Press Release
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Quantum Genomics enters a new phase of maturity with its BAPAIs Fast Growth strategic plan

Quantum Genomics (Euronext Growth - FR0011648971 - ALQGC), a biopharmaceutical company developing a new class of drugs directly acting on the brain to treat unmet medical needs in the field of cardiovascular diseases, presents its 3-year strategic plan.

BAPAIs FAST GROWTH IN BRIEF - A proactive and pragmatic strategy

Approval of the International Non-proprietary Name by the World Health Organisation:

- **QGC001 becomes FIRIBASTAT**

Acceleration of the research programmes:

- Arterial hypertension: **completion of the NEW-HOPE study brought forward to December 2018**
- Improvement in the pharmaceutical formulation of the drug candidate to facilitate its market access
- Heart failure: **early launch of a phase IIb study in the 4th quarter 2018, on the basis of good product safety in heart failure patients**
- **A strengthened ambition:** prepare the marketing of a therapeutic class patented worldwide to treat resistant arterial hypertension and heart failure

A value-creating strategy to **decisively target the pharmaceutical market**:

- **To sign a strategic partnership or license agreement with a pharmaceutical group within 24 months**

Jean-Philippe Milon, CEO of Quantum Genomics, says:

"*Quantum Genomics is at a turning point in its history. Our drug candidate has begun to produce promising results in arterial hypertension and heart failure in humans. Our BAPAIs Fast Growth strategy aligns and accelerates our priorities as we move closer to the marketing of our drug candidate. This includes fast-tracking the research to demonstrate our product's potential in a heightened timeframe. It is encouraging to note we have garnered the interest of several pharmaceutical companies. We are setting a target of twenty four months to sign a partnership with a pharmaceutical group, which we anticipate will create value not only for our patients but also Quantum Genomics' valued shareholders.*"

An organisation aligned with the objectives of BAPAIs Fast Growth

On 9 April, 2018, Quantum Genomics made some changes to its leadership structure. Lionel Segard remains founding chairman and will continue to oversee research activities. With his significant experience in the pharmaceutical industry and cardiovascular disease, Jean-Philippe Milon now assumes the position of CEO, and will oversee the implementation of BAPAIs Fast Growth. Executive Committee members now include Jean-Philippe Milon, Marc Karako as CFO, Bruno Besse as Chief Medical Officer and Fabrice Balavoine as Vice President Research & Development.

The complementary nature of the management team, together with its wide experience in the industry, research and cardiology, firmly positions the company to execute BAPAIs Fast Growth.

Approval of the generic name *firibastat* by the World Health Organisation

The World Health Organisation approved the International Non-proprietary Name (INN or generic name) **firibastat**[1] for the active ingredient developed by Quantum Genomics, until now known by the code name RB150 or QGC001. This name, recognised worldwide, is designed to be used without ambiguity by all health care professionals. This generic name is especially important for identifying, prescribing and dispensing drugs safely.

"***It is a usual step in drug development but it remains an important symbol and a mark of recognition of the innovative nature of our product,***" emphasises Fabrice Balavoine, VP Research & Development.

Accelerated research programmes

firibastat: the advantages of a new therapeutic pathway –three mechanisms of action with just one product

Quantum Genomics is exploring a new therapeutic pathway (BAPAIs or Brain Aminopeptidase A Inhibition) which targets the renin-angiotensin system, directly in the brain. Through a triple mechanism of action, firibastat makes it possible **for the first time in monotherapy to produce a simultaneous effect on the arteries, heart and kidney,** and offers promising perspectives in the treatment of arterial hypertension and heart failure. **Started in 2012, clinical development is picking up pace.**

Arterial hypertension: schedule acceleration – the date of the end of the phase IIb study is brought forward to December 2018

The Phase IIb NEW-HOPE study, launched in November 2017, is making faster progress than expected since almost half of the 250 patients targeted (in 25 American centres) have already been recruited. The recruitment is in keeping with the selection criteria defined by Quantum Genomics for targeting patients at higher cardiovascular risk. Fifty percent of the patients recruited are from ethnic minorities, usually under-represented in studies despite the general recommendations issued by the FDA (Food and Drug Administration) for better representativeness of the American population in the clinical research phase.

