

# Modulating the immune system to fight inflammatory and viral diseases, as well as cancer

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Abivax, a late-stage clinical biotech company

February, 2021



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# Abivax in a nutshell: A phase 3 biotech

## Milestones



Founded in 2013  
by Truffle Capital



IPO (ABVX) on  
Euronext Paris in  
June 2015,  
raising € 57.7m



Sept. 2018: Focus  
ABX464 on  
chronic  
inflammation



May 2020: ABX464 to  
prevent severe  
Covid-19 disease

## Location

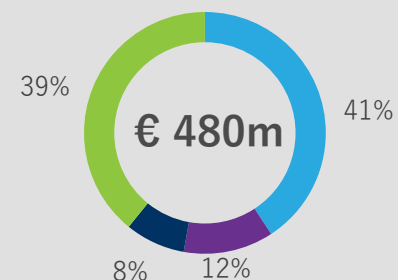


**Head Office**  
Paris

**Cooperative  
Lab with CNRS**  
Montpellier



## Shareholder structure<sup>1</sup> and market cap<sup>2</sup>



- Truffle Capital
- Sofinnova
- Board & management
- Public

## Operations

**27**  
Employees

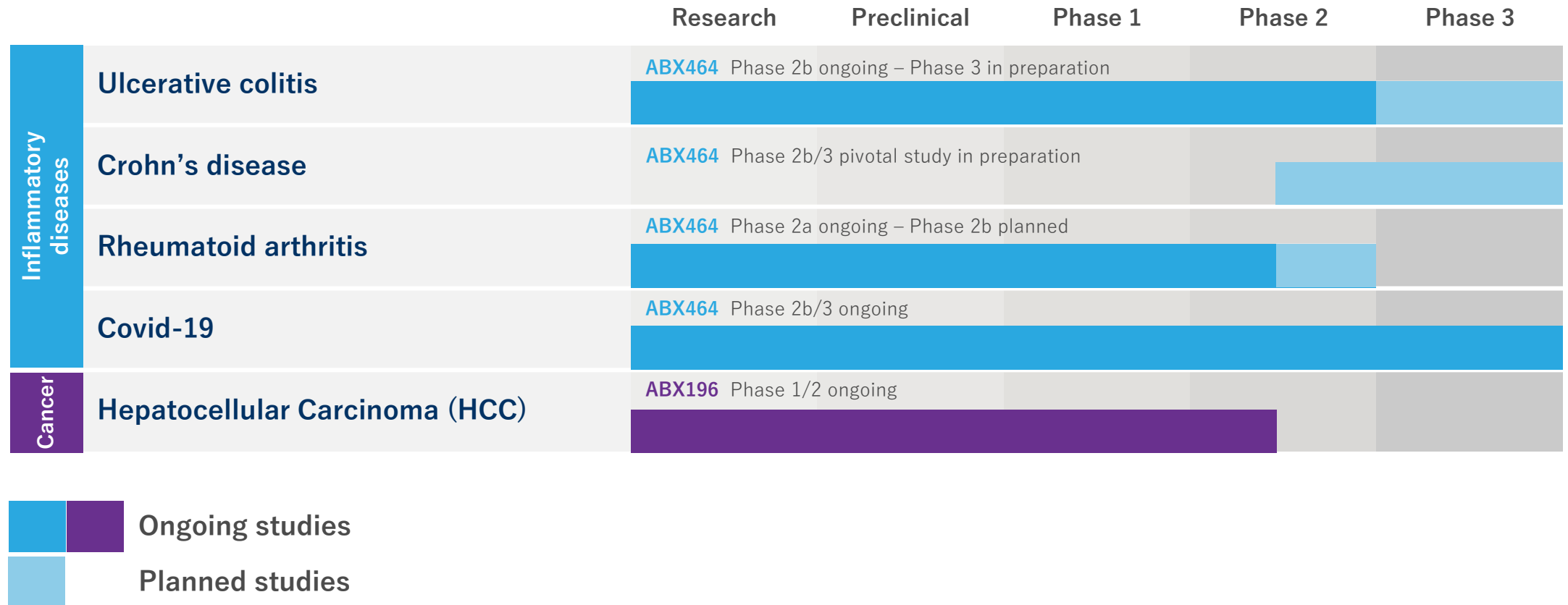
Cash<sup>3</sup>  
**€ 29.3m**  
Cash runway until Q4 2021

## Key R&D and manufacturing partners

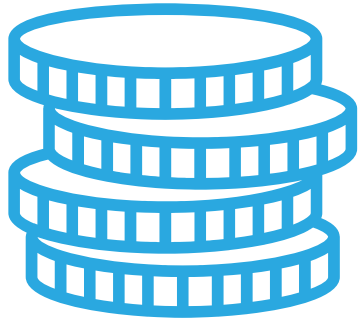


1) Undiluted – as of 31/12/2020  
2) As of 13/01/2021 noon (Share price EUR 33.55 | Outstanding shares 14.3m)  
3) December 2020 estimate

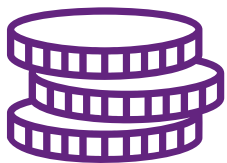
# Abivax: A late-stage biotech with a strong and diversified clinical pipeline addressing major medical needs and markets



# ABX464: A promising candidate addressing large unmet medical needs



**Total market size\***  
in inflammatory  
diseases  
greater than  
**USD 90 B**



**Market size\***  
in ulcerative colitis  
around  
**USD 6.1 B\*\***

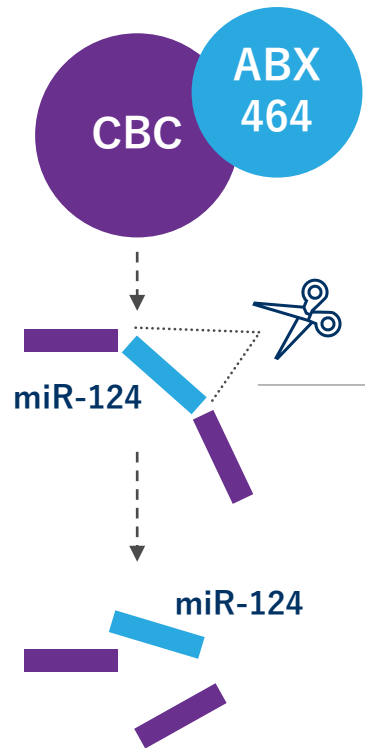
\* 2019 data for Europe G5,  
U.S. and Japan  
\*\* 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> line

