EDISON

Quantum Genomics

Development update

All set for an eventful 2019

Pharma & biotech

Quantum Genomics recently reported its 2018 annual results and updated development timelines. Results from the pharmacokinetic study of sustained-release (once per day) firibastat as well as the initiation of the 294-patient Phase IIb QUORUM study in heart failure are both expected in Q219. The company is also planning to initiate its Phase III trial hypertension in H219. In addition, it is currently in discussions with a number of potential partners for the firibastat programme following the strong NEW-HOPE data.

Year end	Revenue (€m)	PBT* (€m)	EPS* (€)	DPS (€)	P/E (x)	Yield (%)
12/17	0.0	(10.3)	(0.93)	0.0	N/A	N/A
12/18	0.0	(13.6)	(0.94)	0.0	N/A	N/A
12/19e	0.0	(17.6)	(0.88)	0.0	N/A	N/A
12/20e	0.0	(23.1)	(1.12)	0.0	N/A	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Controlled-release formulation data in Q219

Quantum is developing a controlled-release formulation of firibastat that would allow it to be administered once a day (currently twice a day). A trial in 12 healthy volunteers to evaluate pharmacokinetics (PK) in prototype formulations has been fully enrolled and is expected to produce results in Q219.

QUORUM study in heart failure patients coming

The QUORUM study will enrol 294 subjects from 40 centres in the US and Europe within 24 hours of suffering acute myocardial infarction (AMI), commonly referred to as a heart attack. The primary endpoint will be the change from baseline in the left ventricular ejection fraction (LVEF) after a three-month treatment. Patient recruitment is expected to start in Q219, with results in H220.

Phase III hypertension study to begin in H219

The company is preparing to follow up the positive NEW-HOPE data of firibastat in patients with hypertension with a Phase III trial, which is expected to begin in H219. As a reminder, in the 256-patient NEW-HOPE trial, patients saw a statistically significant reduction from baseline ($p<0.0001$) in systolic automated office blood pressure (AOBP) of 9.7mmHg.

Valuation: €860m or €52.43 per share

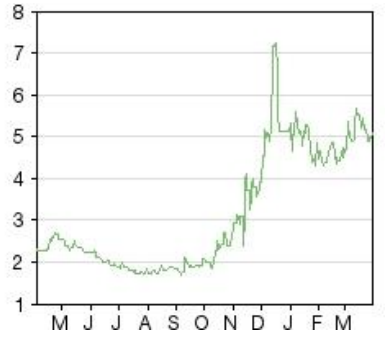
We have adjusted our valuation of Quantum Genomics to €860m or €52.43 per share from €803m or €66.91 per share. The total valuation has increased due to rolling forward our NPVs and a higher net cash level, while the valuation per share has decreased due to a higher share count as the company utilised an equity line with Kepler Cheuvreux. Quantum had €14.8m in cash at end 2018 and has utilised an additional €2.6m of its equity line since then, which should fund the company's trials to the end of 2019.

1 April 2019

Price	**€4.96**
Market cap	**€81m**

Net cash (€m) at 31 December 2018	14.8
Shares in issue	16.4m
Free float	75%
Code	ALQGC
Primary exchange	Euronext Paris
Secondary exchange	OTCQX

Share price performance



%	1m	3m	12m
Abs	10.0	(5.5)	115.2
Rel (local)	9.4	(16.2)	112.1
52-week high/low		€7.2	€1.7

Business description

Quantum Genomics is a biopharmaceutical company developing firibastat, a brain aminopeptidase A inhibitor for the treatment of hypertension and heart failure. Its mechanism is implicated in the 25% of patients resistant to treatment. The Phase IIb study in hypertension was recently very positive and the Phase IIb in heart failure should start in Q219.

Next events

Sustained-release firibastat PK data	Q219
Phase IIb heart failure study initiation	Q219
Start of Phase III in hypertension	H219

Analysts

Maxim Jacobs +1 646 653 7027

Briana Warschun +1 646 653 7031

healthcare@edisongroup.com

Edison profile page

A busy year ahead

The company recently reported its full year results for 2018 and provided an update on development timelines. It is developing a controlled-release formulation of firibastat that would allow it to be administered once a day (compared to twice a day with the current formulation). A trial in 12 healthy volunteers to evaluate PK in prototype formulations has been fully enrolled and is expected to have results in Q219.

