



**GENFIT**

TOWARDS BETTER MEDICINE

# Corporate Presentation

June 2021

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# Update on Implementation of Corporate Roadmap

## Lead program in PBC Therapeutics

- Phase 3 ELATIVE™<sup>1</sup> evaluating drug-candidate elfibranor<sup>2</sup>: patient enrollment **started in 3Q20**
- Topline data readout **expected in 1Q23**
- Next corporate **update in Sept 2021**

▶ PBC Day, February 21



## Pipeline

- **R&D rationalized**: focus on **ACLF** and **Cholestatic diseases**, leveraging the potential of GENFIT's internal assets in therapeutic areas where highest probability of success for GENFIT: **moving into clinical stage in 2021**

▶ Pipeline Update, May 21



## Lead program in NASH Diagnostics

- NASHnext™, powered by NIS4® technology: large scale **commercial launch by Labcorp in April 2021**
- Next corporate **update in Sept 2021**
- NIS4® technology available for use in clinical research by Covance



## Finances

- 1Q21 cash position: €108.9M
- On track to achieve **~€45M operational cashburn in 2022**
- Convertible debt maturity pushed back to **Oct 2025**
- Residual convertible debt down to nominal amount of €57.2M as of April 13, 2021



# Therapeutics: Cholestatic diseases



# Cholestatic Diseases: Multiple Opportunities, Beyond Lead Program in PBC

## High unmet medical need in cholestatic diseases

### PBC

- Standard of Care (SoC): still unmet medical need calling for **new differentiated therapies**<sup>1</sup>

### PSC

- Rare chronic cholestatic disorder characterized by disrupted bile-acid homeostasis that may result in cirrhosis, liver failure, cholangiocarcinoma - **no approved treatment**<sup>2</sup>
- Significant burden of disease (high prevalence of **pruritus**, liver transplant, etc.)<sup>2</sup>

### Other rare pediatric cholestatic diseases

- Several indications in need of treatment options: **Progressive familial intrahepatic cholestasis (PFIC) / Biliary atresia / Alagille syndrome / Pediatric PSC**

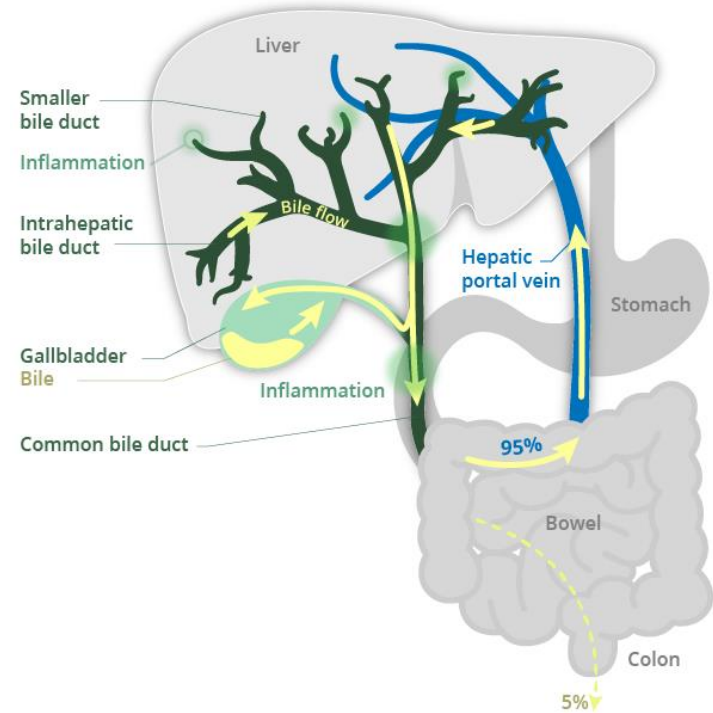
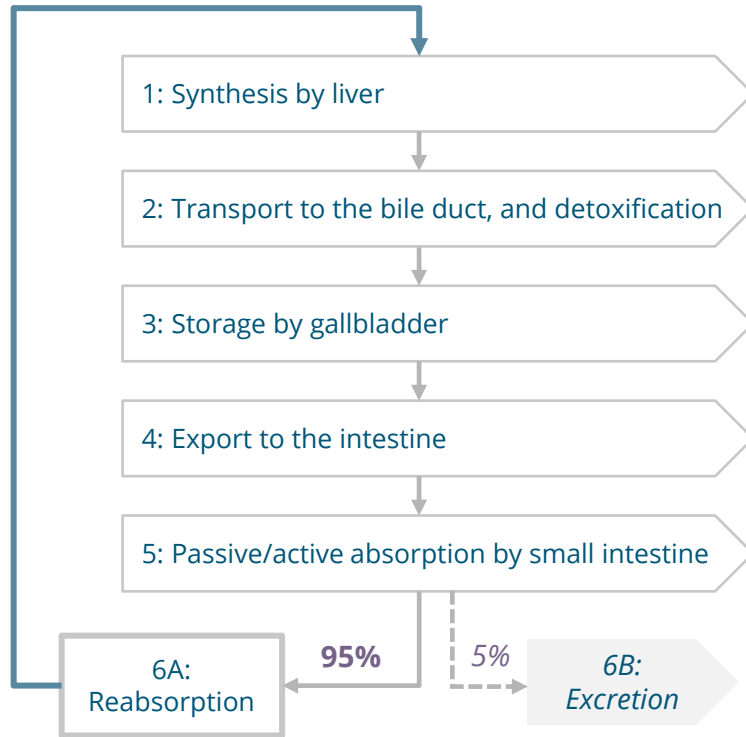
## GENFIT's rationale

- In-house expertise (discovery to late stage) in severe liver diseases**
- Strong scientific rationale to support the effects of elafibranor on cholestasis**<sup>3</sup>
- Late stage clinical development in PBC, clinical development initiated in PSC, research program initiated on potential candidates for other rare cholestatic pediatric diseases**
- New clinical evidence expected in cholestatic diseases, with PSC data in 2022 (elafibranor)**

