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Quantum Genomics Corp. (ALQGC.PA – Paris)

Building a Presence in the Pacific Rim

Based on our DCF model and a 15% discount rate, Quantum Genomics is valued at approximately €15.00 per share. Our model applies a 50% probability of ultimate approval and commercialization for firibastat in hypertension and a 15% probability for heart failure. The model includes contributions from the United States, European Union, Latin America, Greater China and Oceana.

Current Price (10/21/2020)	€3.41
Valuation	**€15.00**

OUTLOOK

Quantum Genomics is developing lead candidate firibastat for difficult to treat and resistant hypertension (HTN) and heart failure (HF). The BAPAI class drug blocks the conversion of A2 to A3 thereby preventing A3 binding with AT1 receptors which controls blood pressure via a triple mechanism of action.

Quantum is conducting a Ph3 trial for HTN in difficult to treat and resistant populations, a Ph2b trial in heart failure and a Ph1 in 1x/day HTN. We expect another Ph3 safety study for HTN and a Ph3 study in heart failure to start in 2021. The timeline also anticipates a HTN NDA filing in 2023.

HTN is a highly prevalent disease and a material portion of this population does not have the disease under control. Firibastat seeks to address this unmet need via a differentiated pathway complementary to currently approved therapies.

Our valuation assumes a 2023 regulatory submission in the US and EU and subsequent commercialization. Partner Biolab is expected to pursue approval in select Latin American countries and commercialize throughout that region in 2023 and 2024 respectively.

SUMMARY DATA

52-Week High	**4.48**
52-Week Low	**1.51**
One-Year Return (%)	**0.0**
Beta	**0.73**
Average Daily Volume (sh)	**236,685**
Shares Outstanding (mil)	**21.6**
Market Capitalization (€mil)	**73.6**
Short Interest Ratio (days)	**0.22**
Institutional Ownership (%)	**0.3**
Insider Ownership (%)	**13.8**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2020 Estimate	**N/A**
P/E using 2021 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**Above Average**
Type of Stock	**Small-Growth**
Industry	**Med-Biomed/Gene**

ZACKS ESTIMATES

Revenue
(In millions of EUR)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2019	€0.0 A	€0.3 A	€0.0 A	€0.1 A	€0.4 A
2020	€0.0 A	€0.4 A	€0.0 E	€10.0 E	€10.4 E
2021					€12.0 E
2022					€15.0 E

Earnings per Share

	Q1	Q2	Q3	Q4	Year
2019	€0.00 A	-€0.24 A	€0.00 A	-€0.27 A	-€0.50 A
2020	€0.00 A	-€0.25 A	€0.00 E	€0.08 E	-€0.20 E
2021					-€0.29 E
2022					-€0.20 E

WHAT'S NEW

First Half 2020 Operational and Financial Results

On October 1, 2020 Quantum Genomics Corp. (Paris: ALQGC) issued a press release highlighting the company's financial and operational achievements over the first six months of 2020 and subsequently filed its interim financial report. Since the end of the reporting period, the company also announced two important license and collaboration agreements with Orient EuroPharma and Qilu Pharmaceutical for regions throughout Asia and the Pacific Rim. The agreements include potential upfronts, milestones and royalties of almost $70 million.

Quantum's clinical programs continued to advance during the first six months of 2020 despite minor delays related to the coronavirus pandemic. The QUORUM study was delayed due to reorganization of follow up visits and compliance with new regulations with the end of recruitment now expected by year end 2020. The FRESH study is on track with no expected delays and the first patient was recruited in July. FRESH results are expected to be announced by year end 2021. Raw materials for the production of firibastat, necessary for continuation of the trials, have been secured.

Despite the effect of the pandemic, partnerships have been advancing with two agreements signed since the end of the reporting period and additional discussions ongoing. Agreements with Negma and other entities were executed to guarantee funding for continuing clinical studies. Enrollment for healthy volunteers in the renal trial were temporarily delayed and some delay was observed in the QUORUM trial due to additional COVID-related safety requirements and has since resumed. However, no material impact was observed and the FRESH trial began enrollment in July. The company does not expect a significant delay as a result of the coronavirus.