Quantum Genomics is also moving forward with the Phase IIb trial in heart failure. The QUORUM study will assess the safety and efficacy of Quantum's drug firibastat compared to ramipril, an angiotensin-converting enzyme (ACE) inhibitor, in 294 subjects enrolled within 24 hours of suffering AMI, who were treated with primary percutaneous coronary intervention and have reduced LVEF. The primary endpoint will be the change from baseline in LVEF after a three-month treatment. Secondary endpoints will include cardiac events, functional status and change in heart failure biomarkers. The subjects will be recruited from 40 centres in the US and Europe, and the trial is expected to launch in Q219 with results expected in H220. Originally, we had expected the study to begin by the end of 2018, but despite the delayed initiation, the company did not change guidance on the timing of the results.

The company is also preparing to follow up the positive NEW-HOPE data of firibastat in patients with hypertension with a Phase III trial, which is expected to begin in H219. As a reminder, the NEW-HOPE trial completed enrolment faster than expected, enrolling 256 patients (254 included in the intent-to-treat analysis) in just 10 months. NEW-HOPE focused enrolment on hypertensive overweight (BMI 25–45kg/m^2) patients (65% of patients were obese), with a primary endpoint of change from baseline in systolic AOBP at week eight. Patients saw a statistically significant reduction from baseline ($p<0.0001$) in AOBP of 9.7mmHg.

The results are in the vicinity of many of the standards of care (see Exhibit 1), but with a differentiated mechanism, which could be especially helpful in treating those currently not well controlled. Needless to say, there are a number of potential partners interested in this programme and discussions with them are ongoing, according to the company.

Exhibit 1: Competitor efficacy table

Drug	Class	Company (originator)	Peak sales (all indications)	Duration	Reduction in systolic blood pressure (mmHg)
Firibastat	BAPAI	Quantum Genomics	N/A	8 weeks	9.7
Diovan (valsartan)	ARB	Novartis	$6.0bn (2010)	8 weeks	5.6–9
Vasotec (enalapril)	ACE inhibitor	Merck	$2.5bn (1996)	4 weeks	10–14
Norvasc (amlodipine)	Calcium channel blocker	Pfizer	$4.9bn (2006)	8 weeks	12.1–16

Source: Quantum Genomics, FDA, company filings, Liu et al, (2010) Tolerability and effectiveness of (S)-amlodipine compared with racemic amlodipine in hypertension*; Current therapeutic research, clinical and experimental* 71, 1-29; Ruilope et al. (2010) Blood-pressure reduction with LCZ696, a novel dual-acting inhibitor of the angiotensin II receptor and neprilysin, *Lancet*; 375: 1255-66.

Valuation

We have adjusted our valuation of Quantum Genomics to €860m or €52.43 per share from €803m or €66.91 per share. The total valuation has increased due to rolling forward our NPVs and a higher net cash level, while the valuation per share has decreased due to a higher share count as the company utilised an equity line with Kepler Cheuvreux. Note that the probability of success in hypertension remains at a discount to where it would normally be (for a Phase III asset we usually use a 60–70% probability of success) as the company will require a partner to advance firibastat to approval. A partnership with a major pharmaceutical company would likely increase that probability.

Exhibit 2: Quantum Genomics valuation

Product	Main indication	Local	Status	Prob. of success	Launch year	Peak sales ($m)	Patent protection	rNPV
Firibastat (QGC001)	Hypertension	US	Phase II	50%	2023	$1,110	2031	€441.40
Firibastat (QGC001)	Hypertension	Europe	Phase II	50%	2023	$959	2031	€374.49
Firibastat (QGC001)	Development costs							(€140.35)
Firibastat (QGC001)	Heart failure	US	Phase IIb	20%	2023	$574	2031	€112.71
Firibastat (QGC001)	Heart failure	Europe	Phase IIb	20%	2023	$687	2031	€133.73
Firibastat (QGC001)	Development costs							(€76.53)
Total								**€845.44**
Net cash (31 December 2018) (€m)								€14.78
Total firm value (€m)								€860.22
Total shares (28 February 2019) (m)								16.41
Value per basic share (€m)								**€52.43**

Source: Edison Investment Research

Financials

Quantum Genomics reported an operational loss of €13.6m in 2018 compared to €10.3m in 2017, with the increase primarily driven by additional spending on R&D. We have increased our operating loss estimates for 2019 by around €2m to €16.8m due to a greater than expected spending in 2018. We also have introduced estimates for 2020, in which we expect spending to increase to €20.9m.

Quantum ended 2018 with €14.8m in cash and investments. In March 2018, it announced an equity line of credit with Kepler Cheuvreux, and has approximately €6.5m of the original €24m line remaining after drawing down an additional €2.6m after the end of the quarter. The company has stated that it believes the equity line will fund its clinical trials through to the end of 2019, although we expect it to raise €10m in additional capital (either through a partnership or equity raise) by the end of the year (but far more if through a partnership).

