
biophytis
LIVE HEALTHIER LONGER
March 2020 I Euronext, EPA: ALBPS

Forward Looking Statements

All statements pertaining to future financial and/or operating results, future growth in research, clinical development, and potential opportunities for Biophytis SA and its subsidiaries (the “Company”) and its products, along with other statements about the future expectations, beliefs, goals, plans, or prospects expressed by management constitute forward-looking statements.

Any statements that are not historical fact (including, but not limited to, statements that contain words such as “will,” “believes,” “plans,” “anticipates,” “expects,” “estimates”) should also be considered to be forward-looking statements.

By their nature, forward-looking statements involve risks and uncertainties, including, without limitation, risks inherent in the development or commercialization of potential products, uncertainty in the results of clinical trials or regulatory approvals, need and ability to obtain future capital, and other risks, please refer to the Risk Factors (“Facteurs de Risque”) section of the Listing Prospectus upon the admission of Company’s shares for trading on the regulated market Euronext Growth of Euronext Paris filed with the AMF, which is available on the AMF website (www.amf-france.org) or on the Company’s website (www.biophytis.com).

Actual results may differ materially from the results anticipated in these forward-looking statements and as such should be evaluated together with the many uncertainties that affect the Company's business. Any forward-looking statements that we make in this presentation speak only as of the date of such statement, and we undertake no obligation to update such statements to reflect events or circumstances after the date of this presentation, except as required by law.

A clinical-stage biotechnology company in age-related diseases

Our goal

Prevent disabilities (mobility and vision) and increase **health span** for patients suffering from **age-related diseases**

Small molecules derived from plants which stimulate **biological resilience** developed by **reverse pharmacology**

Neuromuscular diseases

Lead candidate BIO101 (Sarconeos) developed in :

Sarcopenia: Clinical Phase 2b

A geriatric chronic muscular dystrophy

Duchenne's Muscular Dystrophy (DMD): IND granted

A pediatric genetic muscular dystrophy

Retinal diseases

Pre-clinical drug candidates Macuneos (BIO201, BIO203) for diseases of the retina, such as Dry Age-related Macular Degeneration (AMD) and Stargard's disease

Animal POC obtained

Modern drug discovery process, inspired by traditional medicine

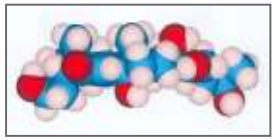
Our technology

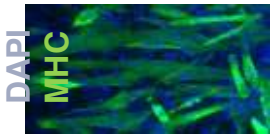
Reverse pharmacology for drug candidates in Age Related diseases

Build a proprietary collection of natural molecules & analogs from medicinal plant, produced under biotic or abiotic stress

Screen in cellular models of age related diseases and identification of targets & pathways

Selection of best drug candidates based on animal models of aging or genetic diseases



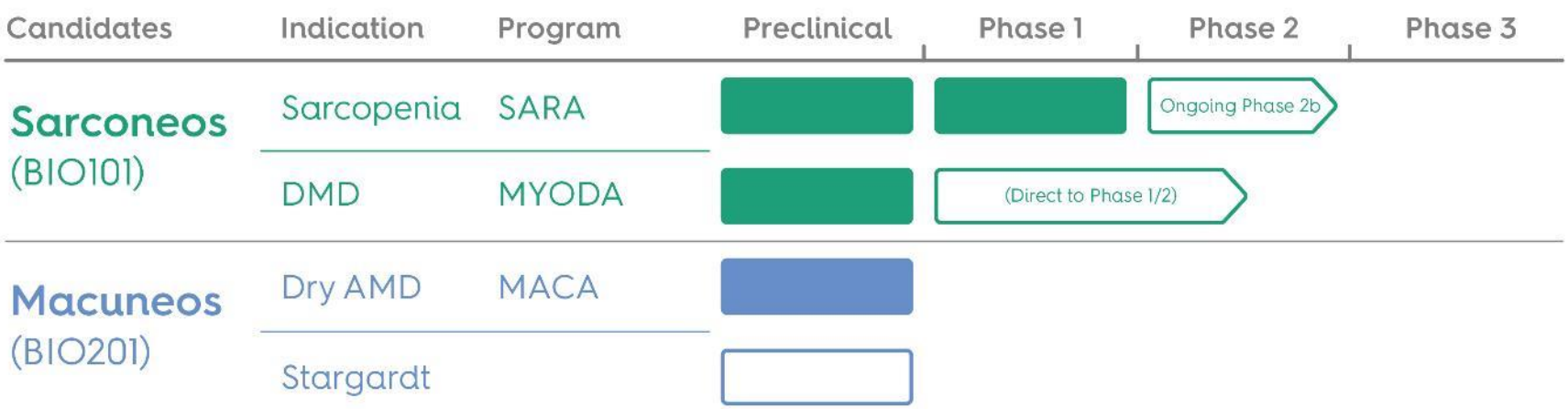


- **BIO 101: Muscular Dystrophy**
- **BIO 201:Retinopathy**
- **Followed by BIO103 & BIO203**

- Small molecules: natural and/or NCE
- New target key for aging
- Preclinical proof-of-concept & safety
- IP on use, process and composition of matter

biophytis

Our clinical pipeline for worldwide development



- Second generation drug candidates, BIO103 and BIO203, are life-cycle extension candidates in the preclinical Phase

SORBONNE UNIVERSITÉ
CRÉATEURS DE FUTURS DEPUIS 1257

INSTITUTE OF MYOLOGY

INSTITUT DE LA VISION
PARIS

Biophytis

Executive team

Stanislas Veillet - Founder & CEO

- PhD in genetics, AgroParisTech
- 25+ years in biotech; Pharmacia-Monsanto, Danone Group

Samuel Agus - CMO

- MD, PhD, Board-certified Neurologist
- 15+ years pharma/biotech experience including Abbott, Shire and Teva Pharmaceuticals

Pierre Dilda - CSO

- 20+ years experience in pharmaceutical research, in both academic and industrial settings
- 50+ scientific publications

Manfred Horst - BD Officer

- MD, PhD, MBA
- 30+ years pharma experience; including Ciba-Geigy/Novartis and 12 years BD for Merck & Co.