## Market opportunity

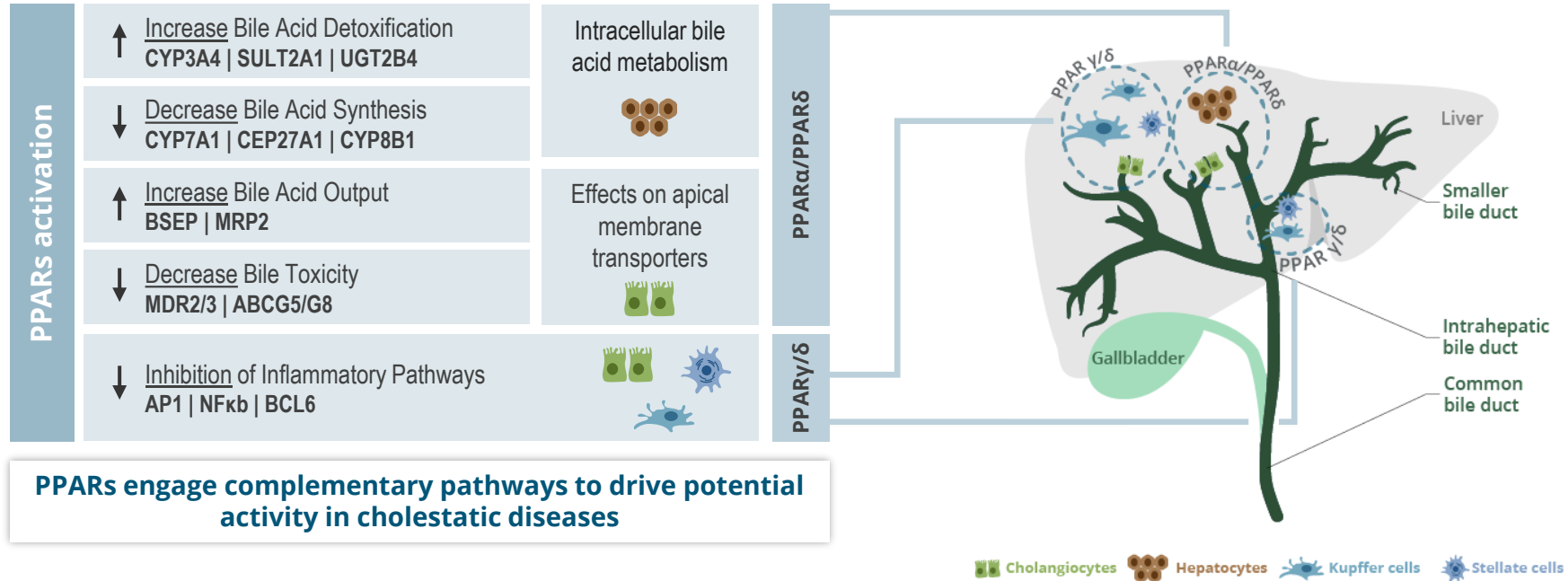
- PBC and PSC orphan indications:** enhanced **market exclusivity** and clinical research **subsidies**<sup>4</sup>
- Eligible population in PBC:** **~90,000** patients US+EU for second line treatment, representing a market potential of **\$1bn by 2025**<sup>5</sup>
- Eligible population in PSC:** **~50,000** patients US+EU, with a market potential of **~\$700M**<sup>5</sup>
- Other rare pediatric cholestatic diseases:** **~100,000**<sup>6</sup> patients with pediatric cholestatic liver disease in top 25 countries

# Cholestatic Diseases: Characterized by Inflammation and Fibrosis of the Bile Ducts



Enterohepatic cycle (bile acid cycle) and potential dysfunction

# PPARs Mechanism of Action in Cholestatic Diseases



# Literature on PPARs in Cholestatic Diseases

## PPAR Proof of Concept in Cholestatic Disease

Gastroenterology 2021;160:734-743

### CLINICAL—LIVER

#### Fibrates for Itch (FITCH) in Fibrosing Cholangiopathies: A Double-Blind, Randomized, Placebo-Controlled Trial



De Vries et al. Gastroenterology 2021;160:734-743

↳ **Double-blind, randomized, placebo-controlled study**  
**Patients with cholestatic disease (PBC, PSC or SSC) w/ moderate to severe pruritus**  
**Treatment (n=38) vs placebo (n=36) for 21 days**

#### Results

- Pruritus (≥50% reduction in moderate/severe pruritus assessed by VAS) 45% response rate vs 11% for placebo (p=0.003)
- Reduced serum ALP 35% vs 6% for placebo (p=0.03)
- Can be considered as a new treatment option for cholestasis-associated pruritus given anti-pruritic and anticholestatic properties and a favorable safety profile

#### Conclusion

- Superior to placebo in improving moderate to severe pruritus in patients with PSC and PBC

## Reduced Levels of ALP May be Associated with Improved Outcomes in PSC

- Stanich PP , Bjornsson E , Gossard AA et al. Alkaline phosphatase normalization is associated with better prognosis in primary sclerosing cholangitis. Dig. Liver Dis. 2011 ; 43 : 309 – 13.
- Al Mamari S , Djordjevic J , Halliday JS et al. Improvement of serum alkaline phosphatase to <1.5 upper limit of normal predicts better outcome and reduced risk of cholangiocarcinoma in primary sclerosing cholangitis. J. Hepatol. 2013 ; 58 : 329 – 34.
- Lindstrom L , Hultcrantz R , Boberg KM et al. Association between reduced levels of alkaline phosphatase and survival times of patients with primary sclerosing cholangitis. Clin Gastroenterol Hepatol 2013 ; 11 : 841 – 6.

# Elafibranor as a Potential Treatment for PBC (1/4)

## ELATIVE™ – a Pivotal Phase 3 Study in Patients with PBC

### Randomized 2:1, double blind, placebo-controlled, global study<sup>1</sup>

N=100 Elafibranor (PPAR  $\alpha/\delta$  agonist) 80mg

N=50 Placebo

Day 1

Week 52

#### Primary Endpoint

Response to treatment defined as **Alkaline phosphatase (ALP) < 1.67 x Upper Limit Normal (ULN) and Total Bilirubin (TB)  $\leq$  ULN and ALP decrease  $\geq$  15 percent**

#### Key Secondary Endpoints

- Response to treatment based on ALP normalization (At week 52)
- Change in pruritus from baseline (Over 52 weeks of treatment) based on PBC Worst Itch Numeric Rating Scale (NRS) score\*

