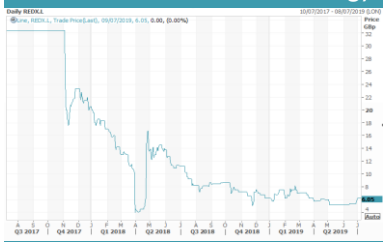
Pharmaceuticals & Biotechnology



Source: Refinitiv

Market data	
EPIC/TKR	**REDX**
Price (p)	6.1
12m High (p)	11.2
12m Low (p)	4.8
Shares (m)	126.5
Mkt Cap (£m)	7.7
EV (£m)	4.0
Free Float*	81%
Market	AIM

**As defined by AIM Rule 26*

Description

Redx Pharma (REDX) is focused on the discovery and development of proprietary, small molecule therapeutics to address areas of high unmet medical need, in cancer and fibrosis. The aim is to develop putative drugs through early trials and then to partner them for late-stage development and commercialisation.

Company information

CEO	Lisa Anson
CFO	Dr James Mead
Chairman	Iain Ross
	+44 1625 469 900
	www.redxpharma.com

Key shareholders

Directors	0.6%
Jon Moulton	18.2%
Seneca Partners	12.6%
AXA	9.7%
Aviva	8.2%
P & T Blackmore	4.0%

Diary

3Q'19	ROCK2 candidate nomin.
2H'19	RXC004 initial clinical update

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REDX PHARMA

Phase I trial resumed

REDX is a clinical-stage R&D company focused on drugs targeting oncology and fibrotic disease. 2018 was a year that reset the benchmarks – new management team, restructured organisation focused on two therapeutic areas, and a clean balance sheet. 2019 will be characterised by a number of major milestones, including the recent restart of the Phase I/IIa trial with RXC004 with a revised protocol, and we note that RXC006 has been nominated as the first development candidate in the anti-fibrotic programme. Meanwhile, operating costs have been reduced while management considers all options available to strengthen its balance sheet.

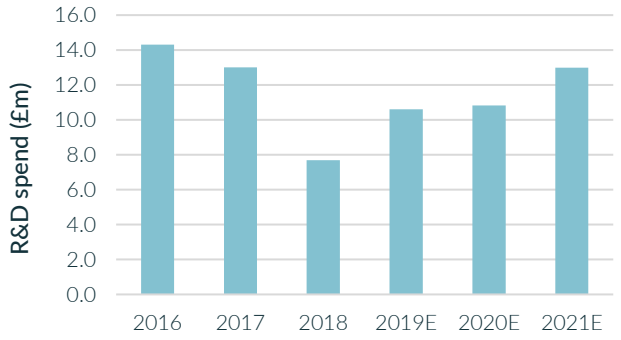
- **Strategy:** REDX is focused on the discovery and early clinical development of small molecule therapeutics in oncology and fibrotic disease. Its strategy is to develop assets through proof-of-concept clinical trials and then partner them for late-stage development and commercialisation.
- **Interims:** REDX took the opportunity provided by its interim results to update the market on the advancement of its pipeline and financial position. The main news is the start of the trial with RXC004 with a revised protocol. REDX has also announced a £2.5m short-term loan. Net cash at 31 March was £3.3m.
- **Trial re-started:** The Phase I trial with a reformulation of the porcupine inhibitor RXC004 has been resumed using a revised protocol, and REDX has indicated that the first patient has initiated, and additional patients are planned for enrolment. Initial safety and tolerability results are anticipated in 2H'19.
- **Risks:** REDX has emerged from fiscal 2018 in a clean position with a focused strategy. The company has limited cash resources, boosted by a short-term shareholder loan, while it continues to explore the long-term funding of the group to advance the proof-of-concept trials for its development programmes.
- **Investment summary:** The business plan focuses cash resources on progressing its drug leads in oncology and fibrotic disease to proof-of-concept early clinical development. Big pharma has been shown to pay substantial prices for good science and novel and/or de-risked assets with clinical data, reinforcing REDX's strategy, potentially generating good returns and enhancing shareholder value.

Financial summary and valuation

Year-end Sept (£m)	2016	2017	2018	2019E	2020E	2021E
Other income	2.38	1.29	1.32	1.00	1.00	1.00
R&D investment	-14.32	-13.00	-7.70	-10.61	-10.83	-12.99
SG&A (corp. cost)	-2.21	-5.70	-3.30	-3.04	-3.22	-3.38
Underlying EBIT	-14.15	-17.41	-9.68	-12.65	-13.04	-15.37
Underlying PBT	-14.61	-17.74	-9.66	-12.72	-13.10	-15.37
Statutory PBT	-15.41	1.65	-10.15	-13.03	-13.42	-15.71
R&D tax credit	0.64	-0.12	1.30	1.79	1.83	2.20
Underlying EPS (p)	-17.83	-15.80	-6.61	-3.95	-2.64	-3.09
Statutory EPS (p)	-19.81	1.35	-6.99	-4.06	-2.72	-3.23
Disposals	0.00	30.47	0.00	0.00	0.00	0.00
Net cash/(debt)	3.76	23.81	6.47	8.95	-2.28	-16.55
Capital increases	9.30	11.07	0.00	14.10	0.00	0.00