Evelyne Nguyen- CFO

- 25+ years of experience in Corporate Finance for International Pharma & Biotech companies (BMS, LFB)
- Expertise in cross-borders transactions between Europe, US and Asia

Wally Dioh - COO

- PhD in phytopathology (Paris XI) and MBA
- 21+ years biotech experience in France and the U.S. and R&D at Monsanto

Scientific advisory board

Pr. Jean Mariani

- Professor of neuroscience and biology of aging and Director of Charles Foix Institute of Longevity at Sorbonne University
- Emeritus Professor (PU-PH) at the Sorbonne University's School of Medicine
- Member of the Board and Executive committee of Gerond'IF

René Lafont

- Professor emeritus and former Dean of the life sciences department at Sorbonne University
- 185 scientific articles + 59 reviews and book chapters

Pr. Jose-Alain Sahel

- Chair of the department of ophthalmology at University of Pittsburgh School of Medicine and director of the UPMC eye center
- Founder and director of the Vision Institute in Paris and professor at the Sorbonne's medical school

Dr. Roger Fielding

- Professor of Medicine, Tufts University School of Medicine
- Director and Sr. Scientist Jean Mayer USDA Human Nutrition Research Center on Aging

Dr. Thomas Voit

- Professor, University College London
- Director of the Research Centre of the Great Ormond Street Hospital for Children

Dr. Ivana Kim

- Associate Professor Harvard Medical School, Massachusetts Eye and Ear
- Co-Director of the Harvard Medical School Department of Ophthalmology AMD Center of Excellence; Associate Scientist, Massachusetts Eye and Ear

Board of directors

Stanislas Veillet - Founder & CEO

- PhD in genetics, AgroParisTech
- 25+ years in biotech; Pharmacia-Monsanto, Danone Group

Pr. Jean Mariani

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- Emeritus Professor (PU-PH) at the Sorbonne University's School of Medicine
- Member of the Board and Executive committee of Gerond'IF

Jean M. Franchi

- Merrimack Pharma CFO
- 30+ years as finance director, including 15 years at Genzyme

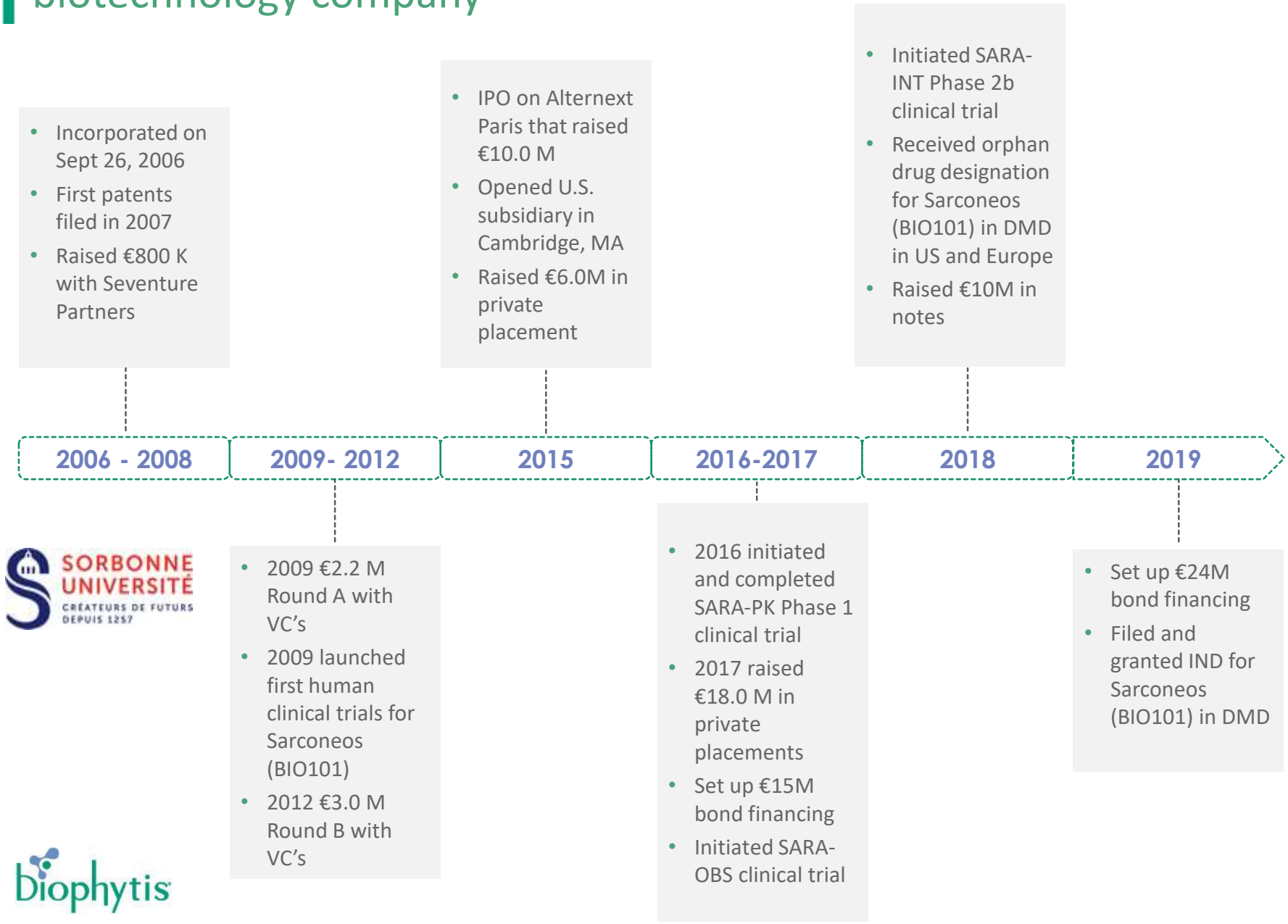
Dimitri Batsis

- Entrepreneur
- Founder of Zeni Corporation, Drone Volt
- 20 years in the technology sector

Nadine Coulm

- IR Director for Korian
- 20 years of IR experience with FNAC, BNP Paribas, Danone & Casino

From a Sorbonne University spin-off to a successful clinical-stage biotechnology company