Exhibit 3: Financial summary

€000s	2017	2018	2019e	2020e
Year end 31 December	PCG	PCG	PCG	PCG
PROFIT & LOSS				
Revenue	0	0	0	0
Cost of Sales	0	0	0	0
Gross Profit	0	0	0	0
EBITDA	(10,292)	(13,598)	(16,792)	(20,879)
Operating Profit (before amort. and except.)	(10,292)	(13,598)	(16,792)	(20,879)
Intangible Amortisation	0	0	0	0
Other	0	0	0	0
Exceptionals	0	0	0	0
Operating Profit	(10,292)	(13,598)	(16,792)	(20,879)
Net Interest	0	0	(801)	(2,201)
Other	(239)	150	0	0
Profit Before Tax (norm)	(10,292)	(13,598)	(17,593)	(23,080)
Profit Before Tax (FRS 3)	(10,531)	(13,448)	(17,593)	(23,080)
Tax	1,150	1,458	2,287	3,000
Deferred tax	0	0	0	0
Profit After Tax (norm)	(9,142)	(12,140)	(15,306)	(20,080)
Profit After Tax (FRS 3)	(9,381)	(11,990)	(15,306)	(20,080)
Average Number of Shares Outstanding (m)	9.9	12.8	17.3	18.0
EPS - normalised (c)	(93.45)	(93.94)	(88.49)	(111.62)
EPS - FRS 3 (€)	(0.95)	(0.94)	(0.88)	(1.12)
Dividend per share (c)	0.0	0.0	0.0	0.0
BALANCE SHEET				
Fixed Assets	439	626	636	644
Intangible Assets	91	0	0	0
Tangible Assets	52	24	34	42
Other	296	602	602	602
Current Assets	13,478	17,855	15,139	12,551
Stocks	189	422	422	422
Debtors	2,197	2,636	2,636	2,636
Cash	11,089	14,797	12,081	9,494
Other	3	0	0	0
Current Liabilities	(4,572)	(5,764)	(5,764)	(5,764)
Creditors	(4,571)	(5,762)	(5,762)	(5,762)
Short term borrowings	(1)	(2)	(2)	(2)
Long Term Liabilities	(474)	(849)	(10,849)	(28,349)
Long term borrowings	(19)	(12)	(10,012)	(27,512)
Other long term liabilities	(454)	(837)	(837)	(837)
Net Assets	8,871	11,868	(838)	(20,918)
CASH FLOW				
Operating Cash Flow	(7,977)	(10,901)	(15,300)	(20,071)
Net Interest	0	0	0	0
Tax	0	0	0	0
Capex	32	(16)	(16)	(16)
Acquisitions/disposals	0	0	0	0
Financing	7,733	15,071	2,600	0
Dividends	0	0	0	0
Other	104	(446)	0	0
Net Cash Flow	(108)	3,708	(12,716)	(20,087)
Opening net debt/(cash)	(11,179)	(11,069)	(14,783)	(2,067)
HP finance leases initiated	0	0	0	0
Exchange rate movements	0	0	0	0
Other	-2	6	0	0
Closing net debt/(cash)	(11,069)	(14,783)	(2,067)	18,021

Source: Quantum Genomics accounts, Edison Investment Research.

General disclaimer and copyright

This report has been commissioned by Quantum Genomics and prepared and issued by Edison, in consideration of a fee payable by Quantum Genomics. Edison Investment Research standard fees are £49,500 pa for the production and broad dissemination of a detailed note (Outlook) following by regular (typically quarterly) update notes. Fees are paid upfront in cash without recourse. Edison may seek additional fees for the provision of roadshows and related IR services for the client but does not get remunerated for any investment banking services. We never take payment in stock, options or warrants for any of our services.

Accuracy of content: All information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable, however we do not guarantee the accuracy or completeness of this report and have not sought for this information to be independently verified. Opinions contained in this report represent those of the Edison analyst at the time of publication. Forward-looking information or statements in this report contain information that is based on assumptions, forecasts of future results, estimates of amounts not yet determinable, and therefore involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of their subject matter to be materially different from current expectations.

Exclusion of Liability: To the fullest extent allowed by law, Edison shall not be liable for any direct, indirect or consequential losses, loss of profits, damages, costs or expenses incurred or suffered by you arising out or in connection with the access to, use of or reliance on any information contained on this note.