Source: Informa

- Coming from the **proprietary Abivax library of compounds**, designed to **modulate RNA biogenesis** (>2,200 molecules); Collaboration with EVOTEC
- **Small molecule**, administered as an **oral capsule** (once a day) ABX464 tablet form under development
- **First-in-Class, novel mechanism of action:** Selective upregulation of anti-inflammatory microRNA, miR-124
- **Good safety profile** after administration to **>750 patients and volunteers**
- **Strong anti-inflammatory effect** confirmed in phase 2a studies in ulcerative colitis
- **Antiviral effect** ABX464 inhibits SARS-CoV-2 *in vitro* replication in human respiratory epithelium: Inhibition of Covid-19 viral replication comparable to Remdesivir
- **High unmet medical need and commercial opportunities** for novel safe and efficacious drugs for inflammatory diseases as well as Covid-19

# ABX464 novel mechanism of action: Potent and specific upregulation of miR-124, activating a “physiological brake” of inflammation

- First-in-class mechanism of action related to intracellular upregulation of miR-124.
- microRNAs work by down-regulating the translation of their respective target genes.



Established miR-124 targets: (translation ↓)

Outcome

MCP-1/  
CCL2

MCP-1/CCL2 ↓

STAT 3

IL-6  
Th17 → IL-17 ↓  
TNF $\alpha$

IL-6R

JAK pathway blocked → IL-6 ↓  
TNF- $\alpha$  ↓

Tazi et al. *Drug Discov. Today* (2021) ([www.sciencedirect.com/science/article/abs/pii/S1359644620305377](http://www.sciencedirect.com/science/article/abs/pii/S1359644620305377))

Poholek et al. *J Exp Med* (2020) 217 (10): e20191761

# ABX464 phase 2a POC induction study in ulcerative colitis: Impressive efficacy achieved for all endpoints (day 56)

## Study Design:

PI: Prof. Severine Vermeire, Leuven, BE

32 patients with moderate to severe UC: randomized (2:1), double blind, placebo controlled study

Active and placebo groups well balanced re demographics

8-weeks treatment

Moderate to severe UC patients who failed/were intolerant to immunomodulation/steroids (50%) and/or biologics (50%)

Central blinded reading of endoscopies (induction, 2<sup>nd</sup> and 3<sup>rd</sup> year maintenance)

Followed by open-label maintenance study (now in 4<sup>th</sup> year)

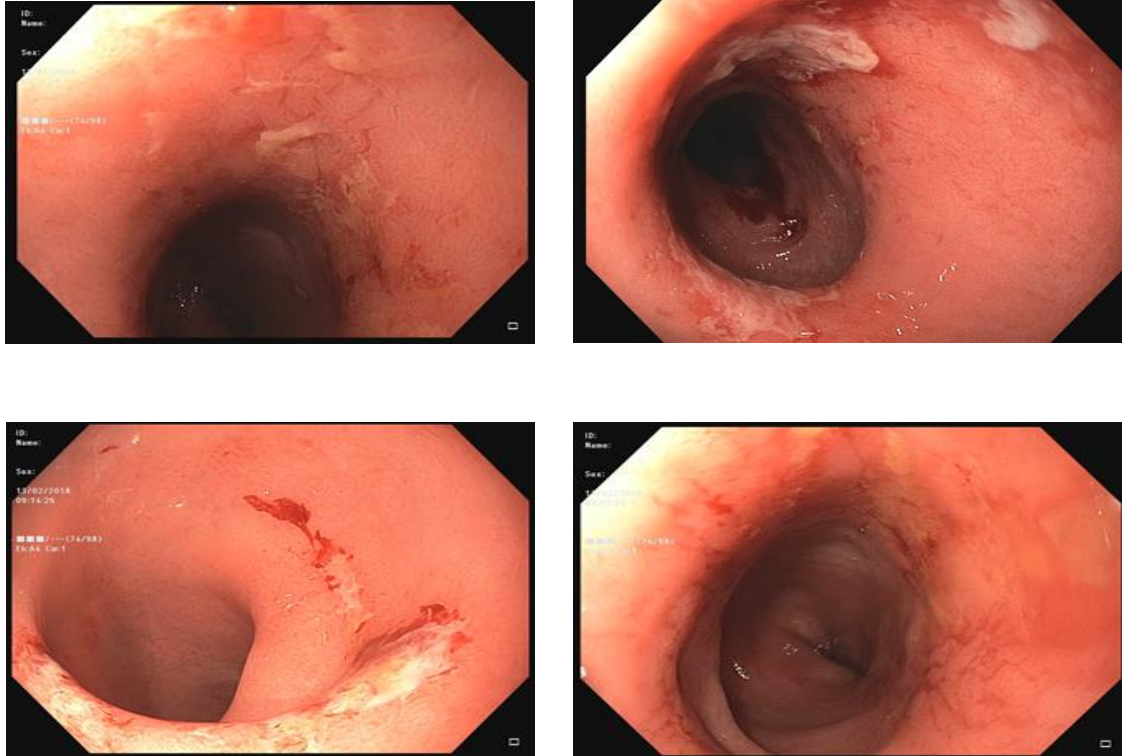
|   | ABX464<br>(n=20/23)<br>PP/ITT** | Placebo<br>(n=9/9)<br>PP/ITT | p value<br>(PP) |
|---|---------------------------------|------------------------------|-----------------|
| Clinical remission*                                   | 35%/30%                         | 11%/11%                      | 0.16            |
| Endoscopic improvement                                | 50%/43%                         | 11%/11%                      | 0.03            |
| Clinical response                                     | 70%/61%                         | 33%/33%                      | 0.06            |
| Total Mayo Score reduction                            | -53%                            | -27%                         | 0.03            |
| Partial Mayo Score reduction                          | -62%                            | -32%                         | 0.02            |
| miR-124 expression in rectal biopsies (fold increase) | 7.69                            | 1.46                         | 0.004           |

\* Clinical remission according to previous FDA definition. With application of most recent FDA definition (excluding physician assessment), clinical remission rate was 40% in ABX464 group and remained at 11% with placebo