Overview

Sarconeos (BIO101) for sarcopenia

Sarconeos (BIO101) for DMD

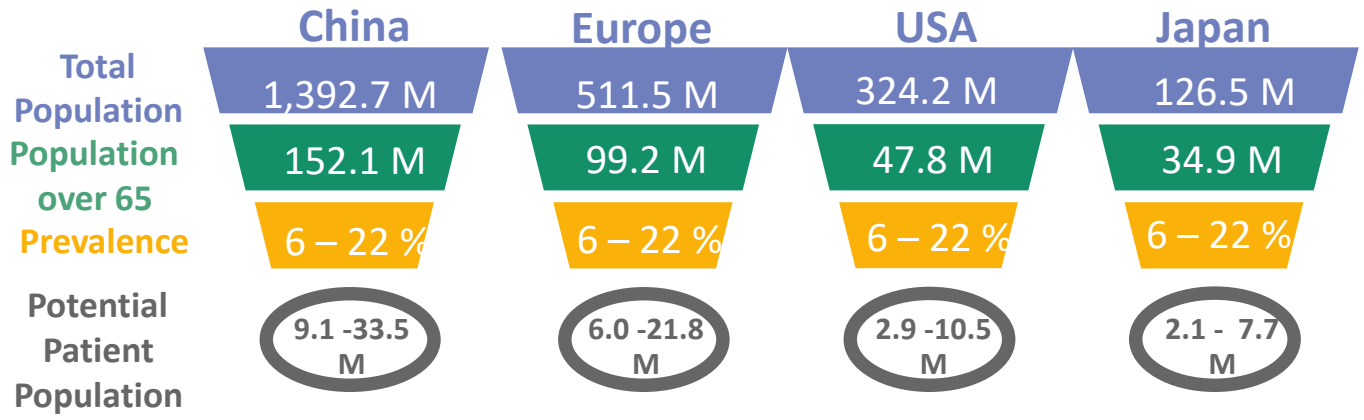
Macuneos (BIO201) for dry AMD

Sarcopenia: a large unmet medical need with no approved drug

- Age-related degeneration of skeletal muscle characterized by **a loss of muscle mass, strength and functional issues** such as the ability to stand and/or walk
- A major cause of mobility disability, resulting in **a loss of independence and increased risk of adverse events (falls)**, which can shorten life expectancy

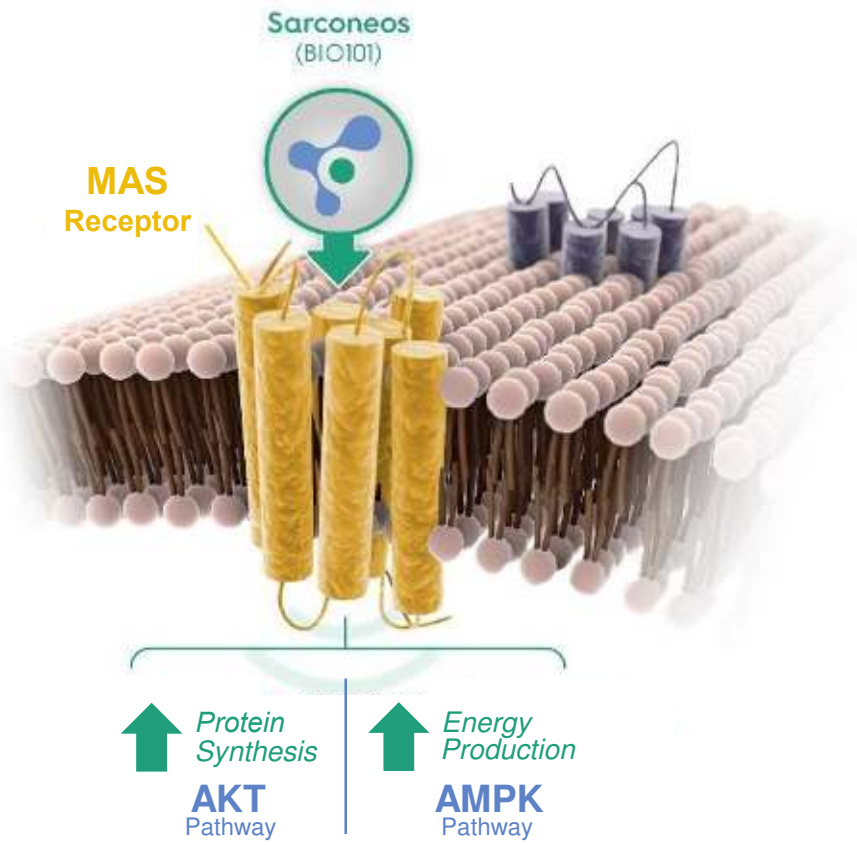
Sarconeos (BIO101):

- ✓ **Only drug candidate currently being tested in Phase 2 for sarcopenia**
- ✓ Myostatin inhibitors halted for lack of efficacy in neuromuscular diseases



Sarconeos (BIO101) activates MAS receptor, a key factor for muscle metabolism

- MAS receptor: a key component of the Renin-Angiotensin System (RAS)
- Trigger two important downstream pathways in myocytes:

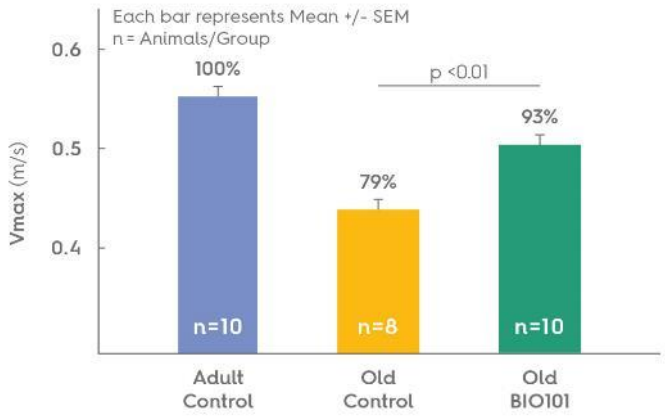


PI3K/AKT/mTOR: Increases **protein synthesis,** preserving muscle mass and increasing **muscle strength**

