

## Analyst Report

Coverage initiated on November 4<sup>th</sup>, 2014

Aurgalys is contracted by Quantum Genomics to provide equity research

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Quantum Genomics

Alternext: ALQGC [FR0011648971]

January 6<sup>th</sup>, 2016**Estimated price:**

€16.78

**2016, a decisive year for Quantum Genomics**

Share price (€) (as of Jan. 6 <sup>th</sup> , 2016)	8.19
High/Low (€) (since Jan. 1 <sup>st</sup> , 2016)	8.52/8.10
Market Cap. (€M) (as of Jan. 6 <sup>th</sup> , 2016)	56.7
Estimated Net Cash (€M)	8.5
Estimated Market Cap. (€M)	116.3
Number of shares (M)	6.93
Estimated price (€)	16.78
3-month average daily volume	24,000
Free Float	43.2%

Quantum Genomics develops cutting edge drugs (Brain Amino-Peptidase Inhibitors, BAPAI) for cardiovascular diseases, with unmet medical needs, and more specifically, resistant hypertension and heart failure. The company just announced it successfully completed the recruitment of the Phase 2a trial for QGCOO1, a first-in-class drug candidate for the treatment of hypertension. Preliminary results are expected in Q3-2016, ahead of schedule, and could provide the first proof of efficacy for BAPAI to treat cardiovascular diseases. 2016 is therefore an important year for Quantum Genomics, since it would benefit the company's strategy to address this highly lucrative market, which has seen little innovation in recent years. In order to maximise the value of its drug portfolio, Quantum Genomics is also developing its drug in heart failure, another major segment in the market of cardiovascular diseases, and intends to initiate a second phase 2 trial on this indication by mid-2016. The company may also reap the benefits from its development strategy if its partner in animal health exercises an option to further develop Quantum's drug for veterinary use. Considering the potential of each program, we increased our valuation of Quantum Genomics to €16.78/ share.

**Quantum Genomics, a disruptive technology for the highly lucrative market of cardiovascular diseases**

Quantum Genomics is developing a new class of drugs, the Brain Amino-Peptidase Inhibitors (BAPAI), which have the promising potential to treat cardiovascular diseases of strong medical needs. The company's lead drug, QGCOO1 is currently in Phase 2a for hypertension and a phase 2a trial for QGC101 in heart failure is expected to start in 2016.

Cardiovascular diseases represent a group of serious disorders affecting the heart and blood vessels and are characterized by a large prevalence worldwide as well as a high mortality rate (approximately 15 million annual deaths according to the WHO). Hypertension and heart failure are two of the major cardiovascular diseases, accounting for 2/3 of death from cardiovascular diseases. Although numerous drugs have been developed,

these diseases represent a big healthcare and economic burden, since the current therapeutic arsenal remains inefficient for a significant number of patients. According to Global Data, the total cardiovascular disease market is estimated to reach \$107 B in 2018, driven by an increase in the elderly population and behavioural changes in emerging countries. The top 5 pharmaceutical companies active in the field of cardiovascular diseases generated more than \$28B in 2014.

With strong competition from generic drugs, and the expiration of major blockbusters' patents, pharmaceutical groups are actively looking for new opportunities to replenish their pipeline and strengthen their presence in this highly lucrative market.

For instance, Novartis's Entresto, the heart failure drug recently launched in the US, and registered in the EU is already considered a future blockbuster, with annual sales estimated between \$2B and \$5B by 2023, according to analysts. The drug is a combination of a neprilysin inhibitor (sacubitril) and angiotensin II antagonist (valsartan), two already existing cardiovascular drugs. This enthusiasm from analysts and health authorities is attributable to the crucial need for new drugs in this market that has seen little innovation in recent years.

Thanks to a unique mechanism of action, targeting the brain renin-angiotensin system, Quantum Genomics' BAPAI could revolutionize the treatment of cardiovascular diseases by providing solutions to patients who currently have no therapeutic options. The company could open new paths in the treatment of these patients, while firmly establishing itself in a profitable market, with blockbuster drug candidates.