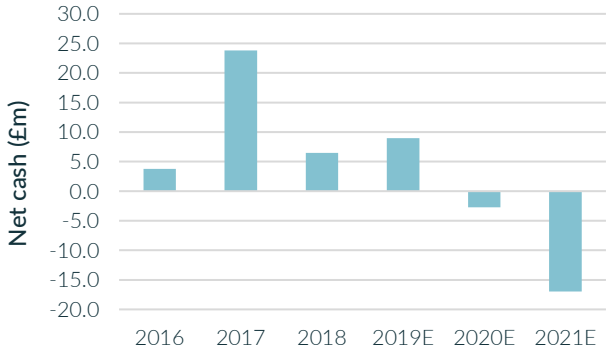
Source: Hardman & Co Life Sciences Research

R&D investment



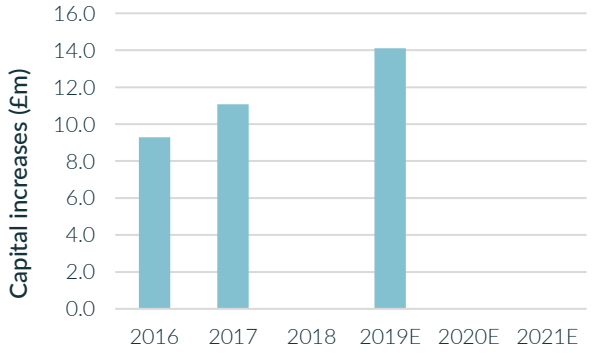
- R&D investment is expected to increase in light of the restart of the Phase I/IIa trial and additional late preclinical work for other programmes
- Savings from the strategic restructuring will be reallocated to fund two clinical trials
- Discovery programmes will still support the core areas, but less investment will be made overall in early projects

Net cash/(debt)



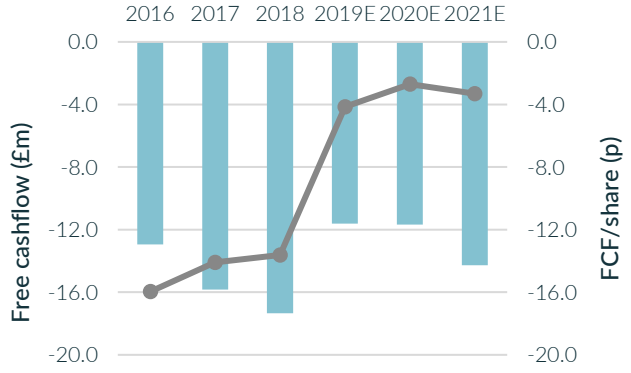
- Net cash at 31 March 2019 was £3.3m
- Strategic restructuring has reduced operating expenses by a third
- The net cash position mainly reflects investment in R&D and working capital requirements
- REDX will have enough cash until 4Q'19 financial year.

Capital increases



- Cashflow forecasts indicate that more capital will be needed to fund the planned clinical trial programmes and repay the £2.5m loan
- Forecasts assume that gross new funds of £15m will be raised in fiscal 2019
- Further funds will also be required in 2020, which could come in the form of a licensing deal or equity funding

Free cashflow and FCF/share



- The average monthly cashburn of the streamlined organisation is estimated at ca.£0.65m
- Investment in clinical trials (ca.£5m per programme) is in addition, but dependent on timing of commencement
- Forecasts take account of a predicted capital increase in fiscal 2019, but do not reflect the need for any further increase in 2020

Source: Company data; Hardman & Co Life Sciences Research

Interim results summary

Key features

Development programmes

- **RXC004:** The Phase I trial with a reformulation of the porcupine inhibitor RXC004 has been resumed with a lower starting dose (0.5mg). REDX has now indicated that the first patient has initiated on the study on time and currently, additional patients are being enrolled into this first arm of the study. Initial safety and tolerability results are anticipated in 2H'19, with full results due in 2020.
- **RXC006:** REDX's main anti-fibrotic programme targeting idiopathic pulmonary fibrosis (IPF) is in late preclinical development. The lead candidate is progressing into manufacturing and toxicity studies in order to bring it to the clinic in 1H'20, as scheduled.
- **ROCK2 programme:** Development candidate nomination is expected in 3Q'19, with the lead compound showing inhibition of the fibrosis features in three independent disease models of liver, kidney and lung fibrosis.
- **Pan-RAF programme:** As initially suggested, REDX has released that an exclusive contract period has been signed with an undisclosed partner for a licence agreement regarding the pan-RAF programme, which has not been actively progressed.

Financial highlights

- **R&D:** In 1H'19, investment in R&D was slightly lower (-4%) at -£3.47m (-£3.62m), about £0.5m better than forecast. It represents all the preparation work for RXC004 to re-enter the clinic and the preclinical work for its three other assets.
- **Administration:** SG&A costs remained broadly flat compared with last year at -£1.49m (-£1.55m), despite some senior appointments (e.g. the CFO), highlighting the capital conservation.
- **Tax:** REDX received an R&D tax credit of £1.7m from HMRC during the period.
- **Net cash:** At 31 March 2019, REDX had net cash of £3.31m, down from £6.47m at the beginning of the period. No new capital was raised during the first six months of fiscal 2019.
- **Loan agreement:** Management has agreed a short-term loan agreement of up to £2.5m with REDX's largest shareholder, Jon Moulton. This will be used to extend the cash runway to the end of 2019, by which time other long-term funding, currently under active discussion, is expected to be in place.