Financials

In the first half of 2020, Quantum Genomics recorded a net loss of (€5.1) million or (€0.25) per share compared to a net loss of (€4.1) million or (€0.24) in the year earlier period. The difference is primarily attributed to research and development expenses of €4.8 million in 1H:20, up from €3.9 million in 1H:19. Wages and salaries and social security charges partially offset the increase in research and development expenses which were down 28% to €1.1 million in 1H:20.

Available cash amounted to €13.2 million as of June 30, 2020, compared to €11.2 million as of December 31, 2019 with financing from other borrowings and debts funding the increase. Cash used in operations was (€5.8) million which was offset by a capital increase of €5.3 million from the Kepler equity line and Negma contributions. Another €2.4 million was received from Negma, adding to the financial and other debts balance. Financial debt with Negma will be converted into shares and as of October 1, 2020, less than €1.0 million of financial debt remained.

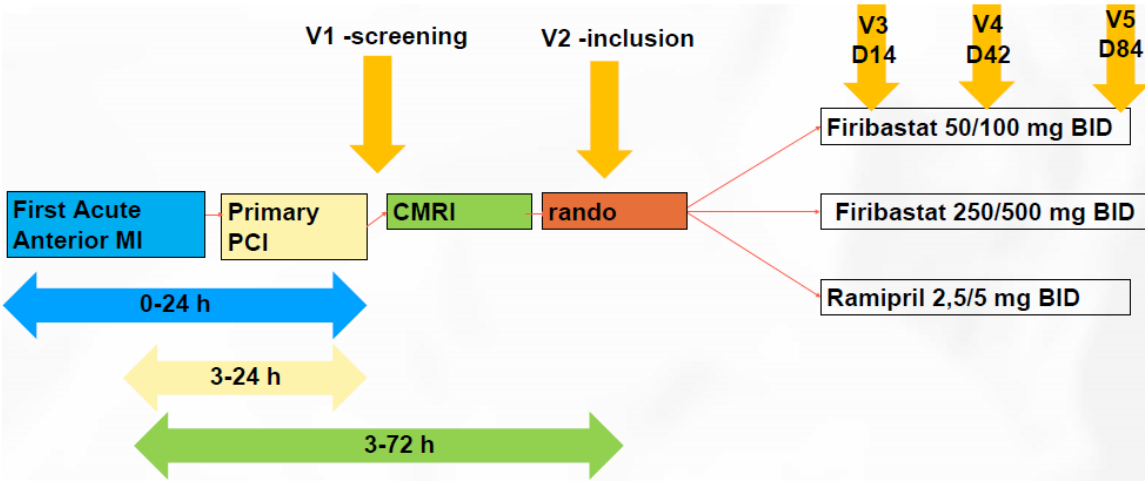
Negma Group Financing

In January 2020, Quantum secured debt financing through Negma Group in an initial tranche of up to €8 million, which could be renewed twice, providing a maximum of €24 million in capital. As of June 30, Quantum had drawn €2.3 million of the total, and as of October 1st, less than €1.7 million was held in Negma financial debt to be converted into shares. As of October 22nd, less than €1 million remains to be converted. Management has declined to draw the initial €8 million financing through NEGMA due to the availability of other capital including upfront funds from recent licensing arrangements.

QUORUM study

In January 2019, Quantum announced the launch of the QUORUM Phase IIb study for firibastat in post myocardial infarction heart failure. A 294-patient Phase IIb trial is intended to characterize safety and efficacy of firibastat in patients after acute anterior myocardial infarction (MI). In the trial, subjects are required to have a diagnosis of first acute anterior MI and a primary percutaneous coronary intervention (PCI) within 24 hours after MI. QUORUM is structured to compare three parallel groups including firibastat at 100 mg BID and 500 mg BID, and ramipril 5 mg BID over a three month treatment period. The primary endpoint of the trial is change in baseline of left ventricular ejection fraction. In mid-April 2019, Quantum received the first of its regulatory approvals from the French authority to initiate QUORUM in seven European countries and in June 2019, Quantum enrolled its first patient. The trial has been conducted at 38 hospitals throughout Europe and expects to be fully recruited by the end of 2020 with results to follow.