SEPTEMBER 2020

Beginning of enrollment

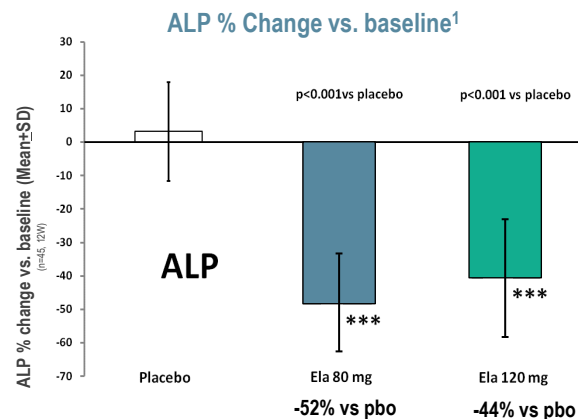
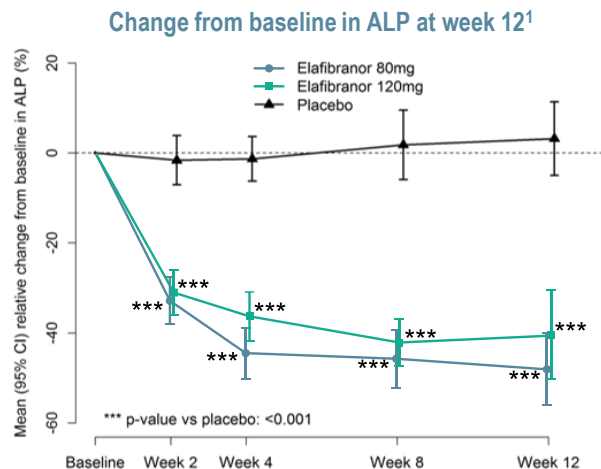
1Q 2023

Anticipated Data readout

# Elafibranor as a Potential Treatment for PBC (2/4)

## Elafibranor Phase 2a PBC Study

Statistically significant treatment effects in both 80mg and 120mg doses on the primary end-point (confirmed in mITT\* set) of serum alkaline phosphatase (ALP) change from baseline



<sup>1</sup>Non-parametric randomization ANCOVA with baseline as covariate  
\*\*\* P-value vs. placebo: <0.001

Elafibranor awarded Breakthrough Therapy designation by the FDA and Orphan Drug Designation by the FDA & EMA for PBC<sup>2</sup>

**JOURNAL  
OF HEPATOLOGY**  
The Home of Liver Research

*A randomized placebo-controlled trial of elafibranor in patients with primary biliary cholangitis and incomplete response to UDCA<sup>1</sup>*

Jörn Schattenberg *et. al.* | Accepted for publication in Journal of Hepatology Jan. 7, 2021

# Elafibranor as a Potential Treatment for PBC (3/4)

## Elafibranor is a Competitive 2L Candidate for PBC

	Elafibranor*2 Phase 2a Week 12 Data  NCT03124108 EudraCT2016-003817-80	
	80mg (N=15)	Placebo (N=14)
<b>Composite endpoint</b> <i>% responders, ALP&lt;1.67 x ULN; Bili&lt;ULN and ALP reduction &gt;15%</i>	<b>67%</b> (p<0.001)	6.7%
<b>Alkaline phosphatase</b> <i>(% change vs baseline)</i>	<b>-48%</b> (p<0.001)	3%

	Ocaliva™3, Phase 3 POISE Month 12 Data  NCT01473524	
	10mg (N=73)	Placebo (N=72)
<b>Composite endpoint</b> <i>% responders, ALP&lt;1.67 x ULN; Bili&lt;ULN and ALP reduction &gt;15%</i>	<b>47%</b> (p<0.001)	10%
<b>Alkaline phosphatase</b> <i>(% change vs baseline)</i>	<b>~-36%**</b> (p<0.001)	~-4%**

▶ Access to the replay of GENFIT PBC Day, February 2021 for more information

**Note:** Indirect Comparison of Selected Biochemical Endpoint<sup>1</sup>. Both studies were add-on investigational therapy to UDCA or monotherapy in patients unable to tolerate UDCA. 2L: Second-line. \***Elafibranor** – mITT: All subjects w/ available baseline value and at least one post baseline value under treatment for ALP. \*\*These are estimations-based figures as reported data is based on actual change from Baseline n ALP (U/L). Elafibranor is an investigational compound and has not been approved by any regulatory authority in any indication. Obeticholic acid is registered in US and EU under the trade name OCALIVA®, please refer to the approved PI and SmPC. **References** : 1. Data from referenced clinical trials; 2. Schattner et al. J. of Hepatol. 2021;Vol. 74, Issue 6:1344-1354; 3. Nevens, et al. NEJM 2016;375(7):631-43.

# Elafibranor as a Potential Treatment for PBC (4/4)

## Phase 2a Efficacy and Safety Data Support ELATIVE™ Phase 3 PBC Trial

### Elafibranor demonstrated beneficial effects on clinically proven markers of PBC<sup>1</sup>

#### Cholestatic Markers



**GGT**

- 39%

(elafibranor 80mg, p=0.001)



**5'-nucleotidase**

#### Inflammation Markers



**IgM**

**hsCRP**

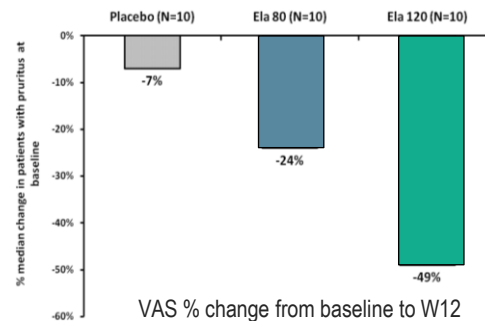
#### Bile Acid Precursors



**C4**

Generally safe and well tolerated

### Pruritus trend<sup>1</sup>



- 24% (elafibranor 80mg)

- 7% (PBO)

### Summary of Adverse, Treatment-Emergent Adverse, and Serious Adverse Events

Elafibranor <sup>1</sup> (Phase 2a – 12W study)	80mg (N=15), N (%) [SAEs]	120mg (N=15), N (%) [SAEs]	Placebo (N=15), N (%) [SAEs]
Patients with at any AE	13 (86.7) [46]	13 (86.7) [51]	12 (80.0) [28]
Patients with at any TEAE	12 (80.0) [41]	13 (86.7) [46]	12 (80.0) [25]
Patients with any treatment-related TEAE	2 (13.3) [6]	5 (33.3) [5]	1 (6.7) [1]
Patients with any serious TEAE	0 [0]	2 (13.3) [3]	0 [0]
Patients with any severe TEAE	2 (13.3) [3]	2 (13.3) [5]	2 (13.3) [2]
Patients with any serious treatment related TEAE	0 [0]	1 (6.7) [1]	0 [0]
Patients with any TEAE leading to study drug discontinuation	0 [0]	1 (6.7) [2]	0 [0]