REDX 2019 interim results – actual vs. expectations

Year-end Sept (£m)	1H'18 actual	1H'19 actual	Growth %	1H'19 forecast	Delta Δ
R&D spend	-3.62	-3.47	-4%	-4.00	+0.53
Administration	-1.55	-1.49	-4%	-1.50	+0.01
Underlying EBIT loss	**-4.41**	**-4.94**	**+12%**	**-5.50**	**+0.56**
Tax credit	0.34	1.76		1.20	
Underlying net loss	**-4.05**	**-3.21**	**-21%**	**-4.30**	**+1.10**
Net cash/(debt)	10.32	3.31		2.20	+1.10

Figures may not add up exactly due to rounding
Source: Hardman & Co Life Sciences Research

Corporate highlights

- **Board appointment:** Dr James Mead was appointed CFO in February 2019.

R&D programme update

Key milestones

Significant progress was made in all REDX's different research programmes during the interim period. Most importantly, re-initiation of the Phase I/IIa trial with the porcupine inhibitor, RXC004, in advanced cancer patients with solid tumours has gone underway. The follow-up programme with RXC006 is in preclinical development for the treatment of IPF, with first-in-man trials expected in 1H'20. Also, there has been progress in both ROCK programmes, such that nomination of the development candidate for non-alcoholic steatohepatitis (NASH) – ROCK2 – and selection of a development candidate in Crohn's disease – gastro-intestinal (GI)-targeted ROCK – are expected shortly.

In addition to RXC006, REDX has ambitions to progress up to two other anti-fibrotic assets into development in 2019, with the aim of entering the first into the clinic in 2020.

REDX near-term milestones and value drivers to 2020

		2018	2019	2020
Oncology	RXC004	✓ *1Q First patient treated in Phase 1 study* ✓ *1H Read-out on pre clinical PoC studies in fibrosis* ✓ *2H MHRA approved revised protocol*	✓ 1H Phase 1 re-start 2H ESMO Wnt pathway updates 2H Phase 1 initial cohort safety data	1H Phase 1 safety data readout - monotherapy - combination 2H Phase 2 programmes commence
Anti-Fibrotics	PORCN/ RXC006	✓ *Patents filed, data presented* ✓ *Development candidate selected*	1H Manufacturing 2H GLP toxicity	1H Clinic ready
	ROCK2 selective	✓ *Patents filed, data presented* ✓ *Series assessment ongoing*	1H In vivo data completed 2H Development candidate selected for NASH	2H Clinic ready
	GI targeted ROCK	✓ *Patents filed, data presented* ✓ *Series assessment ongoing*	2H Development candidate selected for Crohn's related fibrosis	2H Clinic ready

Source: REDX, adapted from 2018 FY results presentation

Focus on the clinical stage

REDX's pipeline focus is on two major disease areas in oncology and fibrosis

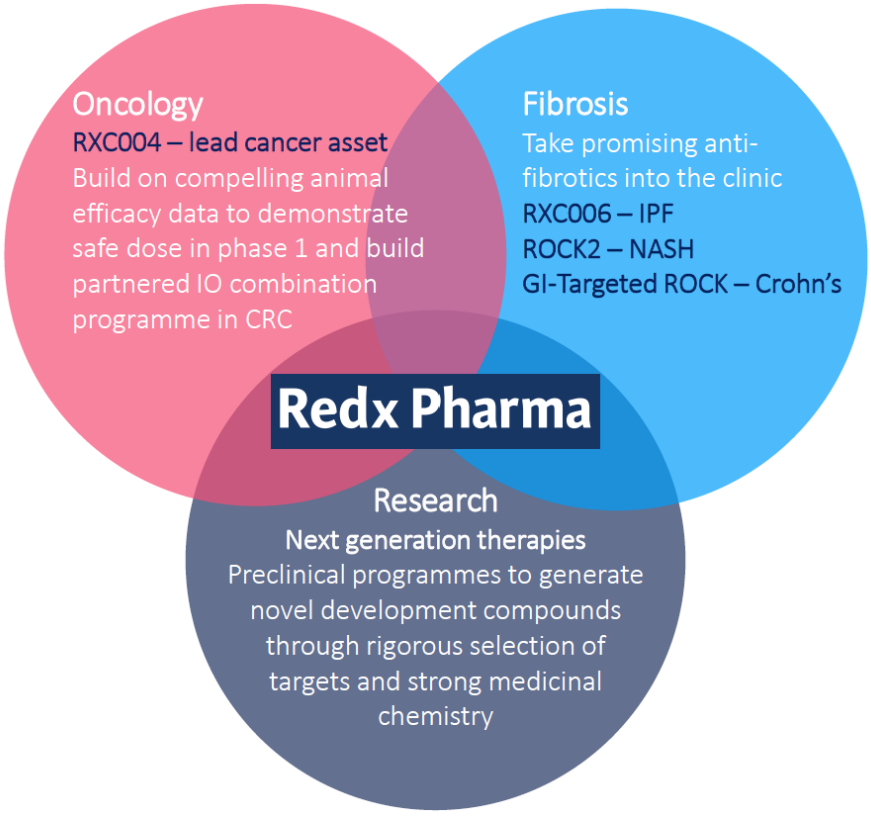
Strategy

REDX is advancing a focused and streamlined pipeline, leveraging its proven expertise in medicinal chemistry and driving innovative products in two major disease areas (oncology and fibrosis) with high unmet medical need:

- **Oncology:** The Phase I/IIa clinical trial with the lead programme, RXC004, re-commenced on schedule during 1H'19.
- **Fibrosis:** With three programmes in late research / preclinical development for three different indications, RXC006 is the most advanced, having been nominated as the development candidate in IPF, with the ROCK2 and GI-targeted ROCK programmes being progressed in parallel.