Exhibit I – Phase IIb Post-MI HF Trial Design[1]

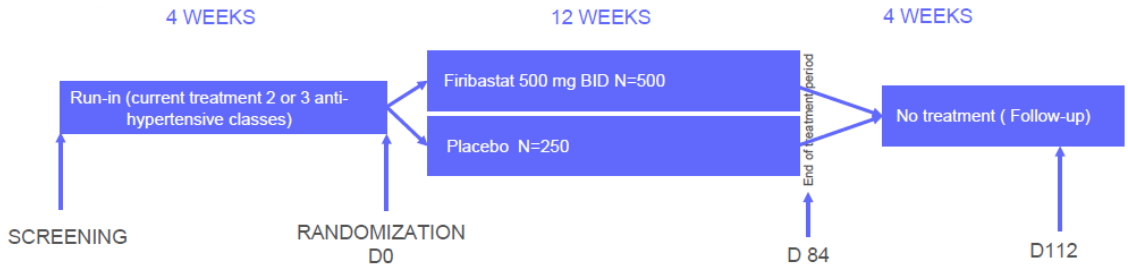


FRESH study

Quantum announced the start of its Phase III FRESH (**F**iribastat in treatment-**RES**istant **H**ypertension) in mid-December 2019, conducted in partnership with Biolab Sanus Pharmaceuticals. FRESH enrolled its first patient in July 2020. The 500-subject trial is designed as a three month, double-blind, placebo-controlled study in difficult-to-treat and resistant hypertension as defined by systolic blood pressure above 140 mm Hg and treatment with two or three anti-hypertensive classes including a diuretic. Study treatment is 500 mg of firibastat, administered twice per day in addition to currently mandated therapy. The trial targets 70 sites around the globe, including hospitals in Europe, the US, Canada and Latin America. Biolab will be responsible for trial costs of 20% (100) of the anticipated subject total and will manage the trials in Latin America.

The primary endpoint for the study is change from baseline in systolic automated office blood pressure (AOBP). Secondary outcomes include measurement of diastolic blood pressure, mean 24-hour ambulatory systolic and diastolic blood pressure.

Exhibit II – FRESH Study Design[2]



As of October 2020, management expressed that FRESH remains on track and results are expected to be announced by the end of 2021.

[1] Source: Quantum Corporate Presentation, June 2020.
[2] Source: Quantum Corporate Presentation, June 2020.

Recent Partnerships

Exclusive Licensing and Collaboration Agreement with Orient EuroPharma

On September 22, 2020, Quantum Genomics announced that it had entered into an exclusive licensing and collaboration agreement with Orient EuroPharma (OEP) for the commercialization of firibastat in South East Asia, Australia and New Zealand. In the agreement, Quantum Genomics will receive upfront and milestone payments up to US$19 million plus double-digit royalties on sales, with milestones based both on development and sales. The total upfront amount has not been disclosed.

Quantum Genomics is developing its lead candidate, firibastat, which is currently in Phase III trials for difficult to treat and resistant hypertension. Quantum has already developed a commercialization arrangement with Brazilian pharmaceutical company Biolab Sanus, signed in late 2019, for the development and commercialization of firibastat in the Latin American market. The agreement with Biolab Sanus provided exclusive commercialization rights in exchange for finding of clinical trials, upfronts and milestone payments and royalties.

Under the terms of the agreement, OEP will have exclusive rights to commercialize firibastat in difficult to treat/ resistant hypertension in Taiwan, Malaysia, the Philippines, Singapore, Vietnam, Thailand, Indonesia, Myanmar, Cambodia, Australia and New Zealand. The estimated addressable population in these regions is 10 million people. OEP will also fund part of the Phase III study for firibastat in difficult to treat/resistant hypertension in Taiwan.

OEP

Founded in 1982, OEP started as a prescription drug distributor and has grown to become a multinational pharmaceutical company. The company was listed on the Taiwan Exchange in 2003. The company is now vertically integrated and engages in R&D, manufacturing, sales and clinical trials in the development and commercialization of pharmaceuticals. In 2019, OEP had over 1,000 employees and operated two subsidiaries, OrientPharma and OP NanoPharma. The company has three major business units that focus on prescription medicine, nutricare and anti-aging, respectively.