AMPK/ACC **Stimulates energy production**, increasing muscle strength and **mobility**

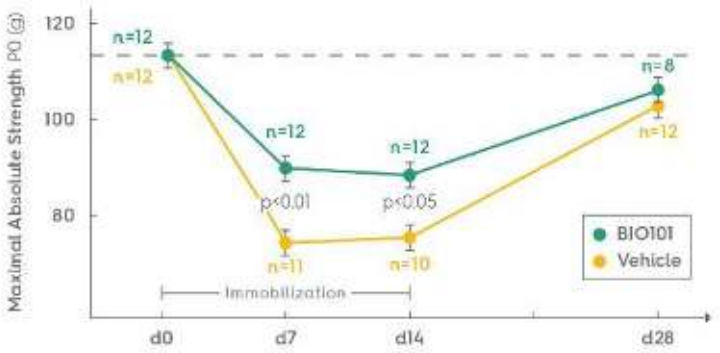
Sarconeos (BIO101) improves muscle strength and mobility in animal model

Beneficial effect on mobility in aged mice fed with high fat diet[1]



Administration of 50 mg/kg/day of Sarconeos (BIO101) demonstrated a statistically significant (p<0.01) improvement in maximum running velocity (Vmax) compared to "old" control mice, compensating almost completely for the loss of mobility due to aging

Preservation of muscle strength in immobilized mice

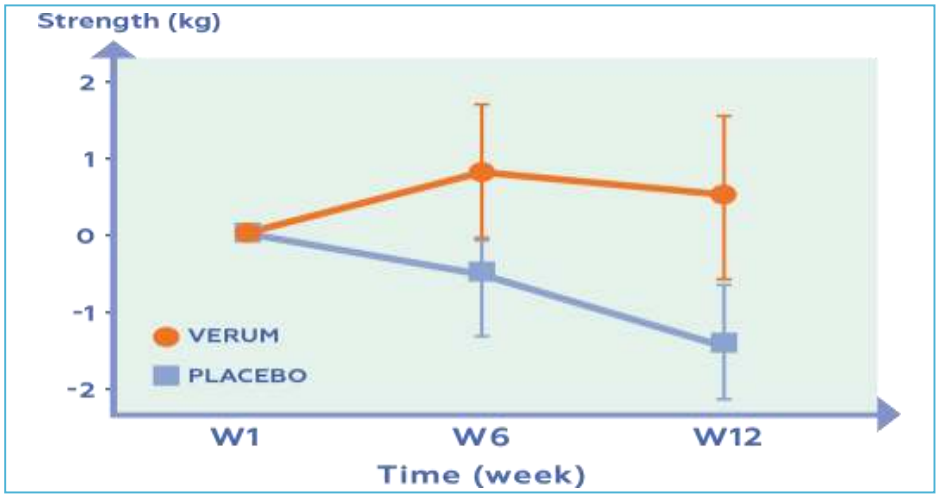


Administration of 50 mg/kg/day of Sarconeos (BIO101) demonstrated a preservation of muscle strength while immobilized (d0-d14) compared to vehicle control in hindlimb-immobilized mice

1. Results were presented in a poster at the SCWD conference in December 2016 in Berlin, Germany.

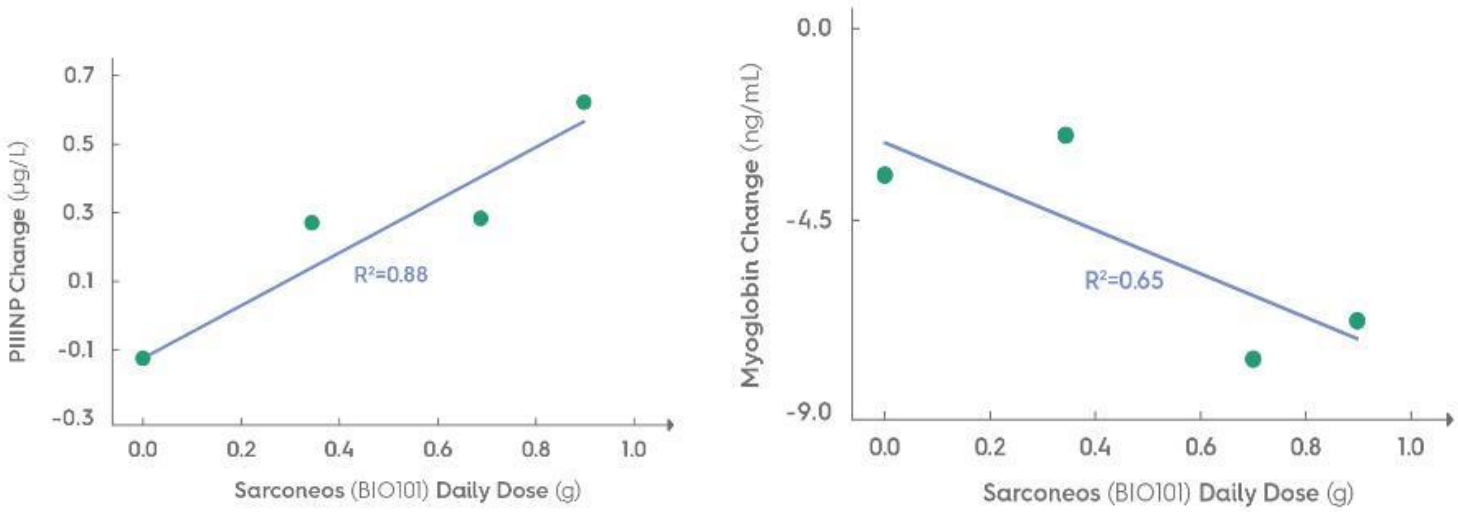
Quinolia study: effect on muscle strength in healthy volunteers

TREATMENT WITH OUR COMPOUND COMPENSATES THE DIET'S EFFECT ON MUSCULAR STRENGTH



- Objective: test the effect of our compound on muscle wasting caused by dieting
- Double-blind, placebo-controlled, nutrition study (dieting), 58 healthy obese subjects
- Oral administration (40 mg/day of 20E) for 12 weeks, with a hypocaloric diet during the first 6 weeks
- No serious adverse event and good safety profile