- **Leverage medicinal chemistry expertise:** REDX has maintained a strong medicinal chemistry group with expertise in progressing core assets towards the clinic, as exemplified by the porcupine inhibitors RXC004 and REDX006 in oncology and fibrosis, respectively.

Three inter-related investment pillars



Source: REDX, May 2019 corporate presentation

- **Partnering:** To be undertaken at the clinical or preclinical stage, when appropriate, to enable additional development and increase shareholder value. Currently, REDX is in an exclusive contracting period for a licence agreement with an undisclosed partner for the pan-RAF programme in late lead optimisation.

Meanwhile, REDX has managed to reduce and control costs through prioritisation of its pipeline, effective resolution of financial and tax issues, and a reduced footprint at its Alderley Park location.

Advancing the pipeline

Maximising shareholder value per product

The overall R&D strategy consists of a focused pipeline to develop small molecule therapeutics from discovery to Phase I and up to Phase II proof-of-concept trials in oncology and fibrotic diseases, with the possibility of out-licensing these assets for late-stage development and commercialisation. This will maximise shareholder value per product.

REDX aims to bring research programmes to development candidate nomination in a relatively short time frame (18 to 36 months) by leveraging its strong medicinal chemistry capability and delivering clinical proof-of-concept. Pipeline development is based on two key characteristics:

- Work on biologically and/or clinically validated targets, with the aim of being first-in-class or best-in-class, through the development of in-house programmes and the acquisition/in-licensing of assets from other parties.
- Work on commercially attractive targets with high unmet medical need.

REDX's R&D pipeline

	Target/ Product	Indication	Research	Preclinical (CTA/IND enabling)	Clinical (Phase 1)	Milestone Date
RXC004	**Porcupine**	Combination with PD1 / PD-L1 in solid tumour (colorectal cancer)				Phase 1 safety completion – H1 20
Anti-fibrotics	**Porcupine** (RXC006)	Idiopathic pulmonary fibrosis (IPF)				Preclinical 2019 Clinic ready 2020
	ROCK2 selective	Non-alcoholic Steatohepatitis (NASH)				Preclinical development candidate H2 19 Clinic ready H2 20
	GI-targeted ROCK	Crohn's Related Fibrosis				Preclinical development candidate H2 19 Clinic ready H2 20
Research	**Validated targets**	Oncology and Fibrosis				Lead Optimisation with development candidate in 2020

Redx Pipeline as of May 30, 2019

Source: REDX

In the near term, three programmes are emerging from the preclinical pipeline:

- **RXC004:** The porcupine inhibitor entered the clinic in 1H'19 with a Phase I/IIa trial in colorectal cancer, following a revised protocol at a lower dose.
- **RXC006:** This differentiated porcupine inhibitor has been selected as the development candidate in IPF.
- **ROCK2:** Development candidate for first-in-man trial is expected to be nominated in2H'19.

Precedent was set by the successful disposal of its preclinical BTK programme for $40m (£30.5m) to Loxo Oncology in July 2017. The price achieved was in line with the average for preclinical small molecule oncology projects, but without the prospect of development milestones or royalty payments. By developing an asset even further along the pipeline to include a clinical data package, even greater fees and milestones could be expected. The management team is open also to partnering programmes at an earlier stage, if considered appropriate.

Oncology assets

RXC004: trial re-started

Analysis of data from the original trial, starting at an oral dose of 10mg, suggested a positive trend with RXC004:

- the drug was well absorbed;
- it has a greater drug exposure due to a longer human half-life;
- it had only on-target side-effects; and
- it had strong target engagement.

The data also demonstrated that the drug possessed a different pharmacokinetic (PK) profile in humans compared with that seen in animal studies, with a slightly higher maximal concentration (C_{max}) in the blood system and an extended plasma half-life. Consequently, the protocol has been revised to maintain the drug concentration within the therapeutic window.

Phase I/IIa clinical trial

Phase I/IIa trial is divided in three parts: dose escalating study, dose expanding study and dose expansion study, in combination with a checkpoint inhibitor

The new trial will enrol a total of ca.50 patients at up to five sites (Manchester, Oxford, Newcastle, and The Marsden and Guys hospitals in London), with Natalie Cook, at the NHS Foundation Trust in Manchester, the Principal Investigator. This first-in-man study represents a major milestone for the company, being the first programme that REDX has advanced since incorporation in 2010 from discovery to the clinic.

This Phase I/IIa clinical trial is focusing on advanced cancer patients with solid tumour cancers, who have a poor prognosis. The study will comprise three parts, as follows.

- **Phase Ia:** a multi-arm dose-escalating study of three to six patients in each arm, from 0.5mg to 3mg, designed to assess the safety and tolerability of RXC004 in advanced cancer patients with solid tumours, as a single agent, and to establish the optimal dose for Phase Ib/IIa.
- **Phase Ib:** a dose expansion cohort to assess the efficacy of RXC004 as a monotherapy in a biomarker-selected population.
- **Phase IIa:** an expansion arm of RXC004 in combination with immuno-oncology agents such as checkpoint inhibitor (CPI) anti-PD-1 in Wnt selected colorectal cancer patients.

Initial safety and tolerability data expected in 2H'19

The Phase Ia is expected to take around 12 months in total, but the release of safety and tolerability data could be made available during 2019.

