276	1,025,404	1,032,582	1,039,810	1,047,089	1,054,418	1,061,799	1,069,232	1,076,716	1,084,253	1,091,843
EU5	989,797	996,725	1,003,702	1,010,728	1,017,803	1,024,928	1,032,102	1,039,327	1,046,602	1,053,929	1,061,306	1,068,735
Target population (MTX monotherapy NR)												
US (65%)	657,278	661,879	666,513	671,178	675,876	680,608	685,372	690,169	695,001	699,866	704,765	709,698
EU5 (60%)	593,878	598,035	602,221	606,437	610,682	614,957	619,261	623,596	627,961	632,357	636,784	641,241
US												
Penetration	0.7%	1.9%	3.3%	4.0%	4.8%	5.0%	3.5%	2.5%	1.7%	1.2%	0.8%	0.6%
Treated patients	4,569	12,488	21,842	26,661	31,881	33,794	23,821	16,792	11,836	8,343	5,881	4,146
Compliance rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Pricing	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Revenue $m	**69**	**187**	**328**	**400**	**478**	**507**	**357**	**252**	**178**	**125**	**88**	**62**
EU5												
Penetration	0.4%	1.1%	2.0%	2.4%	2.9%	3.0%	2.1%	1.5%	1.0%	0.7%	0.5%	0.4%
Treated patients	2,477	6,770	11,841	14,453	17,283	18,320	12,914	9,103	6,417	4,523	3,188	2,248
Compliance rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Pricing	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Revenue $m	**19**	**51**	**89**	**108**	**130**	**137**	**97**	**68**	**48**	**34**	**24**	**17**
Total revenue $m	**87**	**238**	**416**	**508**	**608**	**644**	**454**	**320**	**226**	**159**	**112**	**79**

Source: Redeye Research

Valuing the opportunity

We use a risk-adjusted discounted cash flow (DCF) model to value SynAct. We include only AP1189 for rheumatoid arthritis in our valuation Applying a 20% likelihood of reaching the market, we derive a base case valuation of SEK 13 per share - about 80% above the current share price.

Our model assumes that SynAct will out-license AP1189 for the US and European markets and receive 15% royalties on sales. As we include no upfront or milestone payments from potential out-licensing of AP1189 in Asia, this represents further upside potential with non-dilutive financing to support development of pipeline indications.

Synact: Valuation						
Project	**Indication**	**Stage**	**Launch**	**Peak sales ($m)**	**Probability**	**Value, r-adj (MSEK)**
AP1189	Rheumatoid arthritis	Phase II	2026	644	20%	190
				Net cash		(6)
				Total		**184**
				Share outst.		15
				Value per share		**13**

Source: Redeye Research

Given the large patient population in RA, the impact on SynAct's fair value is highly dependent on our anticipated pricing and peak penetration for AP1189. Below we show sensitivity analyses for US market penetration and pricing against different WACC levels.

Share price sensitivity analysis - US pricing and peak penetration						
		Peak penetration, US				
		1%	3%	5%	7%	10%
US pricing	10000	5	7	8	10	13
	15000	6	8	11	13	17
	20000	6	9	**13**	16	21
	25000	6	11	15	19	25
	30000	7	12	17	22	29

Source: Redeye Research

Share price sensitivity analysis - EU pricing and peak penetration						
		WACC				
		13%	14%	15%	16%	17%
US pricing	10000	10	9	8	8	7
	15000	13	12	11	9	9
	20000	15	14	**13**	11	10
	25000	18	16	15	13	12
	30000	21	19	17	15	14

Source: Redeye Research

Share price sensitivity analysis - EU pricing and peak penetration						
		WACC				
		13%	14%	15%	16%	17%
Peak penetration, US	1%	7	7	6	5	5
	3%	11	10	9	8	8
	5%	15	14	**13**	11	10
	7%	20	18	16	14	13
	10%	26	23	21	19	17

Source: Redeye Research

To provide a further dynamic view of our valuation, we model pessimistic bear case and optimistic bull case scenarios. The following assumptions apply to all three scenarios:

- Risk-adjusted likelihood of approval of 20%
- Tax rate of 22%
- 14.7 million shares outstanding
- WACC of 15 percent, based on both quantitative and qualitative factors (see below)

Bear Case SEK 2

- US penetration of 2%
- EU5 penetration of 1%
- US pricing of USD 20,000
- EU5 pricing of USD 10,000
- Total licensing deal value of USD 300 million in 2023
- US and EU5 launch in 2028