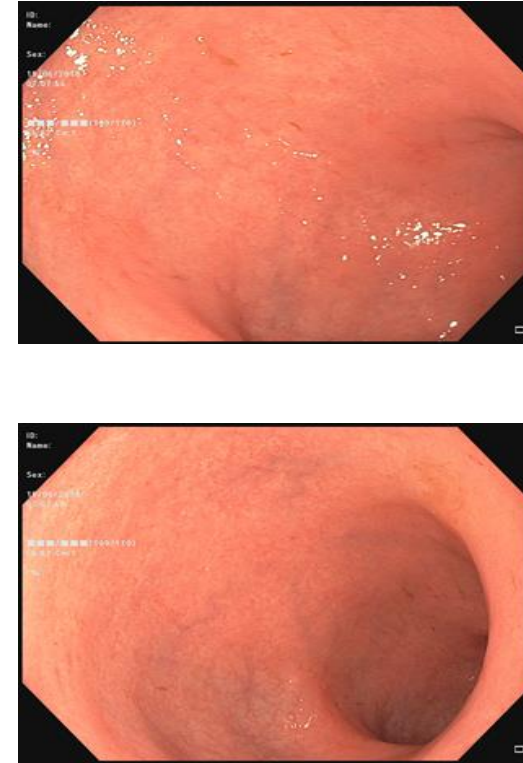
\*\* PP: Per protocol / ITT: Intent to treat

# Complete resolution of UC lesions in an ABX464 treated (vedolizumab, infliximab and adalimumab resistant) patient

## Endoscopy before ABX464



## Endoscopy after ABX464



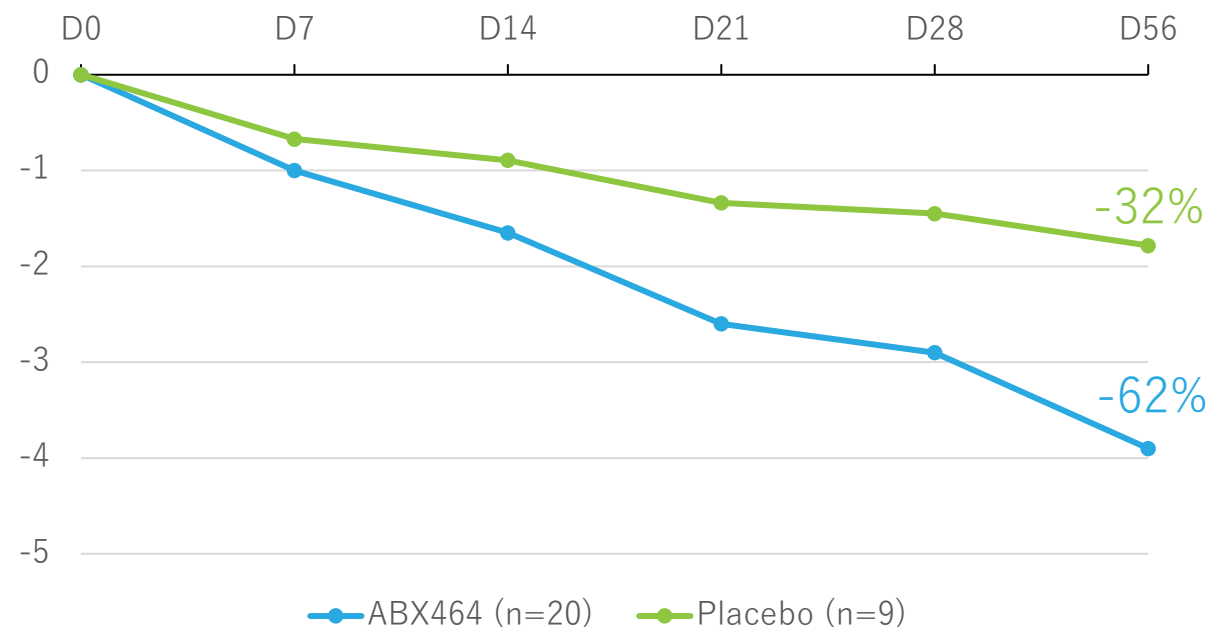
Courtesy of Prof. Severine Vermeire, Leuven, Belgium



# ABX464 phase 2a UC induction study: Fast onset of action and comparable efficacy in both biologics naïve and refractory patients

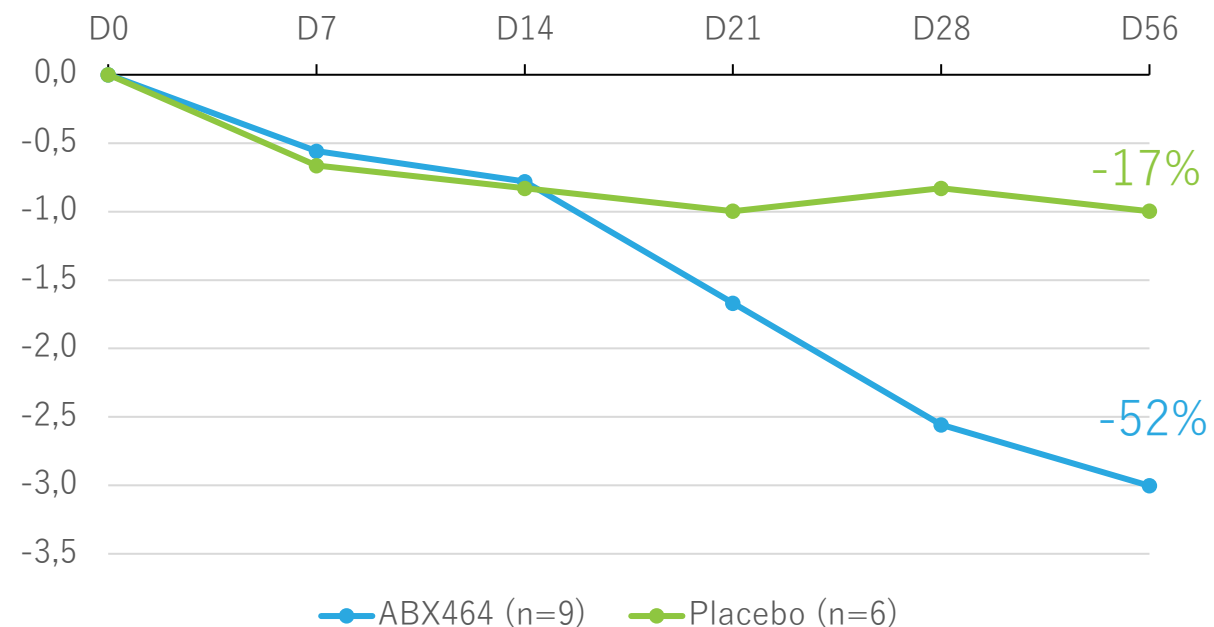
## Overall Patient Population

Change from Baseline Partial Mayo Score



## Patients previously treated with biologics

Change from Baseline Partial Mayo Score



# Confirmed durable and improved long-term efficacy in UC maintenance study: Several patients in 4<sup>th</sup> year of ABX464 continuous treatment