Successful Phase 2a trial in PBC demonstrating efficacy and safety of elafibranor 80mg<sup>1,2</sup>

**Therapeutics:  
Acute on chronic liver failure**



# ACLF: a New Growth Opportunity for GENFIT

## High unmet medical need in ACLF

- **Life threatening disease** with **high mortality** at 30-90 days<sup>1</sup>
- **Standard of Care (SoC): no approved drugs**<sup>2</sup>
- **Medical need:** a therapy that helps patients to **survive ACLF** without liver transplantation

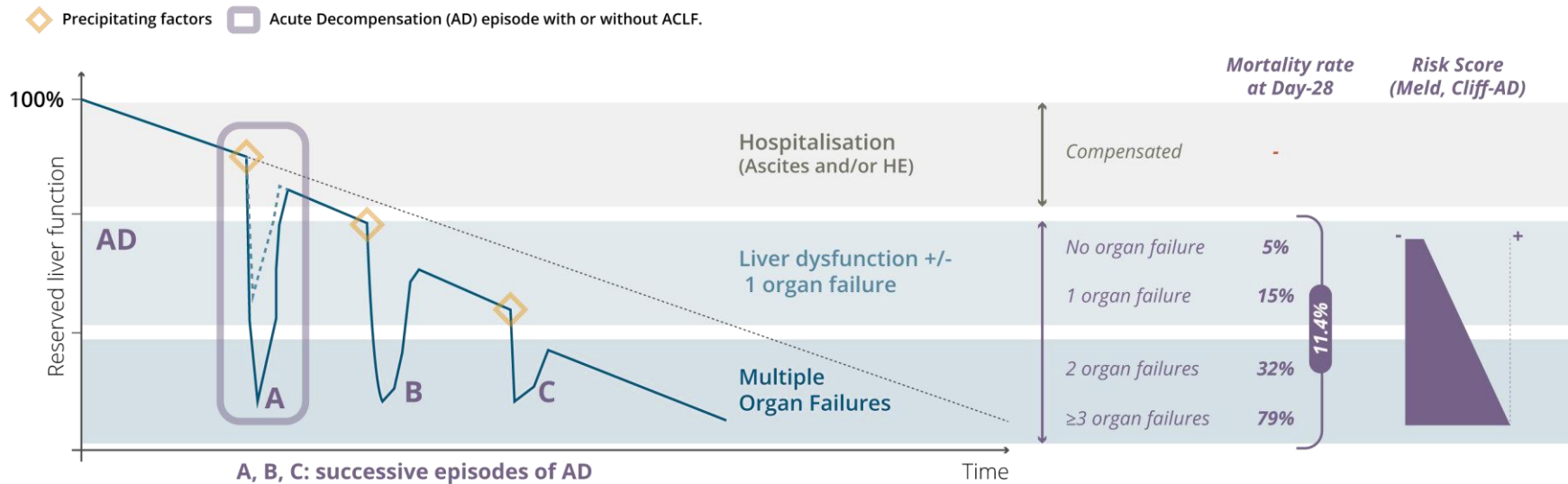
## Market opportunity

- **Significant cost to the U.S. healthcare system:** in-hospital costs **3.5 times higher** for an ACLF patient than for a decompensated cirrhosis patient without ACLF<sup>3</sup>
- **Hospital stays:** **16 days** average for ACLF patient (vs 7 days for cirrhotic patient)<sup>4</sup>
- **Nb of patients:** **180,000** in the U.S. only (**10-30%** prevalence in cirrhotic patients hospitalized in the U.S.)<sup>5</sup>
- **Market opportunity:** up to **~\$4bn** in the U.S. and **~\$2bn** in EU<sup>6</sup>
- **Orphan condition:** enhanced market **exclusivity** and clinical research **subsidies**<sup>7</sup>

## GENFIT's rationale

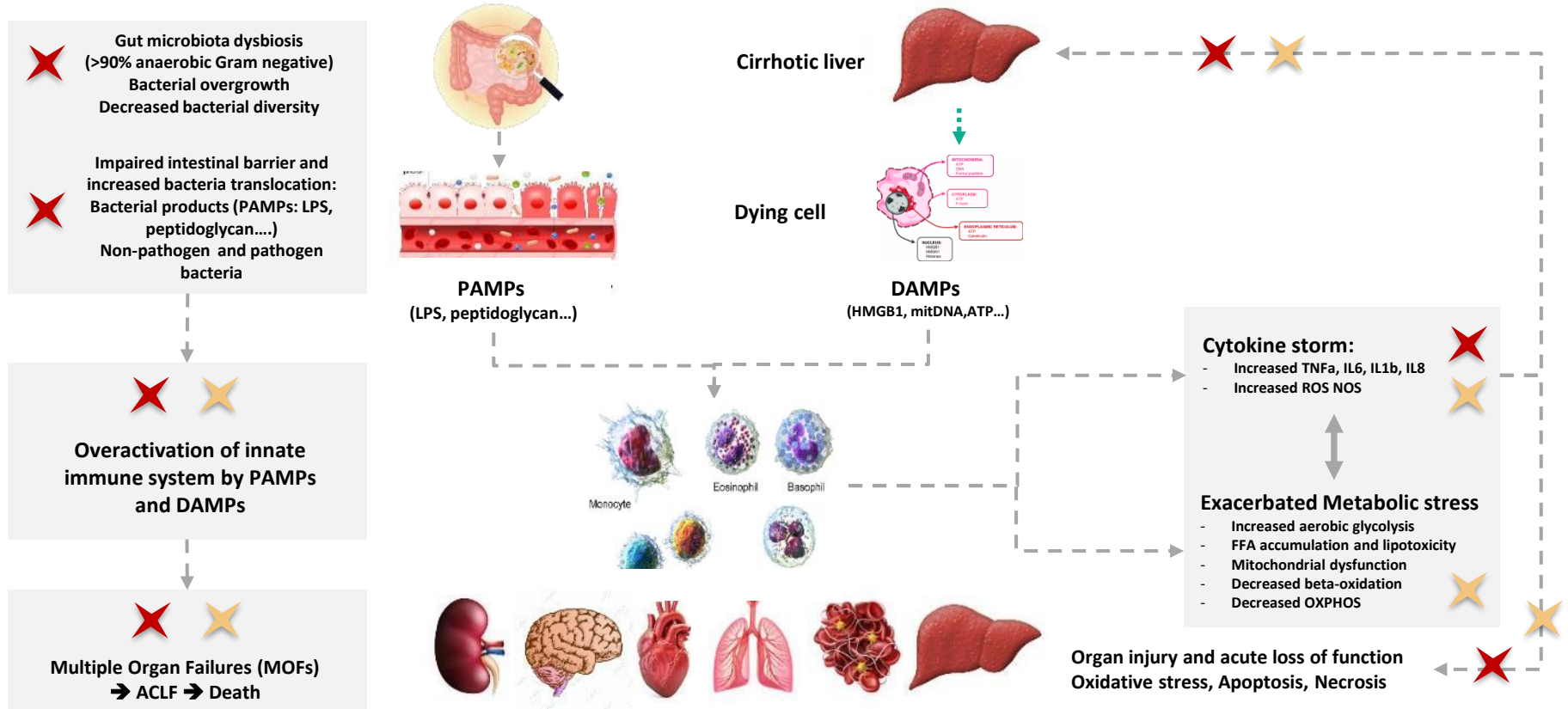
- **In-house expertise** (discovery to late stage) in severe liver diseases
- **Strong scientific rationale** based upon MOA for **elafibranor** and **GFT1575** as well as supportive preclinical data for **NTZ**<sup>8</sup>
- **Initiation of clinical program** for NTZ in ACLF, on-going preclinical program for GFT1575 and elafibranor
- **First clinical evidence expected in 2022** (NTZ)