First patient being dosed

Trial with RCX004 has re-started with a modified protocol…

Following the period of reformulation and preparation, REDX has now re-started the Phase I/IIa clinical trial on schedule, with the revised protocol using a new starting dose of 0.5mg. Safety will be the driver of the first part of the study, with enhanced monitoring.

…with first patient now initiated cycle 1

Management has indicated that the first patient has now initiated the first 21-day cycle of dosing of daily RXC004 oral treatment. This is a crucial moment for REDX. Based on the outcomes observed with this initial patient, two more patients are planned for enrolment in this first cohort.

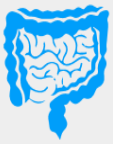
Anti-fibrotic assets

Fibrotic diseases

The second area of focus is the large spectrum of fibrotic disease with high unmet medical needs. With three programmes, REDX is aiming to encompass a vast range of fibrotic conditions that severely affect the quality of life and could also be life-threatening, e.g. IPF.

Targeting fibrotic diseases

Idiopathic Pulmonary Fibrosis (IPF)
Product: Porcupine



Crohn's related fibrosis
Product: GI-targeted-ROCK

Non-alcoholic Steatohepatitis (NASH)
Product: ROCK2

Source: adapted from REDX

It is worth noting that the fibrotic mechanism that affects different organs usually follows the same pathway. This means that having a potent and effective compound targeting the fibrotic pathway may have the same effect in multiple organs affected by the scarring. This is what REDX disclosed in its ROCK2 selective programme, where the lead compounds provide anti-fibrotic features in the liver, the lung and the kidney.

RXC006: porcupine inhibitor in IPF

Development candidate nomination

RXC006 is first development candidate in the anti-fibrotic programme.

First-in-man trial anticipated in 1H'20

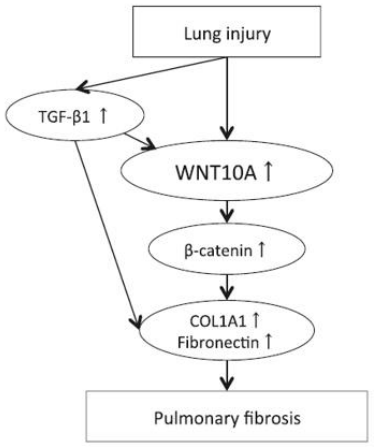
REDX has nominated its first development candidate from its fibrosis programmes. RXC006 is a porcupine inhibitor and a potential first-in-class treatment for IPF. This stage is expected to last around a year, since REDX has indicated that the product has been successfully progressed into manufacturing and toxicity studies. REDX aims to start a first-in-man trial in 1H'20.

RXC006 is an orally bioavailable and once/twice daily administered small molecule porcupine inhibitor that acts upstream in the Wnt pathway, which is known to be involved in the fibrosis process in the lung, liver and kidney.

Distinct porcupine inhibitor

REDX is developing a new series of porcupine inhibitor compounds that are distinct from the RXC004 series for colorectal cancer and protected by a different patent family. RXC006 was selected because it had shown encouraging results in suppressing the Wnt pathway, which is also involved in fibrosis in several *in vivo* disease models of lung, kidney and liver. It has the potential to be first-in-class, with the aim of treating IPF, a progressive and life-threatening condition with very poor prognosis. Animal studies have demonstrated RXC006 to be safe and well tolerated and with a PK profile that will allow flexibility in dosing. REDX believes that its porcupine inhibitor may be effective in patients with more severe IPF, where current therapy is ineffective.

Lung fibrosis



Source: Oda et al, 2016[1]

Porcupine programme for IPF

IPF is a chronic, progressive, fibrotic disorder of the lower respiratory tract that typically affects adults over the age of 40. It is the most common interstitial lung disease seen by pulmonologists. There is currently no cure for IPF. The five-year survival rate is around 20%, according to the UK's National Health Service (NHS), and the median survival in the US is estimated at three to four years after diagnosis (National Institute of Health). The standard-of-care is just to relieve the symptoms as much as possible and slow down the scarring of the lungs – i.e. simply to slow down progression of the disease. In addition to a healthy diet, fitness, and eventually oxygen support and lung transplant, the current treatment includes the use of medications such as:

- **Esbriet** (pirfenidone, Roche), approved in the US (2014) and Europe (2011) and expected to have sales in 2018 of $950m, giving cumulative sales since launch of ca.$3.3bn. This drug helps to slow the development of scarring in the lungs by reducing the activity of the immune system and the lung fibrosis through down-regulation of the production of growth factors and procollagens I and II.
- **Ofev/Vargatef** (nintedanib, Boehringer Ingelheim), approved in the US (2014) and Europe (2015), and generated cumulative sales in excess of $3.2bn to end-2018. It works by targeting the vascular endothelial growth factor receptor, fibroblast growth factor receptor and platelet-derived growth factor receptor.

Several pulmonary and non-pulmonary comorbidities are associated with IPF, including emphysema, lung cancer, cardiovascular disease, gastroesophageal reflux disease and depression.

Potential Phase I/IIa study in IPF

Starting in 2020, the Phase I/IIa trial protocol could be divided into three main phases:

- **Phase Ia:** a single ascending dose (SAD) study in healthy volunteers to assess safety and pharmacokinetics.
- **Phase Ib:** a multiple ascending dose (MAD) in IPF patients, where safety and signs of early efficacy (pharmacodynamic data) will be assessed.
- **Phase IIa:** this phase will enrol IPF patients to study effects on lung function and would probably start during 2021.