Quantum Genomics' strategy is to carry out the early development of drug candidates, until mid-Phase 2 or end of Phase 2, and then to make a strategic alliance with a large pharmaceutical company which would be responsible for late stage development and marketing. Quantum Genomics' revenue would consist of upfront and milestone payments from the licensing agreement and royalties on sales.

## Quantum Genomics' 2015 achievements

Quantum Genomics successfully raised €12.9M in February 2015 to conduct its clinical program of its lead drug candidate QGC001. The company achieved numerous milestones in 2015, strengthening its development strategy to address the cardiovascular disease market.

- **QGC001 in resistant hypertension**

In March 2015, Quantum Genomics initiated a crossover, randomized, double blind phase 2a study, in order to demonstrate that its lead drug candidate QGC001 can control blood pressure in hypertensive patients. QGC001 is a first-in-class drug which could address resistant hypertension, a condition affecting 10% to 15% of hypertensive patients. In September 2015, the company announced they successfully enrolled

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*Euronext since Jan. 1<sup>st</sup>, 2016*

<b>Quantum Genomics</b>	<b>-3.8%</b>
<b>Alys France*</b>	<b>-1.0%</b>
<b>Next Biotech</b>	<b>-2.2%</b>
<b>CAC Pharma.&amp;Bio.</b>	<b>-1.4%</b>
<b>CAC 40</b>	<b>-3.4%</b>
<b>CAC Small</b>	<b>-1.5%</b>

\* Index of French smallcaps (less than €1B market capitalization at time of inclusion) in the healthcare and life sciences sector, listed on Euronext Paris.

See <http://www.aurgalys.com/aurgalys-indices>

50% of the patients for the study, ahead of schedule. Moreover, the Data Safety Monitoring Board (DSMB), a panel of independent experts, also recommended the continuation of the study without any changes in the protocol, since no serious adverse events were recorded.

- **QGC101 in heart failure**

*Promising results in animal health*

Quantum Genomics announced promising preclinical results for QGC101 in dogs suffering from congestive heart failure. Quantum Genomics' partner, a major player in the field of animal health, showed QGC101's efficacy in improving the cardiac ejection fraction, after 28 days of treatment. Based on these results, and according to their agreement, the partner is to decide whether to exercise an option to further develop the drug in animal health. The partner's decision originally planned for late 2015 was postponed to 2016, after signing a letter of intent to reaffirm its interest in Quantum Genomics' drug.

*Acceleration of the Heart Failure program*

Following the positive preclinical results, Quantum Genomics also announced the acceleration of its program in congestive heart failure, and the launch a new phase 2a trial on this indication by mid-2016 (instead of 2017). Congestive heart failure (CHF) is the 3rd leading cause of mortality among cardiovascular diseases, affecting 1-2% of adults in developed countries, and up to 10% of people over 70 years old. The disease also represents a heavy economic burden, with associated costs expected to reach \$51B by 2030 (Heidenreich et al, 2013). The company's strategy is to capture the maximum value of its drug portfolio by increasing the market potential of its lead product. Quantum Genomics could generate short term revenues if its partner exercises the option in animal health, although the strongest sales potential for QGC101 resides in the human indication.

## **2016 to be a pivotal year for Quantum Genomics**

The most significant milestone for Quantum Genomics in 2016 will be the publication of the Phase 2a preliminary results in hypertension, which could provide the first proof of concept of QGC001 in humans. Quantum Genomics has just announced the end of recruitment of the trial. Seventy-five percent of the enrolled patients have already completed the study and the final patients are expected to end the study in April 2016. The preliminary results should be available in Q3-2016, ahead of schedule.

Another milestone would be the decision from Quantum Genomics' animal health partner to exercise the option to further develop QGC101 in congestive heart failure.

Moreover, independent of the option on the animal health deal, Quantum Genomics intends to initiate a phase 2a clinical program in heart failure, whose design and study endpoints have yet to be communicated. This

second trial is expected to start in mid-2016. It will be international and multicentric, led by a key opinion leader in this field.