Base Case SEK 13

- US penetration of 5%
- EU5 penetration of 3%
- US pricing of USD 20,000
- EU5 pricing of USD 10,000
- Total licensing deal value of USD 500 million in 2021
- US and EU5 launch in 2026

Bull Case SEK 30

- US penetration of 8%
- EU5 penetration of 4%
- US pricing of USD 25,000
- EU5 pricing of USD 12,500
- Total licensing deal value of USD 600 million in 2021
- US and EU5 launch in 2026

In our bear case AP1189 fails to show positive data in the current Phase II study. SynAct raises capital to pursue further studies before striking a partner deal.

Peer valuation

Measured against similar companies and those at the same stage of development, SynAct trades at a discount. We highlight Enterprise Value (EV; market value minus net cash) as potentially the most relevant figure.

While acknowledging differences in project potential, pipeline and risk, SynAct's valuation is lower and appears attractive compared to its peers.

Peer group valuation (MSEK)

Company	Market cap	Share Price*	Net Cash	EV	No. of Projects	Dev. Stage**
Redwood Pharma	162	11.00	-1	163	1	Phase II
Follicum	193	2.86	3	190	2	Phase II
Lidds	429	18.10	12	417	2	Phase II
Oncology Venture	168	2.37	-14**	176**	4	Phase II
SynAct Pharma	**102**	**6.96**	**-11**	**113**	**1**	**Phase II**
Asarina Pharma	405	24.90	102	303	1	Phase II
Average	**243**			**237**		
Median	**181**			**190**		

**Share prices updated 190927*

*** Conversion rate 1DKK=1,43SEK*

Appendix

Patent portfolio

Patents	
Area	**Valid until**
Australia	6/11/2027
Canada	6/11/2027
China	6/11/2027
Hong Kong	6/11/2027
India	6/11/2027
Japan	6/11/2027
Mexico	6/11/2027
New Zealand	6/11/2027
South Africa	6/11/2027
USA	3/20/2028

Source: SynAct Pharma

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

The management team consists of four people with extensive experience in drug development and deal making. The CEO, CFO and CSO has together taken a compound through Phase I and II successfully in both Action Pharma and TXP Pharma. With promising Phase II data at hand, they managed to deliver solid deals with large pharmaceutical companies.

Business: 2

We believe AP1189 has a large commercial potential in RA, but it is still in very early stages of development and many years remain until recurring revenues can be generated.

Financials: 1

The company does not yet have any products generating sales, and we don't assume any recurring revenues in the foreseeable future. Current cash position is low and we expect a rights issue to take place during H2 2019.

INCOME STATEMENT	2017	2018	2019E	2020E	2021E
Net sales	0	0	0	0	168
Total operating costs	0	-28	-35	-48	-29
EBITDA	0	-28	-35	-48	139
Depreciation	0	0	0	0	0
Amortization	0	0	0	0	0
Impairment charges	0	0	0	0	0
EBIT	0	-29	-35	-48	139
Share in profits	0	0	0	0	0
Net financial items	0	0	-2	0	0
Exchange rate dif.	0	0	0	0	0
Pre-tax profit	0	-28	-37	-48	139
Tax	0	5	6	7	-31
Net earnings	0	-24	-31	-41	109

BALANCE SHEET	2017	2018	2019E	2020E	2021E
Assets					
Current assets					
Cash in banks	0	7	0	0	41
Receivables	0	0	0	0	0
Inventories	0	0	0	0	0
Other current assets	0	6	6	6	6
Current assets	0	13	6	6	47
Fixed assets					
Tangible assets	0	0	0	0	0
Associated comp.	0	0	0	0	0
Investments	0	0	0	0	0
Goodwill	0	0	0	0	0
Cap. exp. for dev.	0	0	0	0	0
O intangible rights	0	1	0	0	0
O non-current assets	0	0	0	0	0
Total fixed assets	0	1	0	0	0
Deferred tax assets	0	0	0	0	0
Total (assets)	0	14	6	6	47
Liabilities					
Current liabilities					
Short-term debt	0	0	27	67	0
Accounts payable	0	3	0	0	0
O current liabilities	0	1	1	1	1
Current liabilities	0	4	27	68	1
Long-term debt	0	0	0	0	0
O long-term liabilities	0	0	0	0	0
Convertibles	0	0	0	0	0
Total Liabilities	0	4	27	68	1
Deferred tax liab	0	0	0	0	0
Provisions	0	0	0	0	0
Shareholders' equity	0	10	-21	-62	47
Minority interest (BS)	0	0	0	0	0
Minority & equity	0	10	-21	-62	47
Total liab & SE	0	14	6	6	47