# Natural History of AD and ACLF in Cirrhotic Patients



- **ACLF Definition** : acute deterioration of preexisting chronic liver disease, usually related to a precipitating event and associated with increased mortality at three months due to multi-system organ failure.
- **Precipitating factors** : Infection (bacterial, fungal or viral) / Reactivation of hepatitis B (or C) or superimposed viral hepatitis (e.g hepatitis E in India) / Alcohol / Drug Induced Liver Injury (DILI, herbal medicine) / Gastrointestinal bleeding / Portal vein thrombosis / Surgery / Ischemia / Flare of autoimmune hepatitis or Wilson disease.
- ACLF patient with known chronic liver disease experiencing sudden **multiple organ failures affecting: liver, kidney, coagulation, brain and lung functions**

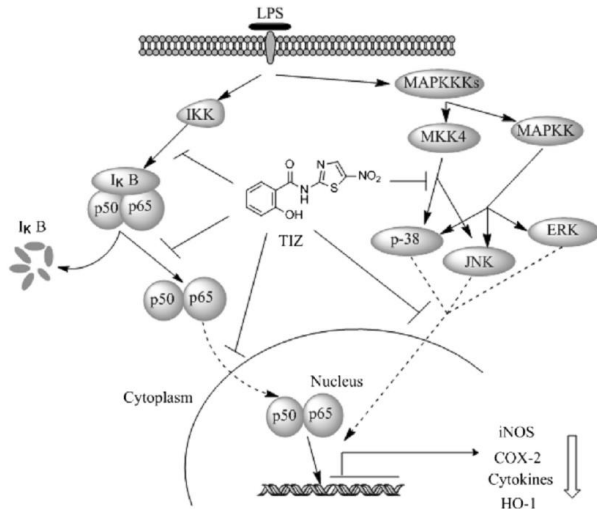
# NTZ and PPARs May Address Multiple Relevant Pathways in ACLF



# Highlights from the Literature on NTZ and PPARs in ACLF

## NTZ

- **Anti-infectious** properties may act on intestinal microbiota dysbiosis/overgrowth and improve intestinal barrier.
- Direct dose-dependent **anti-inflammatory** effects on immune cells (macrophages and PMN).



References:1. Shou et al. Inflammation Vol. 42:1336–1349(2019); 2. Dubreuil et al. Antimicrob Agents Chemother 1996 Vol.40:2266–2270; 3. Hecht et al. Antimicrob Agents Chemother 2007 Vol.51:2716–2719; 4. Hoffman et al. Antimicrob Agents Chemother 2007 Vol.51:868–876; 5. MacVay et al. Antimicrob Agents Chemother 2000 Vol.44: 2254-2258; 6. Megraud et al. Antimicrob.Agents Chemother. 1998 Vol. 42:2836-2840; 7. Musher et al. Clinical Infectious Diseases 2006 Vol.43:421-427; 8. Pankuch et al. Antimicrob Agents Chemother. 2006 Vol.50(3):1112-7.

## PPARs

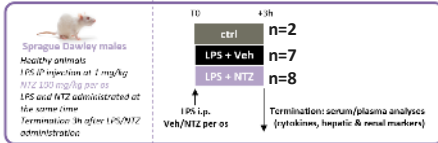
- In ACLF, an over-activation of the innate immune-system induces a **critical energetic adaptation** i) increased aerobic glycolysis ii) profound decrease in FFA beta-oxidation<sup>1,2</sup>
- In the liver and other peripheral organs, an over-metabolic adaptation leads to:
  - Energy deprivation
  - FFA acid accumulation and lipotoxicity
  - Mitochondrial dysfunction and ER stress
  - Oxidative stress
  - Hepatocyte necrosis and apoptosis...<sup>1,2</sup>
- **PPARs are master switches of energetic adaptation**, and their activation directly **modulates inflammatory response** of immune cells.<sup>3</sup>
- In animal models, over-activation of the immune system, some selective agonists (PPAR $\alpha$ , PPAR $\gamma$  and PPAR $\delta$ ) have shown certain **favorable effects on MOF's and mortality**.<sup>4</sup>

Notes: MOF=Multiple organ failures

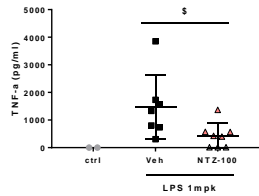
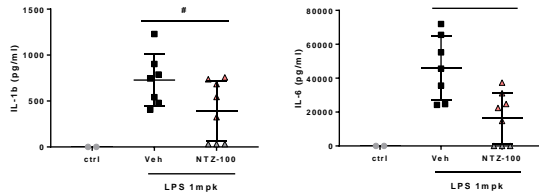
References:1. Zaccherini G. JHEP Reports 2021 Vol.3:100176; 2. Moreau et al. J. of Hepatol. 2020 Vol.72(4):688-701; 3. Standage et al. Critical Care Medicine 2016 Vol. 44(6):594-603; 4. Paumelle et al. J. of Hepatol. 2019 Vol.70(5):963-973.