## Valuation

We increased our valuation of Quantum Genomics due to rolling forward and to an adjustment of our model. For instance, the company originally planned to license QGC001 after Phase 2a results. With a Phase 2b study currently being prepared, the company intends to conduct the confirmatory trial, allowing the company to keep more value before licensing the drug to a pharmaceutical group. In our previous valuation model, we anticipated a €180 M deal for QGC001, which has been increased to €325 M. The valuation for Quantum Genomics is €107.8 M (Enterprise Value), or €16.78 /share when taking into account an estimated net cash of €8.5 M.

## Upcoming news flow

- H1-2016: Potential partnership agreement for QGC101 in the field of animal health (heart failure)
- Q2/Q3-2016: Initiation of the Phase 2a study with QGC101 (heart failure)
- Q3-2016: Primary results from the phase 2a study with QGC001 (hypertension)

## Stock Performance

Quantum Genomics' shares gained more than 49.3% in 2015, closing at €8.51 on December 31st, 2015. This is higher than the January 2015 public offering price of €6.30. In June 2015, the value of Quantum Genomics' shares more than doubled compared to the beginning of the year, and reached an all-time high of €14.27. Investors anticipated the positive preclinical results of QGC101 in congestive heart failure, obtained by Quantum's partner in animal health. In the summer of 2015, Quantum Genomics was negatively affected by macroeconomic events but the share price has remained stable above €8.00 during the last 4 months of 2015. Quantum Genomics outperformed other French biotech/medtech smallcaps in 2015 (49.3% vs 8.6% for Alys France, and 14.8% for Alys Therapeutics).

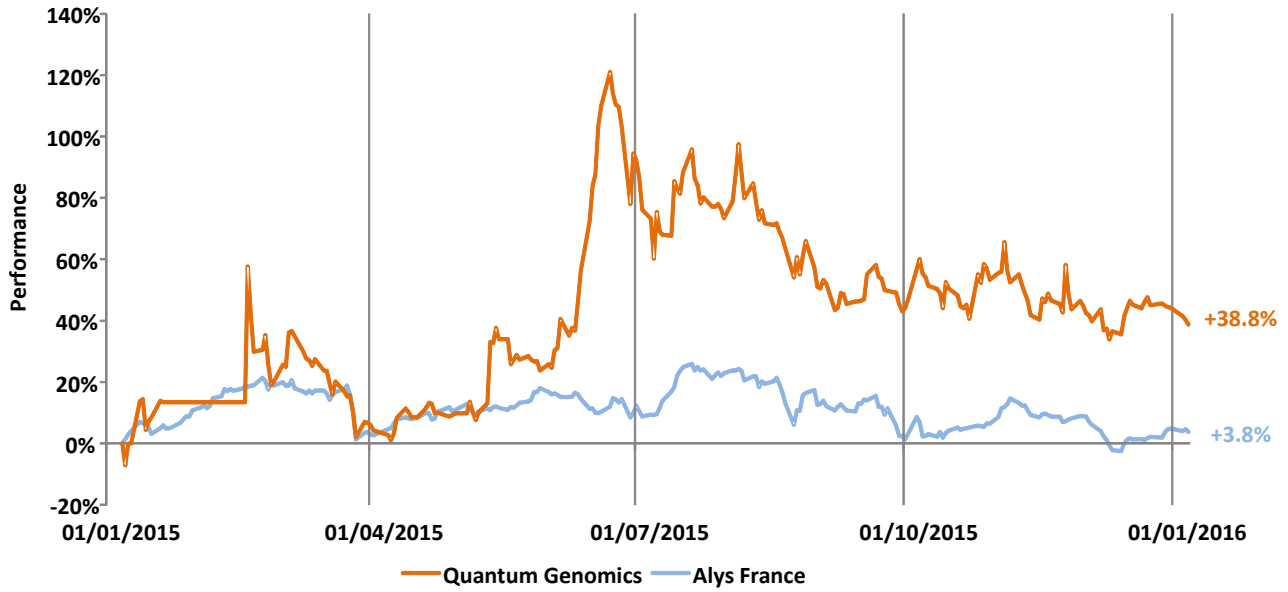


Figure 1. Quantum Genomics' one-year stock performance as of January 6<sup>th</sup>, 2016, compared to other French smallcaps of the healthcare and life sciences sector (Alys France Index)