Exclusive Licensing and Collaboration Agreement with Qilu Pharmaceutical

On October 19, 2020, Quantum submitted a press release announcing a new licensing and collaboration agreement with Qilu Pharmaceutical. The new arrangement may provide Quantum up to $50 million in upfront and milestone payments over the life of the agreement. It also includes a double digit royalty on sales of firibastat for the treatment of difficult to treat/resistant hypertension in the Greater China region, including Hong Kong and Macao.

Under the terms of the agreement, Qilu will have exclusive rights to develop and commercialize firibastat in the indicated regions, marking the second agreement with exposure to Asia. Quantum will receive upfront and milestones of up to $50 million as well as double digit royalties on sales. These licensed regions region have an expansive population that is estimated to have from 25 to 30 million individuals with difficult to treat and resistant hypertension.

Qilu Pharma

Qilu Pharmaceutical is a Chinese-based global pharmaceutical firm with locations throughout China, The United States and in Brazil, Spain and Australia. Founded in 1958, the company has launched over 200 generic drug products over the last 38 years and commercializes products in over 70 countries. Qilu has a therapeutic focus in oncology, infectious diseases, neurological diseases, cardiovascular and cerebrovascular system diseases among other areas.

Firibastat

Firibastat works within the renin-angiotensin-aldosterone system (RAAS). The RAAS regulates blood pressure, fluid and electrolyte balance and systemic vascular resistance and is the system in which angiotensin converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) act. Specifically, Brain Aminopeptidase A Inhibitors (BAPAIs) target not the peripheral but brain-level (central) RAAS that plays a unique role in regulating blood pressure. Brain-level RAAS was already known to modulate systemic tone, but, until now, a formulation allowing BAPAI to cross into the brain had not existed. Brain-level RAAS is of special interest, as, unlike peripheral RAAS, central RAAS also has neural relevance to systemic tone, making it a critical target for difficult-to-treat, resistant or salt-sensitive hypertension and post-MI HF. Firibastat is a prodrug, composed of two EC33 moieties dimerized via disulfide bond. The prodrug crosses the blood brain barrier more readily than EC33, where it is then cleaved and activated by brain-level reductases.

Quantum's firibastat has a triple mechanism of action which may address high blood pressure in resistant populations. The action of the drug prevents the aminopeptidase A enzyme from converting A2 into A3. A3 will normally bind to angiotensin receptor type 1 (AT1), which raises blood pressure. Without A3, vasopressin release is reduced, sympathetic nerve activity declines and baroreflex action increases. Additionally, A2 is converted to angiotensin-(1-7) rather than A3, which has anti-hypertensive effects. Because hypertension (HTN) and heart failure (HF) are related, many drugs used to treat HTN are implemented in the management of post-MI HF. Brain-level RAAS has been implicated in post-MI cardiac remodeling; thus, firibastat can potentially go beyond current therapies to alter the course of post-MI HF.

Corporate Milestones

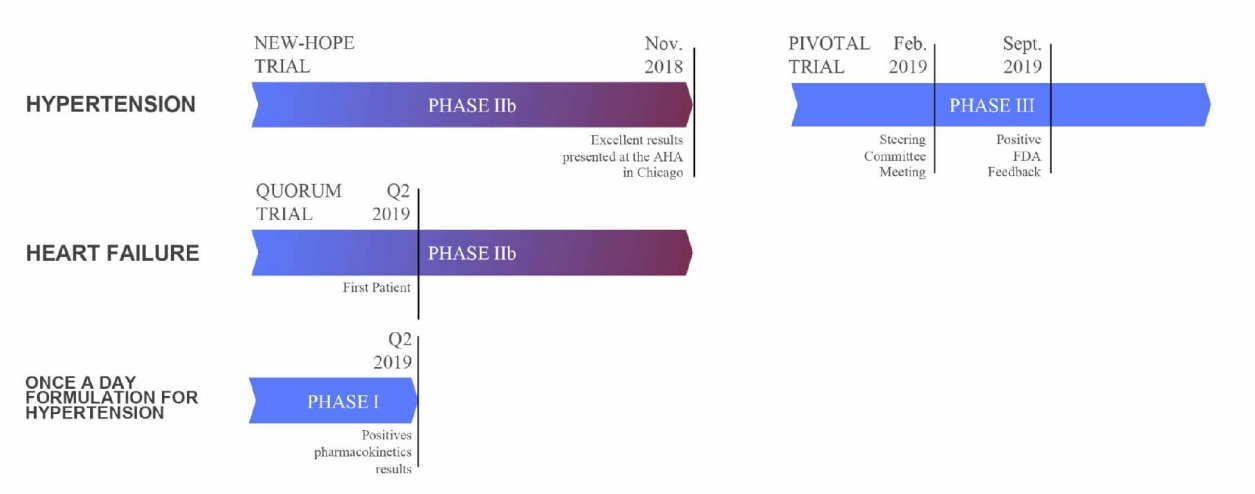
Quantum is conducting multiple clinical trials for multiple cardiovascular indications. Below we list key milestones that have occurred in the last year and anticipated future events.