# Evidence Generated by GNFT – NTZ in ACLF

## In vivo model #1

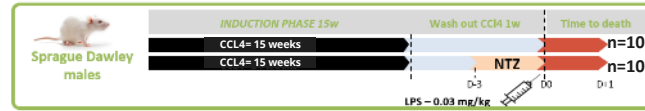


### Activity on inflammatory markers

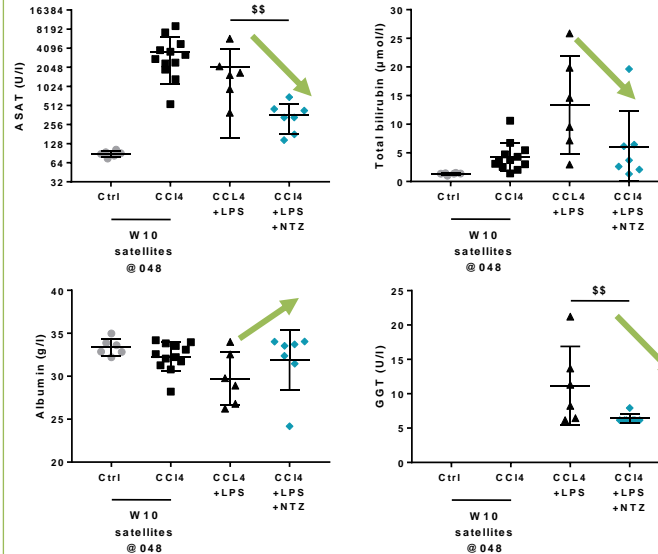


### Activity on liver enzymes

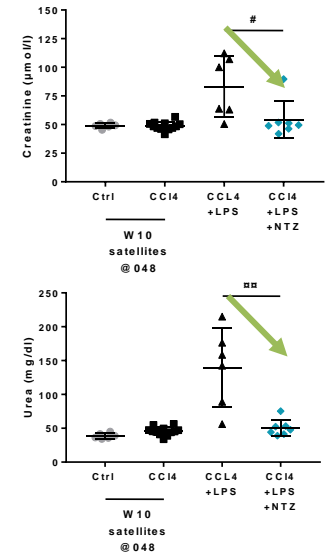
## In vivo model #2 (ACLF)



### Activity on liver failure markers



### Activity on kidney failure markers





**Diagnostics:  
NASH**

# NIS4<sup>®</sup> Technology to Diagnose Millions of Patients with Active NASH and Fibrosis

## High unmet medical need in NASH diagnostics

- 6.7M patients have NASH and significant fibrosis (F $\geq$ 2) in the US<sup>1†</sup>, **only 900,000 are diagnosed**
- **Poor disease awareness** among patients with NAFLD due to nonspecific symptoms<sup>2,3</sup>
- Liver biopsy, the reference standard for NASH, poses **risks for patients and has technical limitations**<sup>4</sup>
- Patients who have NASH and Significant Fibrosis (F $\geq$ 2), also referred to as **at-risk NASH**, are at increased risk of developing cirrhosis and/or complications of severe liver disease<sup>5-7</sup>
- There are **no non-invasive diagnostic tests** specifically developed to identify at-risk NASH

## Market opportunity

- Prevalence of NASH among patients with diabetes: **25 to 30%**<sup>8</sup>
  - Diabetes patients in U.S.: **34M (13% = prevalence of diabetes in U.S. population 2010 US Census: 308,745,538 U.S. population (74,181,467 U.S. population under age 18 + 234,564,071 U.S. adults)**<sup>9</sup>
- Prevalence of NASH among patients with obesity (BMI>30): **25 to 30%**<sup>8</sup>
  - Obese patients in U.S.: **94M- (39.8% = prevalence of obesity in U.S.)**<sup>10</sup>

## GENFIT's rationale

To identify patients with at-risk NASH, GENFIT has invested in a strategic R&D program:

- **Statistical analysis of >100 circulating blood-based biomarkers**<sup>5</sup>
- **Comparison of results against liver biopsy results**<sup>5</sup>
- **Testing and validation in 3 independent cohorts with suspected NAFLD**<sup>5</sup>
- **Designed for utilization and commercialization in clinical research and clinical management settings**

## Go To Market

- **[NASHnext™ clinical diagnostic launched by Labcorp in April 2021.](#)**  
*Test is powered by GENFIT's NIS4<sup>®</sup> Technology*

Note: †Case numbers for the specified populations are approximated as follows: Active NASH and fibrosis, i.e. at-risk NASH is F2 + F3 + F4, NASH with cirrhosis is F4, and ESLD is decompensated cirrhosis.  
References: 1. Estes et al. Hepatology. 2018;67(1):123-133; 2. Chalasani et al. Hepatology. 2018;67(1):328-357; 3. Bugianesi et al. J. of Hepatol. 2005;42(5):784-785; 4. Cleveland et al. Clin Liver Dis (Hoboken). 2018;11(4):98-104; 5. Harrison et al. Lancet Gastroenterol Hepatol. 2020; 5(11):970-985; 6. Angulo et al. Gastroenterology. 2015;149(2):389-397.e10; 7. Sanyal et al. Presented at: The Liver Meeting 2019 (abstr 1190); 8. Anstee, Q. M. & Day, C. P. Nat. Rev. Gastroenterol. Hepatol. 10, 645-655 (2013); 9. National Diabetes Statistics Report 2020; 10. National Center for Health Statistics.