The accelerated schedule is a highly positive signal which bears witness to the doctors and researchers' trust in the molecule, and proof of their need for new treatments potentially able to control hypertensive patients who are resistant to the current treatments. **Quantum Genomics has therefore decided to escalate efforts to complete the study before the end of 2018.**

[1] WHO Drug Information, Vol. 32, No. 1, 2018

Development of tablets for single daily doses: Anticipating market expectations

Quantum Genomics intends **to develop controlled-release firibastat tablets that can be administered in a single dose**. By the end of the year, a clinical trial will be started on healthy volunteers to evaluate the pharmacokinetic parameters of the new formulation. Firibastat is for the time being administered twice a day, a conventional choice in the development of a drug candidate, to maximise patient exposure to the product and to ensure good tolerance from the initial research phases.

This initiative should reinforce the attractiveness of firibastat and a near final drug formulation will be made available from 2019. The single dose posology has a strong impact on the product sale price and is important for accessing certain markets, especially Japan. Finally, it will be important to maximise treatment compliance and to simplify the development of combinations containing both firibastat and other antihypertensive agents.

Heart failure: Early launch of a Phase IIb study

The good tolerance from firibastat observed in the first heart failure patients in the phase IIa QUID-HF study led Quantum Genomics, in agreement with its Scientific Advisory Board, to **anticipate the launch of the Phase IIb study** without waiting for the final results of QUID-HF. The design of this new study, the details of which will be announced next June, are based both on the good results of the latest animal studies and on the safety data in humans, which will make it possible to simplify the screening criteria without exposing patients to risks. The new trial will include a larger number of patients experiencing **heart failure after myocardial infarction**, which represents more than 50% of patients with heart failure. It will be **conducted both in Europe and in the United States**. The principal investigator will be Prof. Gilles Montalescot (Paris, France), Professor of cardiology and Clinical Director of the Cardiology Department at La Pitié-Salpêtrière hospital in Paris. He will receive support from a steering committee comprising European and American experts.

The study will be launched in the last quarter 2018 and the results are expected in the second half of 2020.

"The clinical development of firibastat is entering a new dimension. The faster than expected recruitment in NEW-HOPE is an encouraging sign which confirms the good tolerance of the product and which leads us to now prepare our continuing developments in resistant arterial hypertension. In heart failure, the future Phase IIb study will target patients with heart failure after myocardial infarction, which is the cornerstone of all major developments in this indication. This acceleration is made possible thanks to the close collaboration between the research and preclinical and clinical development teams and by the mobilisation of all our operational forces to demonstrate the efficacy of our new therapeutic group," specifies Bruno Besse, Chief Medical Officer.

Reinforcement of industrial property

Firibastat is protected until the 3rd quarter 2031, with a possible 5-year extension from the date of marketing, and Quantum Genomics has already **the exclusive operating rights on the main target markets that are the United States, Japan, China, Russia, South Africa and Israel**. The manufacturing process for firibastat and its use in combination are also protected.

As part of its strategic plan, Quantum Genomics intends to reinforce its industrial property by **filing for several new patents by the end of 2018, especially those covering firibastat as active ingredient in Europe and in South Korea**. At the same time, the company is expected to file **new patent applications to protect the pharmaceutical formulations developed along with several new chemical series** of cerebral aminopeptidase A inhibitors identified in the medicinal chemistry programme.

Secured financial resources for faster development

A flexible line of funding set up at the beginning of 2018 by Kepler-Cheuvreux is used to finance this new development schedule and to progress as rapidly as possible on the various fronts.

The company already has the authorisation to use the first tranche of €6M which may be drawn according to the requirements relating to acceleration of NEW-HOPE. The next three tranches, representing €18M and submitted for approval at the next shareholders' general assembly, will be used according to the company's financing requirements.