ROCK2 programme

Second anti-fibrotic programme targeting ROCK2 expected to enter clinic in 2020

The ROCK2 programme is at a late lead optimisation stage, and as ROCK2 has a central role in fibrotic and inflammatory pathways that are conserved across organs, REDX's ROCK2 inhibitors could potentially treat a large spectrum of diseases. The benefit of having a potent selective ROCK2 inhibitor is that systemic anti-fibrotic effects can be achieved without the cardiovascular side effects seen with pan-ROCK1/2 inhibition. While the prime focus of the ROCK2 programme is on NASH, REDX is also building up *in vivo* efficacy evidence of its ROCK2 inhibitor in kidney and lung fibrosis. REDX expects to enter the clinic in 2020 in NASH.

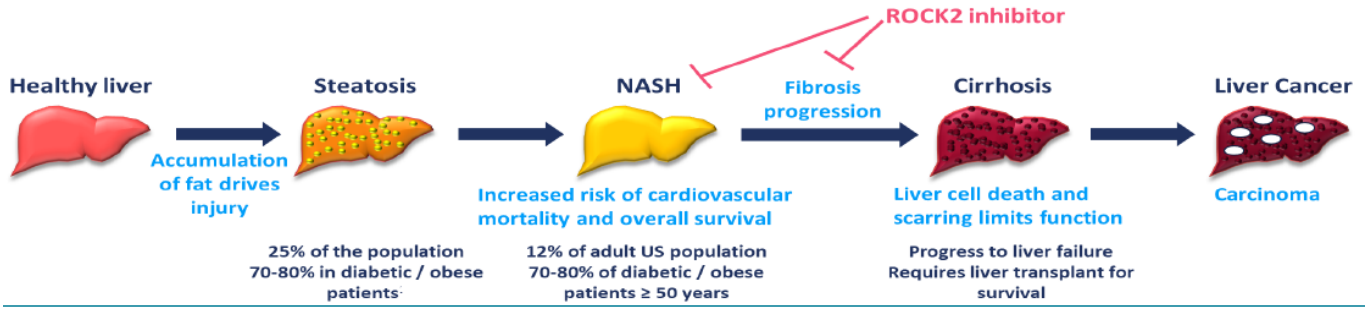
ROCK2 inhibitor in NASH

NASH is the main focus for the ROCK2 programme, where there are currently no approved therapies to stop the progression of, and then potentially reverse, liver fibrosis. NASH stems from the steady build-up of fat in the liver, which can trigger inflammation and, eventually, scarring and cirrhosis.

[1] Oda et al, *Respiratory Research*, 2016, 17:39.

Existing treatments are limited, targeting diet intervention and medications to reduce cholesterol, triglycerides and blood pressure, and to control diabetes. There are only a few therapies currently in clinical development that aim to target the fibrosis process and REDX's ROCK2 inhibitor will be one of them. The main complication of liver fibrosis is the progression of NASH into liver cirrhosis. Patients with liver cirrhosis have permanent scarring and hardening of the liver, complete loss of function, and require transplantation. In addition, cirrhosis can ultimately lead to liver cancer.

Liver disease progression



Source: REDX, Investor presentation 2018

The ROCK2 inhibitor demonstrated a good preclinical profile

REDX has indicated that its orally available ROCK2 inhibitor demonstrated a good preclinical profile in line with Kadmon's ROCK2 inhibitor KD025, currently in Phase II/III trials in multiple indications: chronic graft-versus-host disease, IPF and scleroderma. Kadmon indicated, in its Phase II study, that KD025 slowed the decline in lung function over 24 weeks of treatment and that it was well tolerated, with no drug-related serious adverse event. This represents a great endorsement for REDX in treating fibrotic conditions with ROCK2 inhibition. REDX aims to enter into the preclinical development stage in 2H'19, with a view to being in the clinic in 2020.

REDX close to announcing clinical development candidate

Snapshot of the NASH market

NASH condition is a high unmet medical need, with no drug approved yet

The overall NASH prevalence in the adult population of developed countries has been estimated at as high as 12% and is linked with obesity. Also, a consensus of several market research reports indicated that the NASH market is expected to reach $25bn by 2025. As yet, no drug has been approved, and R&D activity to find a treatment for NASH is crowded, with an estimated 158 companies investigating 195 pipeline products. While four companies are progressing Phase III trials, many believe that the key in NASH therapy will reside in the combination of drugs.

Phase III products for the treatment of NASH

Company	Product	Target	Result expected
Allergan	Cenicriviroc	CCR2 and CCR5 inhibitors	? / expected by market in 2021
Genfit	Elafibranor	PPARα/δ agonist	Around end-2019
Gilead	Selonsertib	ASK1 inhibitor	Failed Phase IIII
Intercept	Obeticholic acid	Farnesoid X receptor	Positive Phase III headline data

Source: Company documents, Hardman & Co Life Sciences Research

In November 2016, Allergan acquired Tobira Therapeutics for an upfront payment of $570m for its NASH and other liver disease experimental therapies, with up to a further $1,101m based on successful completion of specific development, regulatory and commercial milestones, of which $303m was paid in December 2017 for the initiation of the Phase III trials.

The STELLAR-4 trial from Gilead showed that, of the 354 patients who took the higher dose of selonsertib, an ASK1 inhibitor, 14.4% experienced improvement; this compared with 12.8% in the placebo arm, and 12.5% in the lower-dose cohort.

Intercept's product, obeticholic acid, has received accelerated approval by the US FDA for the treatment of primary biliary cirrhosis, and is in the clinic for several indications: NASH (Phase III), primary sclerosing cholangitis (Phase II), biliary atresia (Phase II) and other fibrotic conditions (Phase I).