# NIS4<sup>®</sup>: A Proprietary and Differentiated Technology for the Diagnosis of At-Risk NASH

Currently Available Diagnostic Method	NASH Activity	Fibrosis	Standard Ordering HCP	Method	Designed for NASH
<b>NIS4<sup>®</sup></b> <sup>1</sup>			<b>Any healthcare provider</b>	<b>Non-invasive</b>	
<b>BIOPSY</b>			<b>Hepatologist/GI</b>	Invasive	-
<b>ULTRASOUND</b>	Steatosis Only	-	<b>Any healthcare provider</b>	<b>Non-invasive</b>	-
<b>FibroScan<sup>®</sup></b>	Steatosis Only		<b>Hepatologist or GI</b>	<b>Non-invasive</b>	-
<b>NFS</b>	-		<b>Any healthcare provider</b>	<b>Non-invasive</b>	-
<b>FIB-4</b>	-		<b>Any healthcare provider</b>	<b>Non-invasive</b>	-
<b>APRI</b>	-		<b>Any healthcare provider</b>	<b>Non-invasive</b>	-
<b>ELF<sup>™</sup></b>	-		<b>Hepatologist/GI</b>	<b>Non-invasive</b>	-

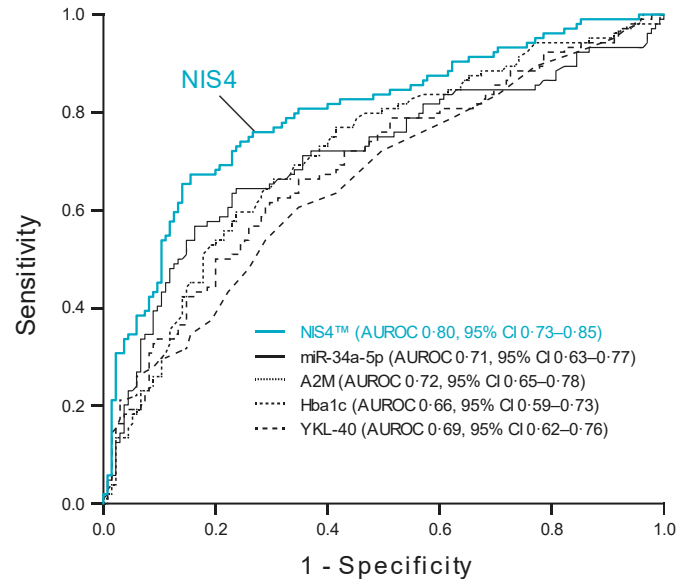
# NIS4<sup>®</sup> Technology: An Innovative Approach Built Upon miRNA Science

**NIS4<sup>®</sup> is the only non-invasive, blood-based technology specifically designed to assess both NASH activity and liver fibrosis among patients with metabolic risk factors**

NIS4<sup>®</sup> assigns a single score that ranges from 0.00 to 1.00 based on blood/serum levels of 4 biomarkers:

- miR-34a-5p
  - Alpha2-macroglobulin (A2M),
  - YKL-40,
  - Hemoglobin A1c (HbA1c),
- NIS4<sup>®</sup> significantly outperformed other blood biomarker-based NASH or fibrosis diagnostics, including FIB-4, NFS, APRI, and ELF for the detection of at-risk NASH
  - NIS4<sup>®</sup> performance data have been generated against liver biopsy in more than 900 patients across the NASH/NAFLD spectrum

Comparison of NIS4 vs individual biomarker components to identify patients with at-risk NASH within the discovery cohort (n=239)\*



# NIS4<sup>®</sup> Technology Published in *The Lancet Gastroenterology & Hepatology*

THE LANCET  
Gastroenterology & Hepatology

***A blood-based biomarker panel (NIS4) for non-invasive diagnosis of non-alcoholic steatohepatitis and liver fibrosis: a prospective derivation and global validation study<sup>1</sup>***

Stephen A. Harrison, Vlad Ratziu *et. al.* | Accepted for publication in *The Lancet Gastroenterology & Hepatology*  
Aug. 5, 2020

## NIS4<sup>®</sup> Technology

- High diagnostic performance with low misclassification rates to rule in and rule out at-risk NASH
- Consistent test performance vs. other tests – more consistent results irrespective of BMI, gender, presence or absence of diabetes, dyslipidemia, hypertension, or aminotransferase levels
- Provides a definitive diagnosis of at-risk NASH for over 72% of patients with high accuracy

## Tests powered by NIS4<sup>®</sup> technology can be adapted to different clinical trial or clinical goals

- Potential to reduce unnecessary liver biopsies in patients with lower risk of disease progression
- May improve referral pathways amongst multiple patient sub-populations to liver specialty care
- May enable earlier identification of higher risk patients and allow for focused patient management to mitigate disease progression

# The Progression and Future of NIS4<sup>®</sup> Technology

A test powered by clinically validated NIS4<sup>®</sup> technology is the simple solution to identify at-risk NASH patients



Large scale commercial launch of NASHnext<sup>™</sup> by Labcorp: a non-invasive, blood-based, molecular LDT for the identification of patients with at-risk NASH powered by GENFIT's NIS4<sup>®</sup> Technology:

## Target Populations with Suspected NASH

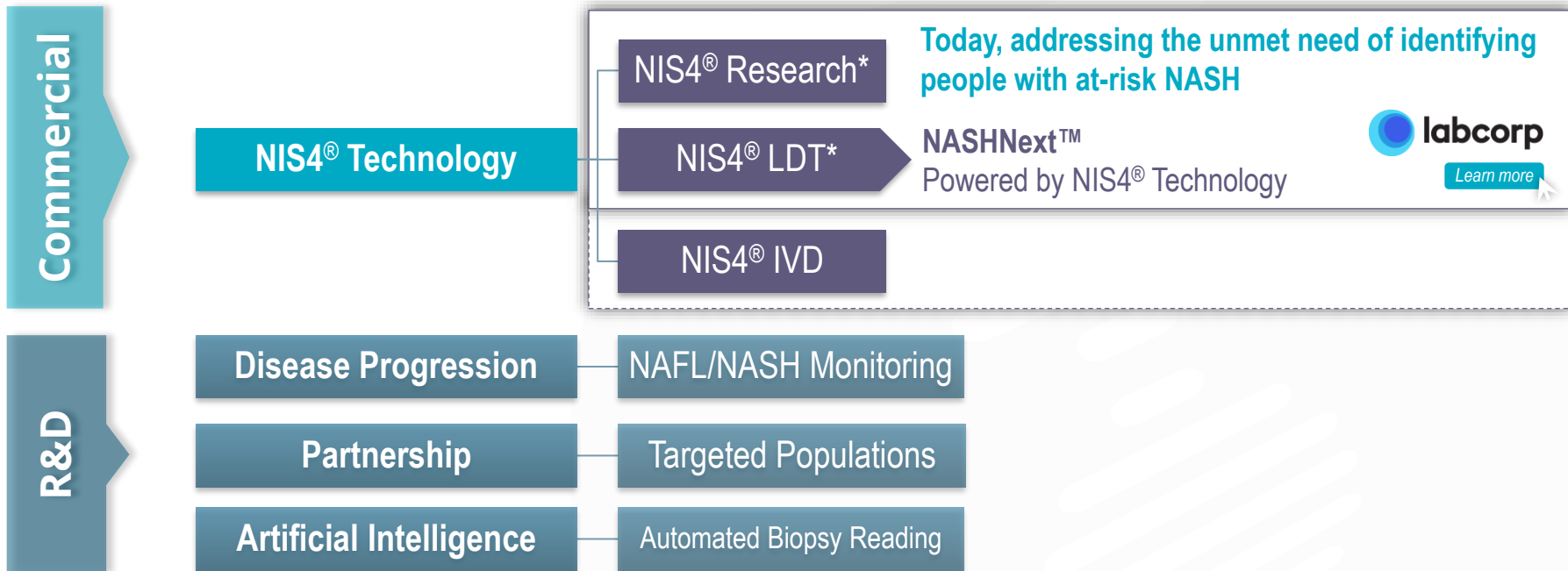
- Diabetes patients in U.S.: 34M<sup>1</sup>
- Obese (BMI<sub>≥</sub>30) patients in U.S.: 94M<sup>2</sup>