- First patient enrolled in Phase III FRESH study – July 2020
- Final results of PK study in firibastat renal patients – 4Q:20
- Final results of PK study with firibastat table formulation – 3Q:20
- Licensing & collaboration agreement with Orient EuroPharma – September 2020
- Licensing & collaboration agreement with Qilu Pharmaceutical – October 2020
- Completion of Phase IIb QUORUM (heart failure) study recruitment – 4Q:20
- Bridging PK/PD study for 1x/day in hypertension – 1H:21
- Readout from Phase IIb QUORUM study – 1H:21
- Launch Phase III study for heart failure – 2H:21
- Complete Phase III efficacy (FRESH) study – 2H:22
- New drug application for firibastat – 2023

Pipeline

Quantum's pipeline consists of one drug, firibastat, with various formulations pursuing multiple indications. It is being investigated in difficult-to-treat and resistant hypertension, heart failure, renal failure also in once per day formulations. The candidate is currently in one Phase III trial for hypertension, one Phase II trial for heart failure and Phase I trials for QD formulation hypertension and renal failure.

Exhibit III - Quantum Development Pipeline[3]



Valuation

We update our valuation to reflect the two recently announced new partnerships with pharmaceutical companies OEP and Qilu. Based on the information provided in the press releases, the geographies included add 35 to 40 million individuals suffering from difficult to treat and resistant hypertension to firibastat's licensed regions. We calculate a population of 2.1 billion in the indicated countries[4] and estimate on a country by country basis from 25% to 90% of the inhabitants are addressable. We further assume that about 4% of the population has uncontrolled hypertension, similar to our approach in other regions detailed in our initiation. Penetration into this difficult to treat and resistant addressable market is expected to start at 25 basis points of penetration in 2024 and rise to 150 basis points of penetration by 2027 which persists until 2032 at which time penetration tapers off. As with other regions we assume an all-in royalty of 30% which includes value from milestones and royalties. We do not change our estimates for other regions or indications. The result of the addition of value for the Asian and Pacific Rim regions as a result of the OEP and Qilu arrangements increases our target price to €15 per share.

Summary

Quantum Genomics continues to make headway in the clinic and is expanding its reach throughout the Pacific Rim with new licensing agreements. We expect additional agreements to be signed in the coming quarters for other areas which may include Korea, Japan, India, North America and Europe. Cash burn of approximately €1 million per month, anticipated receipt of €10 million+ in upfronts and cash reserves of €13.2 million suggest a long runway and sufficient cash to extend several years. We expect additional upfront funds in 2021 and 2022 which will further support development programs. Quantum continues to build a global market for firibastat with development and commercialization partnerships established now in Latin America, Southeast Asia, Australia and New Zealand. Despite a minor delay due to the pandemic, the FRESH trial is enrolling and QUORUM results are expected before year end. The two new licensing arrangements increase Quantum's exposure to the difficult to treat and resistant hypertension market. We reflect these additions in an increase to our target price to €15 per share.