ROCK2 inhibitor in kidney fibrosis

REDX's ROCK2 programme has potential to address other fibrotic conditions

REDX presented a poster at the American Society of Nephrology (ASN) Kidney Week 2018 in San Diego, CA entitled '*ROCK2 inhibitors for the treatment of chronic kidney disease*'. While the prime focus of the ROCK2 research programme is on NASH, the poster provided the first disclosure of REDX's ROCK2 selective compounds, with *in vitro* and *in vivo* data demonstrating inhibition of pro-fibrotic factors in a model of acute kidney injury – engaging pathways also associated with chronic disease. Chronic kidney disease (CKD) is a potential second opportunity. REDX presented a direct comparison between its two lead molecules – REDX10178 and REDX10325 – with KD025 in *in vitro* assays.

The key messages from REDX's ROCK2 inhibitors are:

- potent inhibition of ROCK2 with an excellent selectivity against ROCK1 and other kinases;
- bioavailable, with a suitable pharmacokinetic and cardiovascular safety profile;
- inhibition of the expression of pro-inflammatory and pro-fibrotic factors in an *in vitro* kidney model; and
- suppression *in vivo* of the inflammatory, fibrosis and kidney injury pathways.

GI-targeted ROCK inhibitors for Crohn's disease

REDX's ROCK1/2 inhibitor has locally acting and targeted approach to gut, making it attractive asset for treatment of Crohn's-related fibrosis

REDX has developed a novel series as a potent GI-targeted ROCK1/2 inhibitor with potential to be first-in-class. The limited systemic exposure and the selective targeting of the gut is possible through two important factors:

- poor absorption through the gut; and
- rapid degradation by specific blood esterases.

This means that the ROCK inhibitor has a locally acting and targeted approach to the gut and is rapidly metabolised if absorbed, avoiding the known hypotensive side effect of systemic dual ROCK1/2 inhibition.

With the GI-targeted ROCK1/2 inhibitor, REDX targets primarily the population of patients affected by Crohn's disease that will develop intestinal wall fibrosis, a complication that occurs in 50% of Crohn's patients. There is currently no approved pharmaceutical treatment for Crohn's-related fibrosis, and REDX believes that it could be the first to reach the clinic for this indication.

REDX has disclosed that a lead product has demonstrated efficacy in a range of animal IBD fibrosis models already, and the company is expecting to announce the preclinical candidate for development in 2H'19. REDX believes it has the opportunity to develop a product that has the potential to not only stop, but also to eventually reverse, the formation of fibrotic tissues.

Financial update

Ongoing plans to strengthen balance sheet to extend cash runway beyond second quarter of calendar 2019

Fiscal 2018 results set a new benchmark with respect to costs and cashflow for REDX, with management moving forward with more controlled costs. In May 2019, management provided the market with an update on its ongoing plans to strengthen the group's balance sheet in order to extend the cash runway beyond the second quarter of calendar 2019. At that time, the Board was in active discussions with shareholders and third-party healthcare specialist investors regarding the longer-term funding of the group. Although discussions are at an advanced stage and positive in nature, more time is required to conclude them and there is no guarantee that any of them will be concluded. Therefore, the company has agreed a short-term loan facility with its biggest shareholder (18.2%), Jon Moulton, to provide a short-term loan facility to extend REDX's cash runway and allow more time for these discussions to conclude.

Loan agreement

REDX and Moulton Goodies Ltd (Moulton) have signed an agreement to secure a short-term loan facility of up to £2.5m. REDX drew down £1m immediately and has the option to draw down two further tranches of not less than £0.5m each. The loan will extend the cash runway until the end of calendar 2019.

- The loan is secured over all REDX's assets and subsidiaries, excluding the pan-RAF research programme.
- The loan bears interest at 10% p.a., which will be rolled-up and repaid at the same time as the capital is repaid.
- The loan is payable in full, including interest, on 31 December 2019, or earlier in the event, *inter alia*, of default.
- Moulton has the option to convert the loan into shares at maturity or in the event the REDX completes an equity financing to raise at least £10m.
- REDX has the right to require Moulton to capitalise the loan in the event that it completes an equity financing to raise gross proceeds of £20m, subject to shareholder approval, at a 30% discount to the issue price of the new shares if outside a financing round, or at a 13% discount if it is part of the financing round.
- In the event that the loan is capitalised on maturity, such capitalisation would be at the lower of the volume-weighted average price per Ordinary share over the 10 business-day period immediately prior to either i) the date of signing the agreements for the loan, or ii) the 31 December 2019.
- In the event that all, or substantially all, of the assets of REDX or the Ordinary shares of the company are sold, or a merger or similar reorganisation, the loan will be repayable with a 30% repayment premium on the capital drawn down, together with any interest due.

Forecast summary

- **SG&A:** The net reduction in administration costs seen during 2018 will be maintained in the following years.
- **R&D:** Investment in R&D is extremely variable and largely dependent on the timing of commencement and conclusion of clinical trials. We forecast an increase due to the re-start of RXC004 and the additional preclinical and regulatory work on subsequent programmes.
- **Net cash:** At 31 March 2019, REDX had net cash of £3.3m on its balance sheet.
- **Short-term loan:** The £2.5m loan signed with Moulton Goodies is to be repaid on 31 December 2019, extending the cash runway until the end of fiscal 2019.
- **Capital increase:** Our cashflow forecasts, together with the Moulton loan agreement, indicate that REDX will need to raise more capital in the short-term in the order of £10m-£20m (gross). There is also the possibility that new capital could come from a licensing deal for pan-RAF research programme, RXC004, or any of REDX's other assets.