No personalised advice: The information that we provide should not be construed in any manner whatsoever as, personalised advice. Also, the information provided by us should not be construed by any subscriber or prospective subscriber as Edison's solicitation to effect, or attempt to effect, any transaction in a security. The securities described in the report may not be eligible for sale in all jurisdictions or to certain categories of investors.

Investment in securities mentioned: Edison has a restrictive policy relating to personal dealing and conflicts of interest. Edison Group does not conduct any investment business and, accordingly, does not itself hold any positions in the securities mentioned in this report. However, the respective directors, officers, employees and contractors of Edison may have a position in any or related securities mentioned in this report, subject to Edison's policies on personal dealing and conflicts of interest.

Australia

Edison Investment Research Pty Ltd (Edison AU) is the Australian subsidiary of Edison. Edison AU is a Corporate Authorised Representative (1252501) of Myonlineadvisers Pty Ltd who holds an Australian Financial Services Licence (Number: 427484). This research is issued in Australia by Edison AU and any access to it, is intended only for "wholesale clients" within the meaning of the Corporations Act 2001 of Australia. Any advice given by Edison AU is general advice only and does not take into account your personal circumstances, needs or objectives. You should, before acting on this advice, consider the appropriateness of the advice, having regard to your objectives, financial situation and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Product Disclosure Statement or like instrument.

New Zealand

The research in this document is intended for New Zealand resident professional financial advisers or brokers (for use in their roles as financial advisers or brokers) and habitual investors who are "wholesale clients" for the purpose of the Financial Advisers Act 2008 (FAA) (as described in sections 5(c) (1)(a), (b) and (c) of the FAA). This is not a solicitation or inducement to buy, sell, subscribe, or underwrite any securities mentioned or in the topic of this document. For the purpose of the FAA, the content of this report is of a general nature, is intended as a source of general information only and is not intended to constitute a recommendation or opinion in relation to acquiring or disposing (including refraining from acquiring or disposing) of securities. The distribution of this document is not a "personalised service" and, to the extent that it contains any financial advice, is intended only as a "class service" provided by Edison within the meaning of the FAA (i.e. without taking into account the particular financial situation or goals of any person). As such, it should not be relied upon in making an investment decision.

United Kingdom

Neither this document and associated email (together, the "Communication") constitutes or form part of any offer for sale or subscription of, or solicitation of any offer to buy or subscribe for, any securities, nor shall it or any part of it form the basis of, or be relied on in connection with, any contract or commitment whatsoever. Any decision to purchase shares in the Company in the proposed placing should be made solely on the basis of the information to be contained in the admission document to be published in connection therewith.

This Communication is being distributed in the United Kingdom and is directed only at (i) persons having professional experience in matters relating to investments, i.e. investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "FPO") (ii) high net-worth companies, unincorporated associations or other bodies within the meaning of Article 49 of the FPO and (iii) persons to whom it is otherwise lawful to distribute it. The investment or investment activity to which this document relates is available only to such persons. It is not intended that this document be distributed or passed on, directly or indirectly, to any other class of persons and in any event and under no circumstances should persons of any other description rely on or act upon the contents of this document (nor will such persons be able to purchase shares in the placing).

This Communication is being supplied to you solely for your information and may not be reproduced by, further distributed to or published in whole or in part by, any other person.

United States

The Investment Research is a publication distributed in the United States by Edison Investment Research, Inc. Edison Investment Research, Inc. is registered as an investment adviser with the Securities and Exchange Commission. Edison relies upon the "publishers' exclusion" from the definition of investment adviser under Section 202(a) (11) of the Investment Advisers Act of 1940 and corresponding state securities laws. This report is a bona fide publication of general and regular circulation offering impersonal investment-related advice, not tailored to a specific investment portfolio or the needs of current and/or prospective subscribers. As such, Edison does not offer or provide personal advice and the research provided is for informational purposes only. No mention of a particular security in this report constitutes a recommendation to buy, sell or hold that or any security, or that any particular security, portfolio of securities, transaction or investment strategy is suitable for any specific person.

Frankfurt +49 (0)69 78 8076 960
Schumannstrasse 34b
60325 Frankfurt
Germany

London +44 (0)20 3077 5700
280 High Holborn
London, WC1V 7EE
United Kingdom

New York +1 646 653 7026
1,185 Avenue of the Americas
3rd Floor, New York, NY 10036
United States of America

Sydney +61 (0)2 8249 8342
Level 4, Office 1205
95 Pitt Street, Sydney
NSW 2000, Australia