"*This funding line, which combines the flexibility of a standby credit line with the stability of the resources resulting from a standard increase in capital, provides Quantum Genomics with the capacity to seize opportunities emerging in a dynamic market in the search for new cardiovascular treatments,*" explains Marc Karako, CFO.

A value-creating strategy decisively targeting the pharmaceutical market

This new strategic plan, built to meet the needs of industrialists in the sector, should enable Quantum Genomics to sign a partnership or a licence agreement with a pharmaceutical group in the next two years.

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About Quantum Genomics

Quantum Genomics is a biopharmaceutical company that specialises in the development of a new class of cardiovascular medications based on brain aminopeptidase A inhibition (BAPAI). Quantum Genomics is the only company in the world exploring this innovative approach that directly targets the brain. The company relies on its 20-plus years of basic and clinical research at some of the largest French laboratories: the French National Institute of Health and Medical Research (INSERM), the French National Centre for Scientific Research (CNRS), the Collège de France, and Paris-Descartes University. The goal of Quantum Genomics is to develop innovative treatments for complicated, or even resistant, cases of hypertension (around 30% of patients have poor control of their condition or receive ineffective treatment) and for heart failure (one in two patients diagnosed with heart failure dies within five years).

Based in Paris and New York, the company is listed on the Euronext Growth exchange in Paris (FR0011648971—ALQGC) and trades on the OTCQX market in the United States (symbol: QNNTF). Click here for more information about Quantum Genomics. Follow us on Twitter and LinkedIn.

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- APPENDIX -

Cardiovascular diseases, a public health challenge

Cardiovascular diseases are **the first cause of mortality in the world**, causing 17.5 million deaths, representing 31% of total global mortality.[2] In France alone, despite considerable therapeutic progress, cardiovascular diseases are the root cause of around 140,000 deaths per year; they are also **one of the main causes of morbidity** with 11 million patients treated for vascular risk.[3] In total they represent 28 billion euros annual expenditure.

Arterial hypertension, the most common cardiovascular disease

Arterial hypertension is a **silent killer**, not always diagnosed as there are no symptoms. Even if a blood pressure reading is practically a matter of routine at any medical check-up, only half of adults with high blood pressure know they are hypertensive, and among the patients treated, only half have well-controlled blood pressure. However, arterial hypertension is a common disease (it affects one in three adults) the complications of which are severe as it causes 62%[4] of cases of stroke for example.[5]

Heart failure, the 1st cause of hospitalisation in France among adults

40 million[6] people suffer from heart failure worldwide and more than 1 million in France alone. The frequency of the disease has doubled in 10 years. Heart failure kills and its prognosis is always especially dark.

Restrictive and not always effective treatments

The most recent drugs used in arterial hypertension and heart failure inhibit the Renin Angiotensin Aldosterone system peripherally, which is one of the key elements of cardiovascular system regulation.

In arterial hypertension, current treatments, often used in bi or tritherapies, often have unpleasant side effects and at least 30% of hypertensive patients are poorly controlled, or even resistant. Also, 50% of patients taking an antihypertensive stop taking it within 1 year.[7]

In heart failure, different families of treatments can be combined depending on the patient, however morbidity and mortality are not lower: half of the patients die in the 3 to 5 years following onset of the symptoms of heart failure.[8]

The new therapeutic group developed by Quantum Genomics is therefore promising for millions of patients worldwide.

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[2] Source: WHO | Cardiovascular Diseases - Fact sheet - January 2015

[3] Source: French Ministry of Health and Solidarity – Cardiovascular diseases

[4] Source: INSERM – Arterial Hypertension dossier

[5] Stroke: After a stroke, 1 in 5 people die in the following month, 3/4 of survivors have permanent sequelae, 1/3 become dependent, 1/4 can never work again - France AVC

[6] Tayal et al. Genetics and genomics of dilated cardiomyopathy and systolic heart failure. Genome Medicine (2017) 9:20

[7] Source: LEEM – How to improve treatment compliance

[8] Source: Novartis, Heart failure and the French: decrypting the perception study "The heart of French people" | Franzin-Garrec M. Heart failure. A chronic disease on an alarming rise