SARA-PK: Phase 1 trial in elderly healthy volunteers showed good safety and activity



Sarconeos (BIO101) showed a dose dependent effect on muscle growth and repair (PIIINP) and a dose dependent negative effect on muscle wasting (myoglobin)

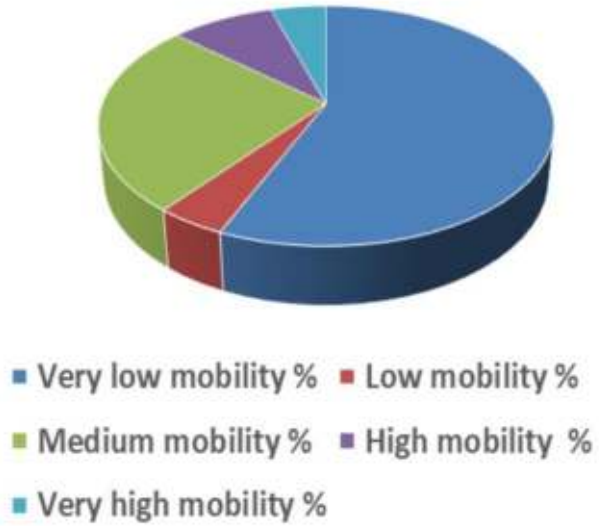
- Single and multiple ascending doses tested in 54 healthy adult and elderly volunteers (over 65 years)
- Good safety profile : No Severe Adverse Event
- **Two active doses** (175 & 350 mg b.i.d.) have been determined for our ongoing SARA-INT Phase 2b clinical trial

SARA-OBS: An OBServational trial to select patients with severe sarcopenia at risk of mobility disability

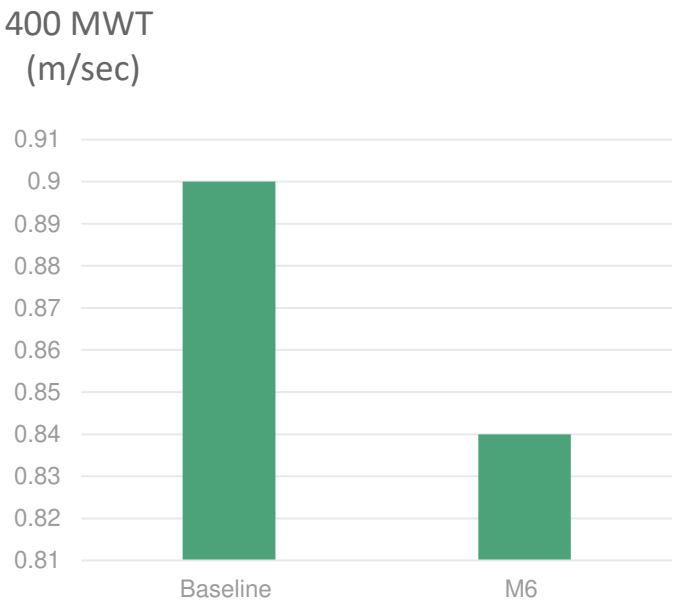
Objectives	Key Endpoints	Inclusion criteria
• To characterize sarcopenia, including sarcopenic obesity, in older patients (≥65 years) living in the community and at risk of mobility disability • To evaluate physical performance and body composition for the design of a Phase 2 interventional study on the efficacy and safety of Sarconeos (BIO101)	**Primary** • 400-meter walk test (400MWT) **Secondary** • Handgrip strength • SPPB • Patient reported outcomes (PRO)	• Men and women aged ≥ 65 years, living in the community, and reporting loss of physical function • Short Physical Performance Battery (SPPB) score ≤ 8 • ALM/BMI < 0.789 in men and 0.512 in women, or ALM <19.75 kg in men and <15.02 kg in women by DXA

SARA-OBS: targeted population is at high risk of mobility disability

Mobility pattern at baseline as measured by actimetry



Decrease of walking ability (400 MWT Gait Speed) over 6 months



Enrolled patients show low mobility and rapid decline in walking ability over 6 months that could reduced by Sarconeos (BIO101)

SARA-INT: on going Phase 2b clinical trial in sarcopenia

- Global, multicenter, double-blind, randomized, placebo-controlled trial
- 231 elderly patients with sarcopenia at risk of mobility disability
- Completion of patient recruitment and interim analysis expected in Q2 2020

Objectives	Key Endpoints	Inclusion Criteria
• Assess safety and efficacy of two doses of Sarconeos (BIO101) administered orally with a meal over 26 weeks, compared to placebo • Treatment effect on improvement of physical function and on decrease of risk of mobility disability	**Primary** • 400-meter walk test (400MWT) - 0.05 m/s is considered the minimal meaningful change **Key secondary** • Handgrip strength • 400MWT responder analysis • Patient reported outcomes (PRO)	• Age (≥65 or over) • Low mobility measured by Short Performance Physical Battery (SPPB) ≤8 out of 12 • DEXA body composition as measured by ALM/BMI (appendicular lean mass/ body mass index) • Able to exercise for 30 minutes per day 5 days per week

SARA-INT: complete enrollment expected mid 2020

"The SARA-INT Phase 2 trial is investigating a new treatment for sarcopenia, a disease of aging which is characterized by loss of muscle mass and function.
Following the supportive preliminary data, this trial will evaluate the efficacy of BIO101 on muscle function and mobility in older adults."