FREE CASH FLOW	2017	2018	2019E	2020E	2021E
Net sales	0	0	0	0	168
Total operating costs	0	-28	-35	-48	-29
Depreciations total	0	0	0	0	0
EBIT	0	-29	-35	-48	139
Taxes on EBIT	0	5	5	7	-31
NOPLAT	0	-24	-30	-41	109
Depreciation	0	0	0	0	0
Gross cash flow	0	-23	-30	-41	109
Change in WC	0	-2	-3	0	0
Gross CAPEX	0	-1	1	0	0
Free cash flow	0	-27	-32	-41	109

CAPITAL STRUCTURE	2017	2018	2019E	2020E	2021E
Equity ratio	0%	74%	-344%	-1,014%	99%
Debt/equity ratio	0%	0%	-127%	-109%	0%
Net debt	0	-7	27	67	-41
Capital employed	0	3	6	6	6
Capital turnover rate	0.0	0.0	0.0	0.0	3.5

GROWTH	2017	2018	2019E	2020E	2021E
Sales growth	0%	0%	150%	0%	1,679,9
EPS growth (adj)	0%	0%	33%	31%	-366%

PROFITABILITY	2017	2018	2019E	2020E	2021E
ROE	0%	0%	0%	0%	0%
ROCE	0%	-551%	-444%	-858%	531%
ROIC	0%	0%	-938%	-729%	1942%
EBITDA margin	0%	-705000%	-353233%	-480567%	83%
EBIT margin	0%	-712500%	-353233%	-480567%	83%
Net margin	0%	-590000%	-312998%	-408482%	65%

DATA PER SHARE	2017	2018	2019E	2020E	2021E
EPS	0.00	-1.57	-2.09	-2.72	7.25
EPS adj	0.00	-1.57	-2.09	-2.72	7.25
Dividend	0.00	0.00	0.00	0.00	0.00
Net debt	0.00	-0.47	1.77	4.50	-2.75
Total shares	0.00	15.00	15.00	15.00	15.00

VALUATION	2017	2018	2019E	2020E	2021E
EV	0.0	-7.1	146.6	187.4	78.7
P/E	0.0	0.0	-3.8	-2.9	1.1
P/E diluted	0.0	0.0	-3.8	-2.9	1.1
P/Sales	0.0	0.0	12,000.0	12,000.0	0.7
EV/Sales	0.0	-1,775.0	14,660.0	18,744.8	0.5
EV/EBITDA	0.0	0.3	-4.2	-3.9	0.6
EV/EBIT	0.0	0.2	-4.2	-3.9	0.6
P/BV	0.0	0.0	-5.7	-1.9	2.6

SHARE PERFORMANCE		GROWTH/YEAR	16/18E
1 month	-13.9 %	Net sales	58.1 %
3 month	-14.7 %	Operating profit adj	0.0 %
12 month	-11.9 %	EPS, just	0.0 %
Since start of the year	4.8 %	Equity	0.0 %

SHAREHOLDER STRUCTURE %	CAPITAL	VOTES
Thomas Jonassen	15.2 %	15.2 %
Quantass ApS	9.5 %	9.5 %
Nordnet Pensionsförsäkring	7.4 %	7.4 %
Avanza Pension	6.9 %	6.9 %
Torbjörn Bjerke	5.2 %	5.2 %
Henrik Stage	3.5 %	3.5 %
A.M. Karlsson i Kvicksund AB	3.4 %	3.4 %
Omt Invest A/S	2.2 %	2.2 %
Robert Sahlin	2.0 %	2.0 %
Dory Gevryie	1.7 %	1.7 %

SHARE INFORMATION	
Reuters code	SYNACT.st
List	Spotlight Stock Market
Share price	8.0
Total shares, million	15.0
Market Cap, MSEK	120.0

MANAGEMENT & BOARD
CEO
CFO
IR
Chairman

FINANCIAL INFORMATION

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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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Redeye Rating (2019-10-01)

Rating	People	Business	Financials
5p	11	8	1
3p - 4p	67	55	28
0p - 2p	12	27	61
Company N	90	90	90

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Ludvig Svensson owns shares in the company: No
Klas Palin 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.