[3] Source: Quantum Genomics Website: https://quantum-genomics.com/en/science/pipeline/
[4] This includes South East Asia (Indonesia, Philippines, Vietnam, Thailand, Myanmar, Malaysia, Cambodia, Laos, Singapore, Timor-Leste, Brunei, Darussalam), Australia, New Zealand, China, Hong Kong & Macau.

PROJECTED FINANCIALS

Quantum Genomics Corp. - Income Statement[5]

Quantum Genomics Corp.	1HA	2HA	2019 A	1HA	2HE	2020 E	1HE	2HE	2021 E	2022 E
Total Revenues (€)	€ 285	€ 76	€ 361	€ 377	€ 10,000	€ 10,377	€ 6,000	€ 6,000	€ 12,000	€ 15,000
YOY Growth	333%	1304%	407%	32%	12997%	2774%	1490%	-40%	16%	25%
Raw Materials & Supplies	€ 0	€ 89	€ 89	€ 269	€ 45	€ 314	€ 45	€ 45	€ 90	€ 90
Other Purchases & Expenses	€ 3,946	€ 3,853	€ 7,799	€ 4,837	€ 6,050	€ 10,887	€ 8,500	€ 9,000	€ 17,500	€ 18,000
Taxes	€ 9	€ 2	€ 10	€ 12	€ 5	€ 17	€ 10	€ 10	€ 20	€ 20
Wages & Salaries	€ 916	€ 814	€ 1,730	€ 813	€ 865	€ 1,678	€ 1,000	€ 1,000	€ 2,000	€ 2,100
Social Security Charges	€ 660	€ 385	€ 1,045	€ 321	€ 500	€ 821	€ 600	€ 600	€ 1,200	€ 1,250
Depreciation & Provisions	€ 7	€ 299	€ 306	€ 5	€ 300	€ 305	€ 6	€ 300	€ 306	€ 310
Other Expenses	€ 71	€ 69	€ 140	€ 75	€ 60	€ 135	€ 70	€ 70	€ 140	€ 150
Income from operations	(€ 5,324)	(€ 5,436)	(€ 10,760)	(€ 5,955)	€ 2,175	(€ 3,780)	(€ 4,231)	(€ 5,025)	(€ 9,256)	(€ 6,920)
Operating Margin	-1870%	-7119%	-2979%	-1578%	22%	-36%	-71%	-84%	-77%	-46%
Financial Income	€ 6	€ 5	€ 11	€ 3	€ 2	€ 5	€ 3	€ 3	€ 6	€ 6
Financial Expenses	€ 0	€ 0	€ 0	€ 5	€ 0	€ 5	€ 0	€ 0	€ 0	€ 0
Exceptional Items	€ 304	(€ 181)	€ 123	€ 17	€ 0	€ 17	€ 0	€ 0	€ 0	€ 0
Pre-Tax Income	(€ 5,014)	(€ 5,611)	(€ 10,626)	(€ 5,941)	€ 2,177	(€ 3,764)	(€ 4,228)	(€ 5,022)	(€ 9,250)	(€ 6,914)
Provision for Income Tax	(€ 886)	(€ 662)	(€ 1,547)	(€ 860)	€ 327	(€ 533)	(€ 634)	(€ 753)	(€ 1,388)	(€ 1,037)
Tax Rate	17.7%	11.8%	14.6%	15.0%	15.0%	14.2%	15.0%	15.0%	15.0%	15.0%
Net Income	(€ 4,129)	(€ 4,950)	(€ 9,078)	(€ 5,081)	€ 1,850	(€ 3,231)	(€ 3,594)	(€ 4,269)	(€ 7,863)	(€ 5,877)
Reported EPS	(€ 0.24)	(€ 0.27)	(€ 0.50)	(€ 0.25)	€ 0.08	(€ 0.14)	(€ 0.14)	(€ 0.16)	(€ 0.29)	(€ 0.20)
Basic Shares Outstanding	16,886	18,065	18,065	20,500	23,000	23,000	25,000	27,000	27,000	30,000

Source: Company Filing // Zacks Investment Research, Inc. Estimates

[5] Historical financial statement information presents data as originally reported.

HISTORICAL STOCK PRICE

Quantum Genomics Corp. – Share Price Chart (€)[6]

[6] Source: barchart.com

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