29/32

Patients completed the induction study

4/6

Countries granted regulatory approval for maintenance study

22/23

Eligible patients enrolled in the maintenance study, 19 out of 22 patients completed first year

16/19

16 out of 19 patients completed the second year of treatment

|  | Day 0 Maintenance | Month 12       | Month 24      |
|--|-------------------|----------------|---------------|
| Clinical remission (TMS including endoscopy) | 6/19 (31.6%)      | 12/16* (75.0%) | 11/16 (68.8%) |
| Clinical response                            | 14/19 (73.7%)     | 15/16* (93.8%) | 15/16 (93.8%) |

\* 16 out of 19 patients had endoscopy

As of January 13, 2021, all ongoing phase 2a maintenance patients (N=15) have completed at least 29 months of continuous daily treatment with ABX464, with the longest treated patient being on ABX464 for over 37 months.

# ABX464, Entyvio® and Xeljanz® efficacy in UC induction and maintenance clinical trials

|   | Vedoluzimab* Phase 3 |         |       | Tofacitinib** Phase 3 |           |           | ABX464 Phase 2a |         |       |
|---|----------------------|---------|-------|-----------------------|-----------|-----------|-----------------|---------|-------|
| Post Induction                              | Active               | Placebo | Delta | Active                | Placebo   | Delta     | Active          | Placebo | Delta |
| Clinical Remission (%)                      | 16.9                 | 5.4     | 11.5  | 16.8-18.5             | 3.6-8.2   | 13.2-10.3 | 35              | 11      | 24    |
| Endoscopic improvement (%)                  | 40.9                 | 24.8    | 16.1  | 28.4-31.3             | 11.6-15.6 | 16.8-15.7 | 50              | 11      | 39    |
| <b>Post 1<sup>st</sup> Year Maintenance</b> |                      |         |       |                       |           |           |                 |         |       |
| Clinical Remission (%)                      | 41.8                 | 15.9    | 25.9  | 34.3-40.6             | 11.1      | 23.2-29.5 | 75              |         |       |
| Endoscopic improvement (%)                  | 51.6                 | 19.8    | 31.8  | 37.4-45.7             | 13.1      | 24.3-32.6 | 100             |         |       |

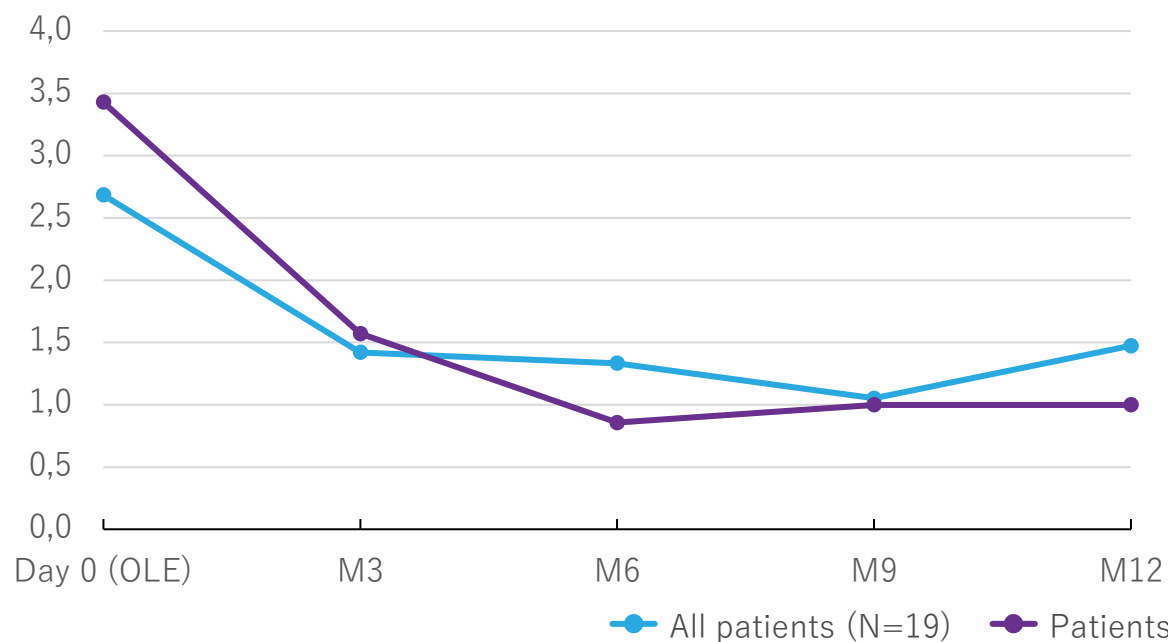
ABX464 phase 2a maintenance study allowed all patients irrespective of treatment assignment or response during induction to be included.

\* Feagan et al. Vedolizumab as induction and maintenance therapy for ulcerative colitis. N Engl J Med 2013;369:699-710

\*\* Sandborn et al. Tofacitinib as Induction and Maintenance Therapy for Ulcerative Colitis. N Engl J Med 2017;376:1723-36