Dr. Roger Fielding, PhD, Director of the Nutrition, Exercise Physiology & Sarcopenia Laboratory at **Tufts University** in Boston and Principal Investigator of SARA-INT trial

Belgium

- Recruiting in U.S. and Belgium with 22 sites, including leading hospitals and geriatric centers, currently open
- More than 50% of patients have been recruited in January 2020, ramping up rapidly

USA

Source: Clinicaltrials.gov - NCT03452488

SARA-INT: results expected end of 2020

Product	2019	2020
175 & 350 mg (twice daily) of Sarconeos (BIO101)	SARA-INT Phase 2b	

- **No safety issue** to date, with multiple DSMB "may proceed" opinions
- **Interim analysis in Q2 2020** for assessing probability of success, modalities subject to greenlight from FDA
- **Reduction of the number of patients** (231 patients total) following approval by FDA of protocol amendment filed in October 2019
- **Completion of patient recruitment expected in Q2 2020**

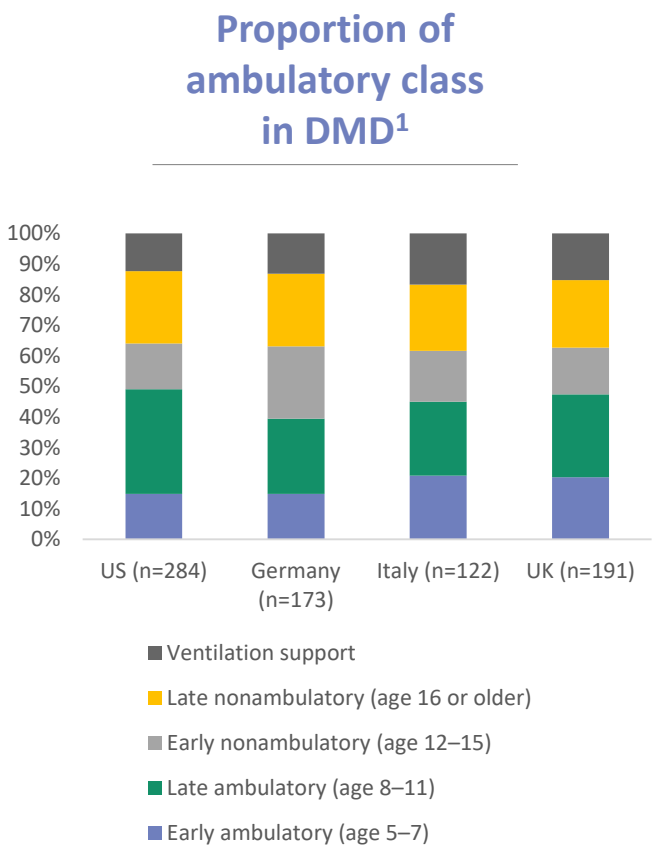
Overview

Sarconeos (BIO101) for sarcopenia

Sarconeos (BIO101) for Duchenne’s muscular dystrophy (DMD)

Macuneos (BIO201) for dry AMD

DMD: No cure and limited treatment options

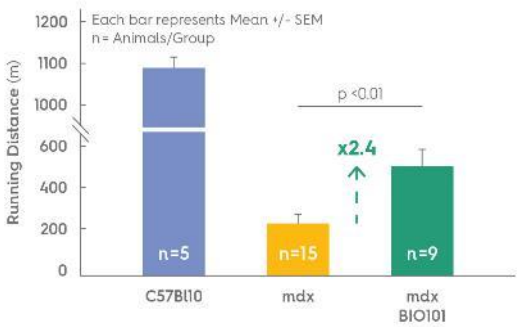


- Rare, genetic neuromuscular disease in male children characterized by accelerated degeneration of muscles, responsible for loss of mobility, respiratory failure and cardiomyopathy, leading to premature death.
- No known cure and limited treatment options, including corticosteroids and targeted therapies (exon-skipping in U.S. & stop codon in EU) that treat approximately 13% of DMD patients with specific genetic mutations.
- Myostatin inhibitors have been developed in DMD by large pharma (Pfizer, Roche) without success
- We received orphan drug designation (ODD) in 2018 from the FDA and EMA for Sarconeos (BIO101) in DMD.
- **We are developing Sarconeos (BIO101) to address all stages of DMD progression, independent of gene mutation and regardless of ambulatory state**

1. Source: Landfeldt *et al*., Neurology, 2014.

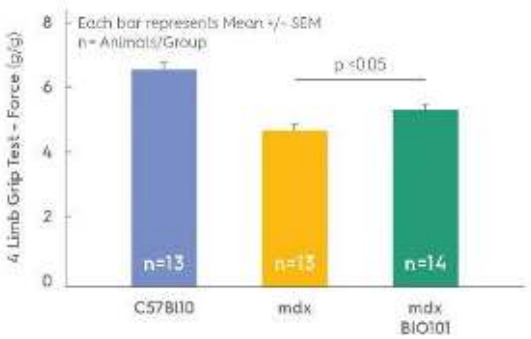
Proof-of-concept in *mdx* mice models of DMD: Improvements in mobility, strength and respiration

Improved **mobility** as measured by running distance[1]



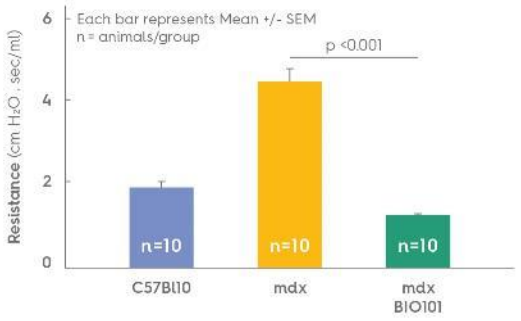
C57BL10-*mdx* mice treated with 50 mg/kg/day of Sarconeos (BIO101) over 8 weeks ran **2.4x farther** than untreated control C57BL10-*mdx* mice

Improved muscle **strength**, as measured by four-limb grip-test force[1]



C57BL10-mdx mice treated with 50 mg/kg/day of Sarconeos (BIO101) over 8 weeks showed an approximate **14% improvement** in strength as compared to untreated control C57BL10-*mdx* mice

Improves the time-dependent degradation of **respiratory function**[2]



Chronic (8 week) daily administration of 50 mg/kg/day of Sarconeos (BIO101) **significantly (p<0.001) improved respiratory function** measured by airway resistance

1. Results were presented in October 2018 at the WMS conference in Mendoza, Argentina in a poster presentation;
2. Results were presented in March 2019 at the annual international congress of Myology in Bordeaux, France in a poster presentation.