## Upcoming projected development milestones

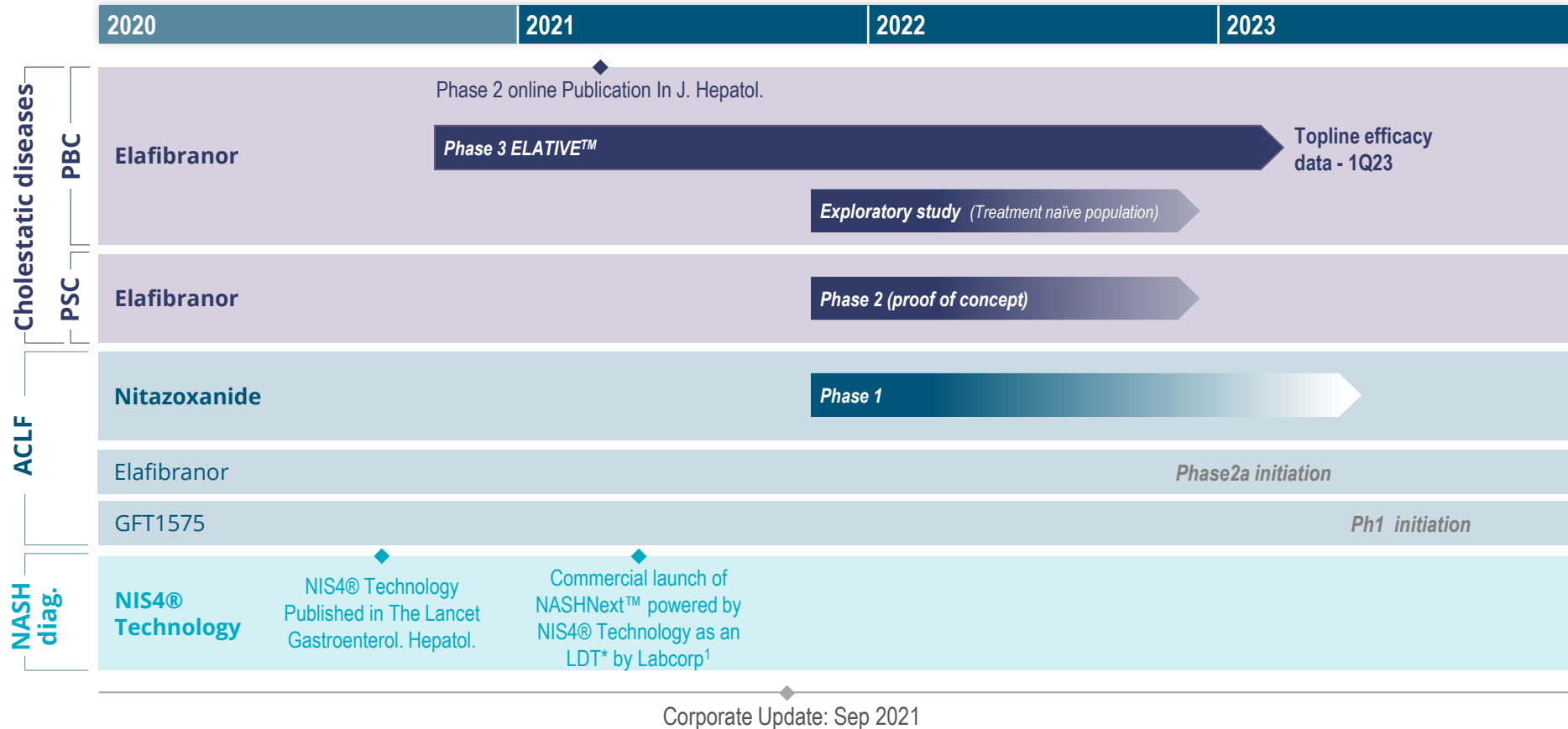
- Future Submission to FDA for IVD approval
- Future Submission to EU Notified Body for CE mark

# NASH Diagnostics: Accelerating Technology

## A platform of fit-for-purpose NASH diagnostic solutions



# Development Roadmap



# GENFIT: A Pioneer in the Diagnosis and Treatment of Liver Disorders

Leader in PPAR research • Pioneer in NASH and PBC • Proven team with global scientific, regulatory, and commercialization expertise

## Milestones

### Cholestatic diseases Therapeutics

- 3Q20 ELATIVE™ Clinical study beginning of enrolment
- 1Q21 Publication of Phase 2 study evaluating elafibranor in PBC in J. of Hepatol.
- 2Q21 Creation of a new franchise on cholestatic diseases - Pre-clinical R&D programs progress to clinical phase

### ACLF Therapeutics

- 2Q21 Creation of the new franchise - Pre-clinical R&D programs progress to clinical phase

### NASH Diagnostics

- 1Q19 Licensing agreement with Labcorp-Covance for use of NIS4® technology in clinical research
- 2Q19 Partnership with Terns Pharmaceuticals for commercialization of elafibranor in Greater China (PBC)
- 3Q20 Exclusive licensing agreement with Labcorp for NIS4® Technology development and commercialization of a NASH diagnostic test
- 2Q21 Commercial launch of NASHnext™ powered by NIS4® technology as an LDT by Labcorp

### Financials

- 1Q21 Renegotiation of convertible debt & corporate reorganization: Convertible debt maturity pushed back to Oct 2025
- 1Q21 Cash position: €108.9M
- 2Q21 Residual convertible debt down to nominal amount of €57.2M as of April 13, 2021

Next step September 2021: Corporate update