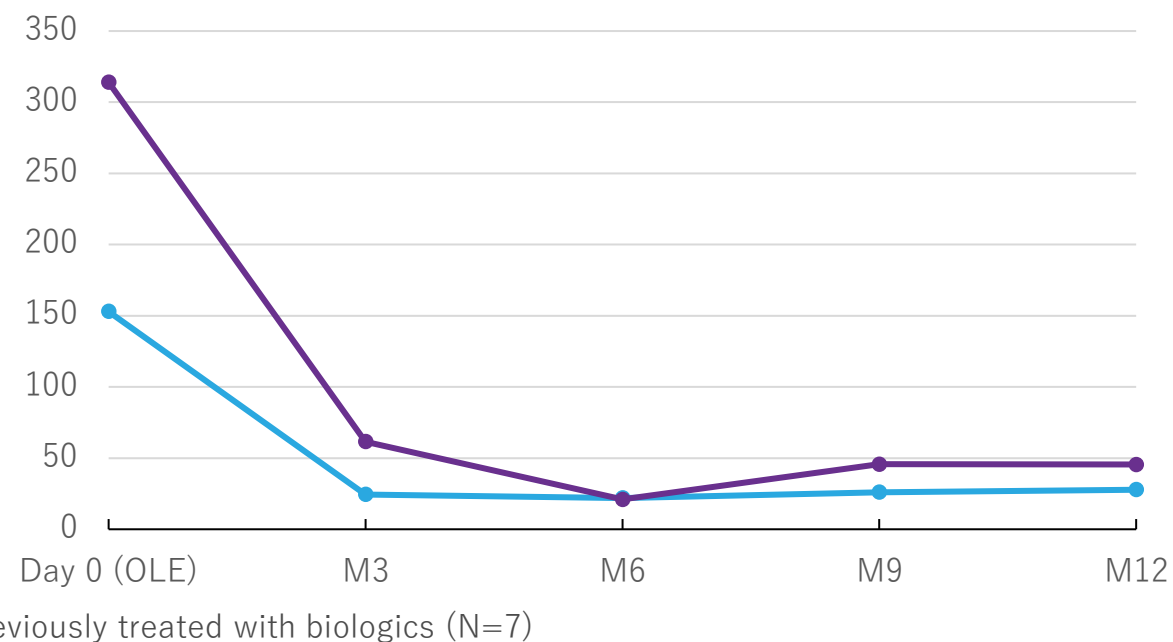
# Changes of Partial Mayo Score and fecal calprotectin during the maintenance phase for all patients and patients previously on biologics

## Partial Mayo Score – Mean



➔ Partial Mayo Score continued to decrease

## Fecal calprotectin $\mu\text{g/g}$ – Median



➔ Fecal calprotectin levels went down to normal values (< 50  $\mu\text{g/g}$ )

Median fecal calprotectin remained in normal range after two years (31.6  $\mu\text{g/g}$ ).

# Completed studies: Favorable ABX464 Safety Profile

*Common (> 5%) adverse events (cut-off date Nov. 30, 2020)*

| System Organ Class                              | Adverse effect         | ABX464 (50mg QD)<br>(N=115 subjects) |                                    | ABX464 (All doses)<br>(N=203 subjects) |                                    | Placebo<br>(N=33 subjects) |                                    |
|---|------------------------|--------------------------------------|------------------------------------|--|------------------------------------|----------------------------|------------------------------------|
|   |                        | Number of reports                    | n (%) of pts with TEAE (Incidence) | Number of reports                      | n (%) of pts with TEAE (Incidence) | Number of reports          | n (%) of pts with TEAE (Incidence) |
| Nervous system disorders                        | Headache               | 49                                   | 35 (30.4)                          | 115                                    | 83 (40.9)                          | 6                          | 4 (12.1)                           |
| Gastrointestinal Disorders                      | Abdominal pain         | 6                                    | 6 (5.2)                            | 15                                     | 13 (6.4)                           | 1                          | 1 (3.0)                            |
|   | Abdominal pain (upper) | 9                                    | 7 (6.1)                            | 34                                     | 16 (7.9)                           | 0                          | 0                                  |
|   | Diarrhea               | 5                                    | 4 (3.5)                            | 15                                     | 10 (4.9)                           | 4                          | 3 (9.1)                            |
|   | Nausea                 | 13                                   | 9 (7.8)                            | 47                                     | 35 (17.2)                          | 3                          | 2 (6.1)                            |
|   | Vomiting               | 11                                   | 7 (6.1)                            | 37                                     | 26 (12.8)                          | 0                          | 0                                  |
| Musculoskeletal and Connective Tissue Disorders | Arthralgia             | 4                                    | 4 (3.5)                            | 12                                     | 10 (4.9)                           | 1                          | 1 (3.0)                            |
|   | Back Pain              | 4                                    | 4 (3.5)                            | 24                                     | 19 (9.4)                           | 1                          | 1 (3.0)                            |

Most frequently reported adverse events are transient and mild (headache, nausea, gastrointestinal pain)

Similar AE profile in non completed studies (> 500 patients) across various indications

No new type of AE in long term maintenance studies with chronic ABX464 treatment up to 37 months

No clinically meaningful changes in laboratory parameters (LFTs, Hb, lymphocytes, neutrophils, etc.)

No increased incidence of infections

# How to bring ABX464 to the finish line

## Ulcerative colitis Phase 2b ongoing:

- Enrollment completed with 254 patients in 15 European countries, US and Canada in 130+ study sites
- 4 study arms (placebo, 25, 50, 100 mg QD)
- Central blinded reading of endoscopies
- Conducted with IQVIA as CRO
- Top-line data for induction phase and initial maintenance data in **Q2 2021**
- 1<sup>st</sup> year maintenance data expected in **Q1 2022**

## Ulcerative colitis Phase 3 in preparation:

- End of Phase 2b meeting planned for **Q3 2021**
- FPI planned for **Q4 2021**

## Crohn's disease Phase 2b/3 pivotal study in preparation:

- 900 patients
- FPI expected for **Q3 2021**

## Rheumatoid arthritis Phase 2a study ongoing:

- Enrollment completed (60 patients in 5 European countries)
- Top-line data for induction phase in **Q2 2021**
- Phase 2b study planned for **Q4 2021**