## Financial Data

EARNING PER SHARE €				
	2013	2014	2015e	2016e
EPS	-0,38	-0,46	-0,57	-0,81
EPS (Diluted)	-0,33	-0,40	-0,52	-0,75

INCOME STATEMENT €M				
	2013	2014	2015e	2016e
<b>Revenue</b>	<b>0,0</b>	<b>0,3</b>	<b>0,2</b>	<b>0,2</b>
EBITDA	-1,9	-2,4	-4,6	-6,8
EBIT	-1,9	-2,5	-4,7	-6,8
<b>Net Income</b>	<b>-1,5</b>	<b>-2,2</b>	<b>-4,0</b>	<b>-5,6</b>

CASH FLOW STATEMENT €M				
	2013	2014	2015e	2016e
Net Income	-1,5	-2,2	-4,0	-5,6
Cash Flow from operation activities	-1,0	-2,8	-3,6	-4,5
Cash Flow from investing activities	-0,1	-0,4	-0,2	-0,3
Cash Flow from financing activities	1,4	6,1	9,9	-0,1
<b>Change in cash</b>	<b>0,3</b>	<b>2,9</b>	<b>6,2</b>	<b>-4,9</b>

BALANCE SHEET €M				
	2013	2014	2015e	2016e
<b>ASSET</b>				
Non current assets	0,5	0,6	0,6	0,8
Current assets	1,1	4,1	10,3	5,4
Including cash and equivalent	0,3	3,3	9,5	4,5
<b>Total Asset</b>	<b>1,7</b>	<b>4,8</b>	<b>10,9</b>	<b>6,2</b>
<b>LIABILITIES AND SHAREHOLDER'S EQUITY</b>				
Total Equity	-1,6	-0,1	8,8	3,2
Total Liabilities	3,3	4,9	2,1	3,1
<b>Total Liabilities and shareholder's Equity</b>	<b>1,7</b>	<b>4,8</b>	<b>10,9</b>	<b>6,2</b>

## Résumé en français

Quantum Genomics qui développe une nouvelle classe de médicaments innovants contre les maladies cardiovasculaires à fort besoins médicaux (les BAPAI), pourrait franchir des étapes décisives en 2016. Après une année 2015 marquée par le succès de son introduction en bourse et le démarrage d'une étude clinique de phase 2a dans l'hypertension avec son candidat le plus avancé QGCO01, la société pourrait dès cette année obtenir les premières données d'efficacité de son médicament chez l'homme. La société vient d'ailleurs d'annoncer la fin du recrutement des patients pour cette étude, en avance sur le calendrier initial, lui permettant d'avancer la communication des résultats préliminaires dès le T3-2016. En cas de résultats positifs, Quantum Genomics n'exclut pas l'éventualité de mener elle-même les études de phase 2b pour confirmer le potentiel du médicament. Cette stratégie permettrait à la société de conserver un maximum de valeur de son portefeuille en cas d'accord de licence avec un grand groupe pharmaceutique. De même, Quantum Genomics a décidé d'accélérer son programme de développement dans l'insuffisance cardiaque et lancera courant 2016, une étude de phase 2a. Par ailleurs sur cette même indication, la société est actuellement en discussion avec un acteur pharmaceutique majeur et espère arriver dans les prochains mois à un accord pour le développement de son médicament dans la santé animale. Une « cerise sur le gâteau » qui permettrait de générer des revenus à moyen terme en attendant un partenariat en santé humaine. Compte tenu de ces perspectives, nous augmentons notre objectif de cours de Quantum Genomics à 16.78€ / action.

## Disclaimer

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## About Aurgalys indices

Aurgalys launched on October 2013, the Alys France index measuring the performance of the 59 French smallcap companies (less than €1B of market capitalization) listed on Euronext/Alternext Paris. Four other indices also measure the performance of companies dedicated to the development of therapeutic molecules (Alys Therapeutics), diagnostic tests (Alys Diagnostics), medical devices (Alys Medtech) and Greentech (Alys Greentech). You can find our reports on our website at <http://www.aurgalys.com/aurgalys-indices>



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