Summary financials

Year-end Sep (£m)	2016	2017	2018	2019E	2020E	2021E
Profit & Loss						
SG&A	-2.21	-5.70	-3.30	-3.04	-3.22	-3.38
R&D	-14.32	-13.00	-7.70	-10.61	-10.83	-12.99
Licensing/Royalties	0.00	0.00	0.00	0.00	0.00	0.00
Underlying EBIT	**-14.15**	**-17.41**	**-9.68**	**-12.65**	**-13.04**	**-15.37**
Share-based costs	-0.25	-0.01	-0.28	-0.30	-0.32	-0.34
Statutory EBIT	-14.95	-24.94	-10.17	-12.95	-13.37	-15.71
Net financials	-0.46	-3.89	0.02	-0.07	-0.06	0.00
Underlying PBT	**-14.61**	**-17.74**	**-9.66**	**-12.72**	**-13.10**	**-15.37**
Extraordinary items	0.00	30.47	0.00	0.00	0.00	0.00
Reported taxation	-0.11	-0.12	1.30	1.79	1.83	1.95
Underlying net income	-13.97	-17.86	-8.36	-10.93	-11.27	-13.18
Underlying basic EPS (p)	**-17.83**	**-15.80**	**-6.61**	**-3.95**	**-2.64**	**-3.09**
Statutory basic EPS (p)	-19.81	1.35	-6.99	-4.06	-2.72	-3.23
Balance sheet @30 Sep						
Share capital	0.94	1.27	1.27	4.26	4.26	4.26
Reserves	0.78	13.06	4.50	4.37	-7.23	-20.99
Capitalised R&D	30.10	36.05	37.52	37.01	37.52	39.61
Loans	2.00	0.00	0.00	2.50	0.00	0.00
less: Cash	5.76	23.81	6.47	11.45	-2.28	-16.55
Invested capital	**27.46**	**26.57**	**37.42**	**36.69**	**36.84**	**39.43**
Cashflow						
Underlying EBIT	-14.15	-17.41	-9.68	-12.65	-13.04	-15.37
Depreciation	0.26	0.33	0.16	0.16	0.16	0.16
Working capital	1.15	7.69	-8.39	-0.22	-0.44	-0.74
Other	-0.56	-4.99	-0.02	0.00	0.00	0.00
Capital expenditure	-0.44	-0.03	-0.13	-0.14	-0.14	-0.15
Operational cashflow	**-13.29**	**-14.38**	**-17.93**	**-12.70**	**-13.33**	**-15.95**
Disposals	0.00	30.47	0.00	0.00	0.00	0.00
Share issues	9.30	11.07	0.00	14.10	0.00	0.00
Change in net debt	**-3.68**	**20.05**	**-17.34**	**2.48**	**-11.67**	**-14.27**
Period-end net cash/(debt)	**3.76**	**23.81**	**6.47**	**8.95**	**-2.28**	**-16.55**

Source: Hardman & Co Life Sciences Research

Company matters

Registration

Incorporated in the UK, with company registration number 07368089.

Registered Office:

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Alderley Park
Alderley Edge
Macclesfield
SK10 4TG

Tel: +44 1625 469 900

www.redxpharma.com

Board of Directors

Board of Directors

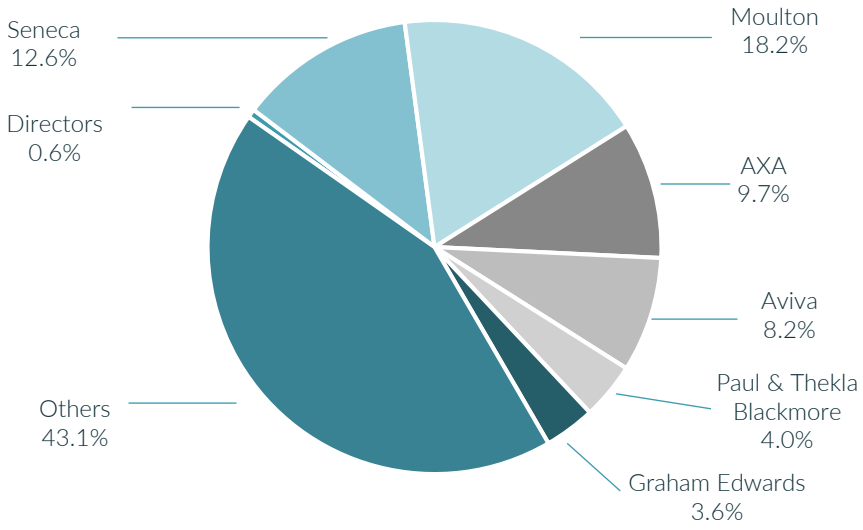
Position	Name	Remuneration	Audit
Chairman	Iain Ross	M	M
Chief Executive Officer	Lisa Anson		
Chief Financial Officer	Dr James Mead*		
Non-executive director	Dr Bernard Kirschbaum	C	M
Non-executive director	Peter Presland	M	C

M = member; C = chair
** Since February 2019*
Source: Company reports

Share capital

REDX has 126,477,914 Ordinary 1p shares in issue. The company also has 4.25m options outstanding.

Key shareholders



Source: Hardman & Co Life Sciences Research

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