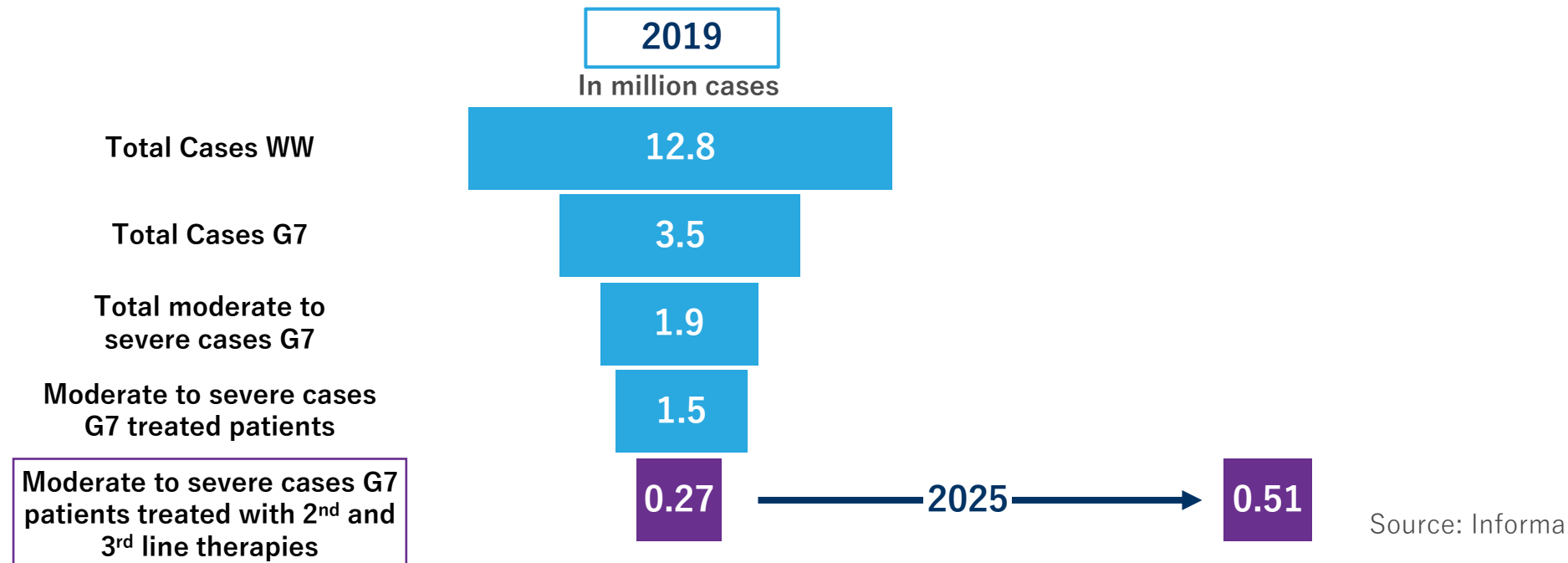
## Covid-19 Phase 2b/3 study ongoing:

- 1,034 patients
- Recruitment to be completed in **Q1 2021**, dependent on the dynamics of the pandemic
- Top-line data in **Q2 2021**

# ABX464: A future blockbuster in IBD

Size of targeted market doubling in UC and increasing by 34% in CD (2019 - 2025)

UC Epidemiology

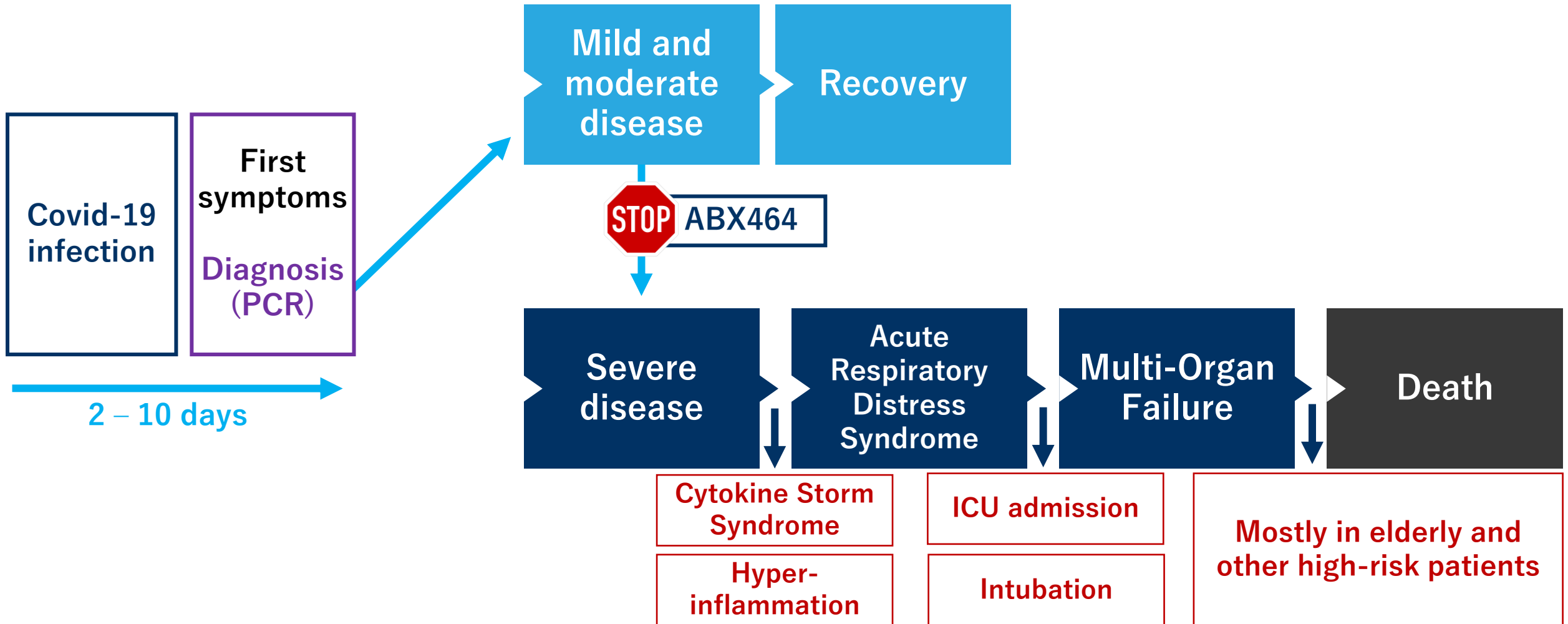


UC & CD  
Market Potential

|   | Ulcerative Colitis   | Crohn's Disease                                    |
|---|--|--|
| ABX464 TPP  | Patients with moderate to severe UC and CD who failed on first line therapy<br>Therefore, positioned as 2 <sup>nd</sup> and 3 <sup>rd</sup> line treatment |  |
| ABX464 First Launch                                     | 2025 for UC  | 2026 for CD  |
| G7 Market Size (2 <sup>nd</sup> & 3 <sup>rd</sup> line) | 2019: USD 5.1 B for UC<br>2025: USD 11.2 B for UC  | 2019: USD 10.7 B for CD<br>2025: USD 14.3 B for CD |
| ABX464 Market Share Assumptions                         | 10-20% market share at peak sales for both indications   |  |

# Covid-19 infection and pathology

ABX464 to be administered to prevent severe disease and death in high-risk patients