MYODA-INT: IND granted by FDA to start Phase 1-2 in 2020

Product	2020	2021	2022	2023
Sarconeos (BIO101)		**MYODA-INT (Phase 1-2)**		

Design

- Global, multicenter, double-blind, placebo-controlled, seamless, Phase 1-2 clinical trial
- Part 1: Safety, tolerability & PK (initial 7 days of dosing of escalating dose of Sarconeos)
- Part 2: Efficacy of Sarconeos (Respiratory and muscle function after dosing for 52 weeks)

Patients

- Ambulatory and/or non-ambulatory DMD patients:
  - Phase 1-2: 48 patients
- Enrollment in the U.S. and EU
- Patient advocacy group support
  - AFM Téléthon in France

Regulatory Status

- Pre-IND correspondence with the FDA in October 2018
- Scientific advice meeting with the EMA in December 2018
- IND and European regulatory filings in November 2019
- **FDA – IND granted 12/2019**

Intellectual Property portfolio – Neuromuscular diseases

- We hold exclusive commercial rights through licenses of each of our drug candidates.
- IP is jointly owned with Sorbonne University & sometimes with other academic research institutions[1].
- Patent portfolio covers 9 patent families, including a total of **18** co-owned issued patents and a total of **27** co-owned patent applications.
- Issued patents: 3 European, 2 U.S., and 13 in ROW, including **China, Japan**.
- Pending applications: 2 European, 4 U.S., and 21 in ROW, including **China, Japan, South Korea**

Neuromuscular diseases

9 families of patents covering production process, second generation compounds and various applications such as sarcopenia, myopathies (DMD), disuse atrophy, spinal muscular atrophy and respiratory function

1. Two recent patent applications are still pending entering into commercialization agreements, which we expect to enter into on commercially reasonable terms consistent with previous agreements.

Overview

Sarconeos (BIO101) for sarcopenia

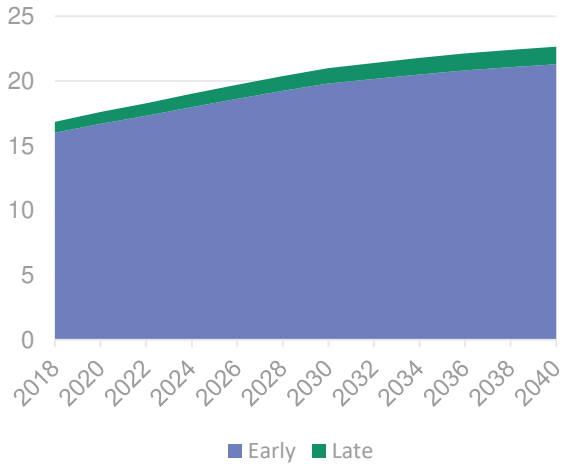
Sarconeos (BIO101) for DMD

Macuneos (BIO201) for dry AMD

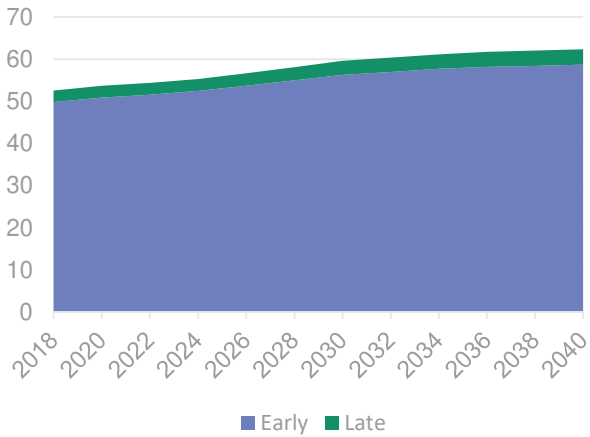
Dry AMD is an unmet medical need with no approved drugs

- AMD is a common eye disorder among people over 50 that affects the central part of the retina, known as the macula
- Can impair functions such as reading, driving, and facial recognition, and has a major impact on QoL and the ability to live independently
- Multifactorial disease that we believe is mainly caused by accumulation of A2E (a byproduct of the visual pigment cycle) that leads to retinal degeneration

Projection of AMD prevalence in North America (in M, mean projection)[1]



Projection of AMD prevalence in Europe (in M, mean projection)[1]

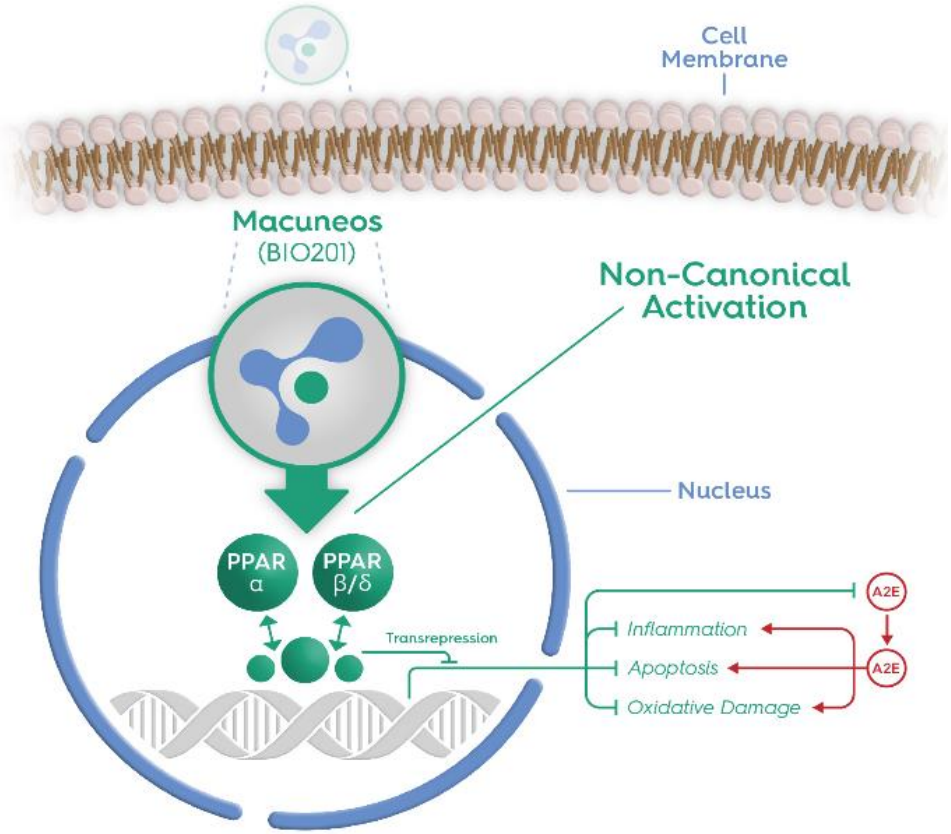


- 85 - 90% of AMD patients have dry AMD in some form; either early, intermediate or late stage, known as geographic atrophy (GA)
- No approved treatments for any stage of dry AMD, including GA
- We are developing Macuneos (BIO201) to treat patients with intermediate dry AMD to prevent the development to advanced stages (wet AMD + GA), which lead to severe vision loss

1. Source: Wang *et al.*, Lancet Glob Health 2014; 2: e106–16. Supplemental Table 7: Projection of Number of People with Early, Late and Any AMD by Regions

Macuneos (BIO201) mechanism of action: Non-canonical activation of PPARs

- We believe Macuneos (BIO201) potentially counteracts the phototoxic effects of A2E by selective non-canonical activation of the transrepressive activity of PPARα and PPARβ/δ in the retina
- Most other PPAR ligands mainly exhibit canonical activity and are associated with side effects



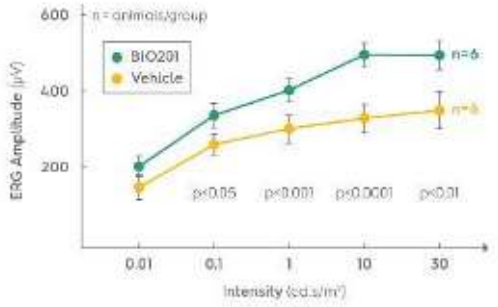
Anti-inflammatory activity (promotes the expression of anti-inflammatory genes)

Anti-oxidant activity (promotes the expression of anti-oxidant genes)

Anti-apoptotic activity (enables pathways that prevent cell death)

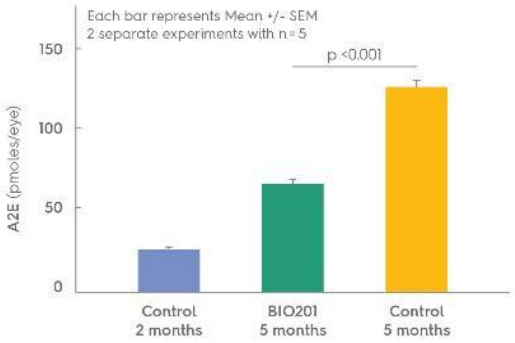
Macuneos (BIO201) protects the retina in rodent models of dry AMD and Stargardt disease

Preservation of visual function in mice



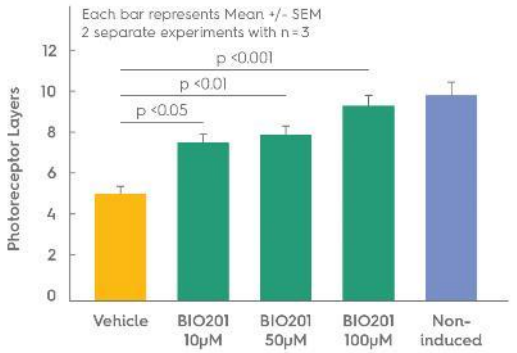
Chronic oral administration of Macuneos (BIO201) for 3 and 6 months **increases ERG amplitude** in ABCA4$^{-/-}$ RDH8$^{-/-}$ mice

Reduced A2E accumulation in mice



Chronic oral administration of Macuneos (BIO201) decreased A2E accumulation by **approximately 45%** in Abca4$^{-/-}$ Rdh8$^{-/-}$ mice as compared to vehicle control mice

Dose-dependent protection of retina integrity in rats



Intraperitoneal injection of Macuneos (BIO201) preserved the number of layers of photoreceptors by **up to approximately 90%** at the maximum dose of 100µM in a standard blue light rat model

Results were presented in May 2016 at the ARVO conference in Seattle, WA in a poster presentation and published in PLoSONE (Fontaine *et al.*; 2016).

Macuneos (BIO201) clinical development is the next asset for value creation

- **Phase 1 (MACA-PK):** First-In-Human, Phase 1, randomised, double-blind, placebo-controlled, mono-centre study evaluating single (SAD) and multiple ascending oral doses (MAD) of Macuneos (BIO201) in healthy subjects 18 years old or more.
  - Primary objective is to evaluate general and ocular safety and tolerability
  - Secondary objective is to evaluate Pharmacokinetics (PK) and interaction with food and with AREDS/AREDS2

- **Phase 2 (MACA-INT):** Multicenter, randomized, double-blind controlled vs. placebo, Phase 2a/b interventional study in patients with GA in one eye and iAMD in the fellow eye.
  - Primary objective is to evaluate the effect of 12 months treatment with Macuneos (BIO201) versus placebo on mean rate of change of GA area in eyes with GA
  - Secondary objective is to evaluate the effect of 24 months of treatment with Macuneos (BIO201) versus placebo on Rod Intercept Time in eyes with AMD.

Intellectual Property portfolio – Retinal Diseases

- We hold exclusive commercial rights through licenses of each of our drug candidates.
- IP is jointly owned with Sorbonne University & sometimes with other academic research institutions.
- Patent portfolio covers 5 patent families, including a total of **12** co-owned issued patents and a total of **18** co-owned patent applications.
- Issued patents: 4 European, 2 U.S., and 6 in ROW, including **China, Japan**.
- Pending applications: 1 U.S., and 17 in ROW, including **China, Japan, South Korea.**

Retinal diseases

5 families of patents covering 2 classes of compounds and their applications for dry age-related macular degeneration (AMD) and Stargardt disease

Key milestones

- ☑ SARA-OBS completed study of 218 patients in April 2019 with last patient out
- ☐ SARA-INT (Phase2b) interim results analysis in Q2 2020
- ☐ SARA-INT (Phase2b) complete patient enrollment in mid 2020
- ☐ SARA-INT (Phase2b) topline results expected by end of 2020

- ☑ MYODA IND clearance by FDA obtained December 2019
- ☐ MYODA FPI in 2020

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Thank you

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