# ABX464 miR-AGE phase 2b/3 clinical trial: Fully powered and placebo controlled to establish safety and efficacy in preventing severe Covid-19 disease

|                     |   |
|---------------------|---|
| Main objective      | Early treatment of high-risk Covid-19 patients to prevent excessive inflammation and acute respiratory failure / death  |
| Inclusion criteria  | Patients aged $\geq 65$ and aged $\geq 18$ with at least one additional risk factor who are infected with SARS-CoV-2  |
| Primary endpoint    | Absence of high-flow oxygen ( $>3$ l/min), assisted ventilation (positive pressure or intubation) and/or death after 28 days  |
| Key design features | 1,034 patients will be included in 50 clinical study sites in Europe and South America <ul style="list-style-type: none"><li>• Placebo + SOC group: 344 patients</li><li>• ABX464 + SOC group: 690 patients (2 to 1 randomization)</li><li>• Expected response rates: 75% on placebo, 83 % on ABX464 (alpha 0.05, beta 80%)</li></ul> |
| Interim Analysis    | To be performed after first 300 patients have been dosed for 28 days  |

Preparation for marketing authorization in 2021 (regulatory, manufacturing, commercial) ongoing, should study results be positive.

## miR-AGE: Quo vadis

Top line data expected for Q2 2021

Submission to be supported on primary endpoint or subject to data and regulatory discussions on secondary endpoints

If ABX464 proves to be efficacious against the original SARS-CoV-2 virus, it is likely to be efficacious against emerging mutant viruses

Subsequent submission of EUA or MAA in target geographies

Ongoing dialog with French regulatory authority ANSM

Initial discussions with the French government

First sales expected in 2021

# ABX196: An iNKT agonist for the treatment of liver cancer

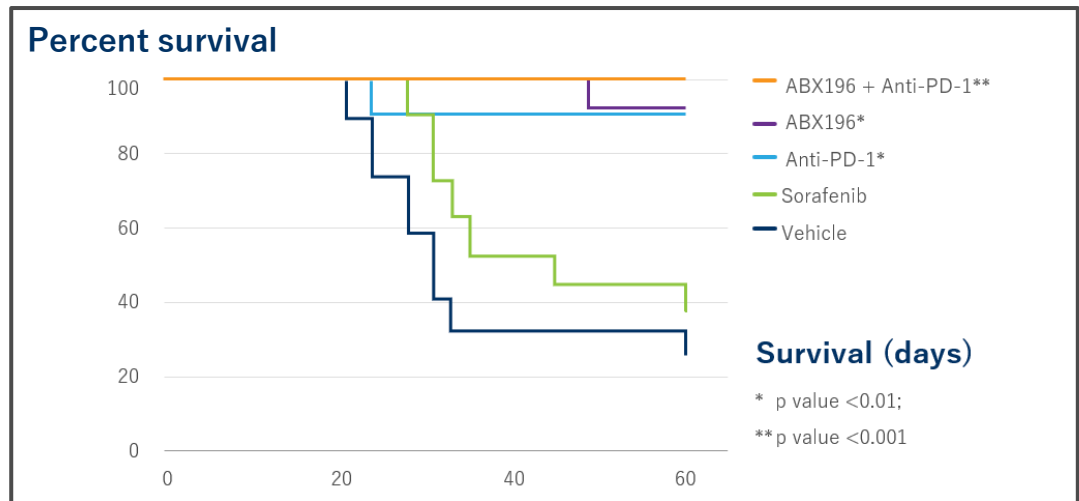
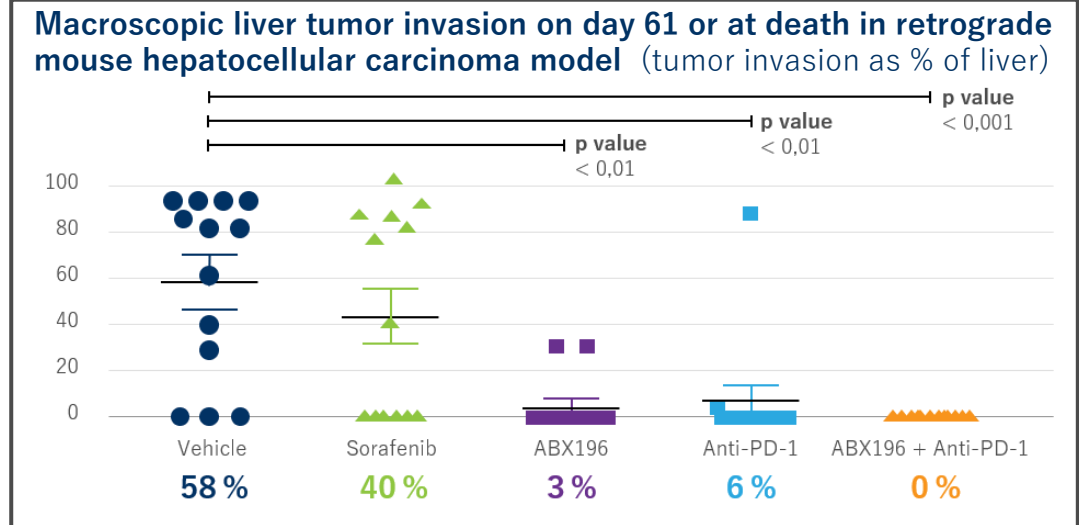
Licensed from Scripps Research, University of Chicago, Brigham-Young University

Synthetic glycolipid agonist of iNKT (invariant Natural Killer T) cells in liposomal formulation

Strong preclinical data in liver cancer and melanoma

Phase 1 completed in volunteers: ABX196 was safe and well tolerated, and triggered both humoral and iNKT responses

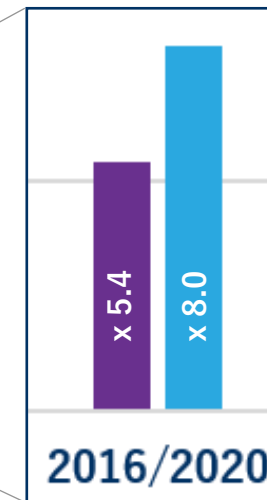
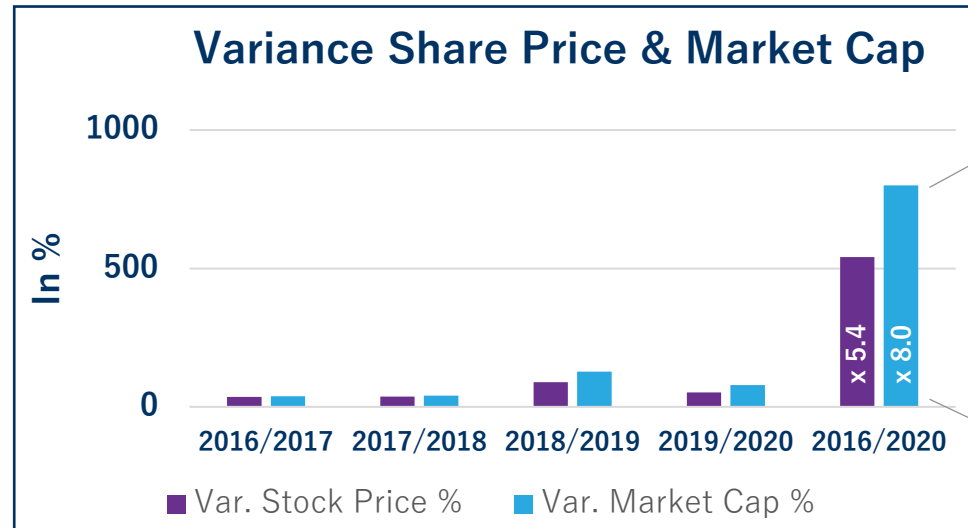
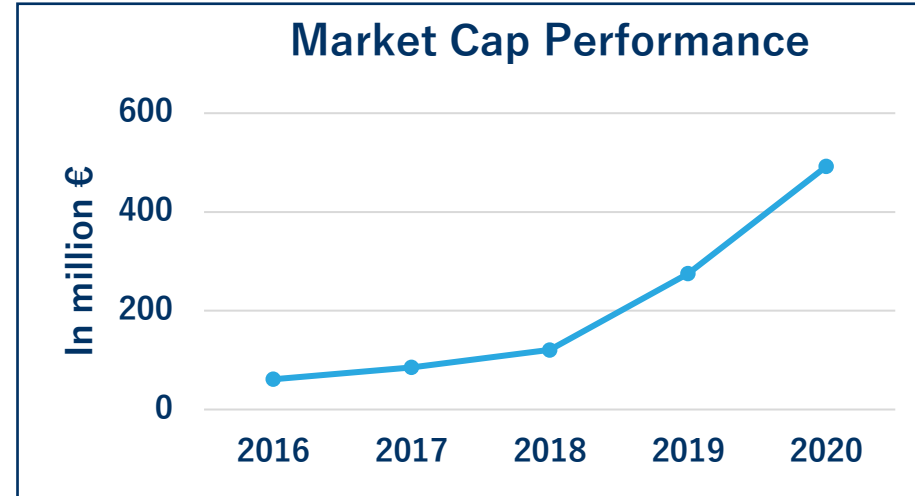
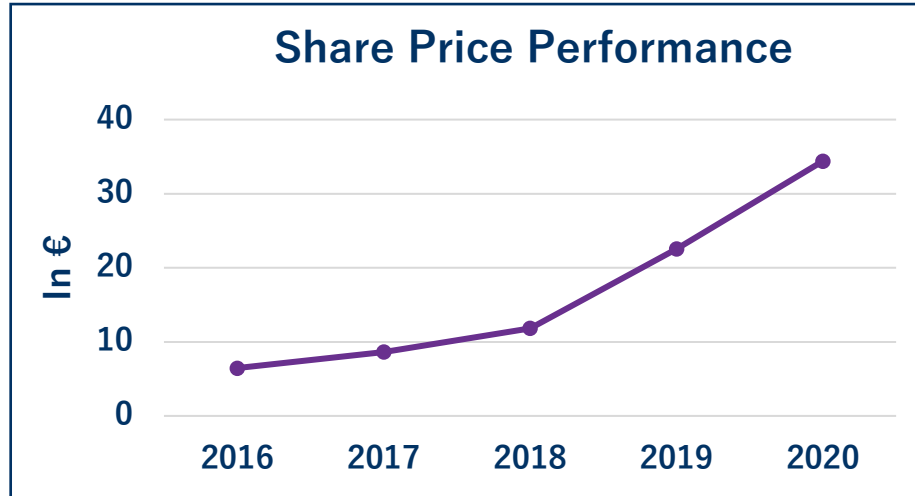
Phase 1/2 dose escalation study ongoing: Combination therapy with checkpoint inhibitors at Scripps MD Anderson Cancer Center (San Diego, CA) and MD Anderson Cancer Center (Houston, TX)



# Newsflow through end of 2021

|   | Q4 2020                     | Q1 2021  | Q2 2021   | Q3 2021                         | Q4 2021            |
|---|-----------------------------|--|---|---------------------------------|--------------------|
| <b>UC</b> - Phase 2b (ABX464)           | <b>Enrollment completed</b> |  | <b>Top-line results</b><br>(Induction and initial maintenance data) |                                 | <b>FPI Phase 3</b> |
| <b>CD</b> - Phase 2b/3 pivotal (ABX464) |                             |  |   | <b>FPI</b>                      |                    |
| <b>RA</b> - Phase 2a (ABX464)           |                             | <b>Enrollment completed</b>                      | <b>Top-line results</b><br>(Induction and initial maintenance data) |                                 |                    |
| <b>Covid-19</b> - Phase 2b/3 (ABX464)   |                             | <b>Enrollment completed</b>                      | <b>Top-line results</b>   | <b>Potential MAA submission</b> |                    |
| <b>HCC</b> - Phase 1/2 (ABX196)         |                             | <b>Enrollment completed</b><br>(Dose escalation) | <b>Top-line results</b><br>(Dose escalation)                        |                                 |                    |

# 2016-2020: Positive and durable increase in shareholder value



# Highly experienced Executive Committee



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Chief Executive Officer  
Former Head of Global R&D,  
Baxter BioScience



**Didier Blondel**

Chief Financial Officer  
& Board Secretary



**Pierre Courteille  
Pharmacist, MBA**

Chief Commercial  
Officer & VP, BD



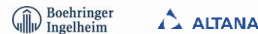
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Pharm.D.**

VP, Clinical  
Operations



**Jérôme Denis,  
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**Regina Jehle**

Director  
Communications



Competencies from discovery to global commercialization