

# Pioneering Precision Medicine for Neurodegeneration

NASDAQ: ACIU | Investor Presentation, June 2023



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www.acimmune.com

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## AC Immune pioneering new ways to treat neurodegenerative diseases

Combining Precision Medicine and early, targeted treatment



Broad, diverse pipeline – 16 programs

1 Phase 3 program and 5 in Phase 2



Key differentiation: Precision Medicine Integrates therapeutics and diagnostics



Multiple global partnerships

>CHF 3 billion in potential milestones



Clinically validated technology platforms

Best-in-class small molecules and biologics



**Strong Balance sheet** 

Funded into Q3 2024



- Based in Lausanne, Switzerland
- ~150 employees
- Listed September 2016 (NASDAQ: ACIU)
- 83.6 million shares outstanding<sup>1</sup>
- Cash of CHF 105.4 million<sup>2</sup> (~USD 115 million)

(1) As of March 31, 2023; excluding treasury shares; (2) As of March 31, 2023

# Neurodegenerative diseases represent a large and growing market

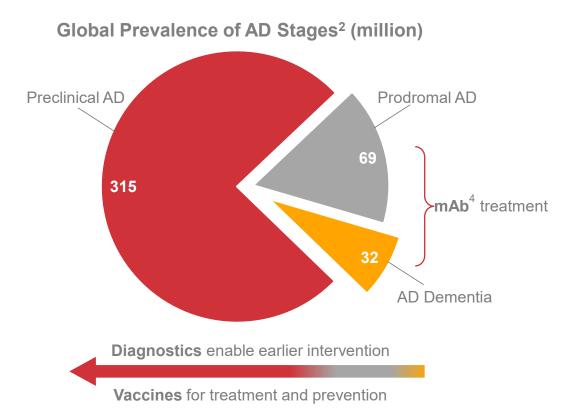
Prevention the best avenue to long-term preservation of cognition and function.

>\$1 Trillion global annual cost of dementia1

>90 million with Alzheimer's disease globally<sup>2</sup>

>300 million with preclinical AD3 at risk of disease

>400 million people addressable by vaccination



- AD prevention through combination of earlier diagnosis with early vaccination
- Global disease prevention market potentially over 300 million people

(1) Alzheimer's Disease International 2019; (2) Gustavsson et al. Alzheimer's and Dement. 2023 19:658-670. https://doi.org/10.1002/alz.12694; (3) Alzheimer's disease; (4) Monoclonal antibody



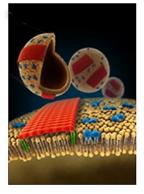
# SupraAntigen® and Morphomer® platforms

An integrated approach to Central Nervous System (CNS)-specific therapies

**CNS-optimized** 

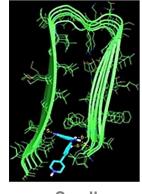
**Clinically validated** 

**SupraAntigen**®



Vaccines & Antibodies

**Morphomer**<sup>®</sup>



Small Molecules

Conformationspecific

Precision medicine enabling

**Biologicals** 

# External validation and cash generated by 5 partnering<sup>1</sup> deals

Managing risk and retaining significant upside

Product	Dev. phase	Total value <sup>2</sup>	Upfront <sup>2</sup>	Milestones received to date <sup>2</sup>	Royalties	Partners
Crenezumab (anti-Abeta antibody)	Phase 2	USD 340	USD 25	USD 40	Mid-single digits to mid-teens	Genentech A Member of the Roche Group
Semorinemab (anti-Tau antibody)	Phase 2	CHF 430	CHF 17	CHF 42	Mid-single digits to low-double digits	Genentech A Member of the Roche Group
ACI-35.030 (anti-pTau vaccine)	Phase 1b/2a	CHF 500	CHF 26	CHF 5	Low-double digits to mid-teens	Janssen  HERRICHTCH COMMUNIS  OF Schurch Softman.
Tau PET <sup>3</sup> imaging agent	Phase 3 <sup>4</sup>	EUR 160	EUR 0.5	EUR 7	Mid-single digits to low-teens	Life Molecular Imaging
Tau Morphomer® small molecules	Phase 1 <sup>5</sup>	CHF 1,860	CHF 80 +USD 50 <sup>6</sup>	CHF 40	Low-double digits to mid-teens	Lilly
Total (millions) <sup>7</sup>		CHF ~3,311	CHF 155.28	CHF 132.4		



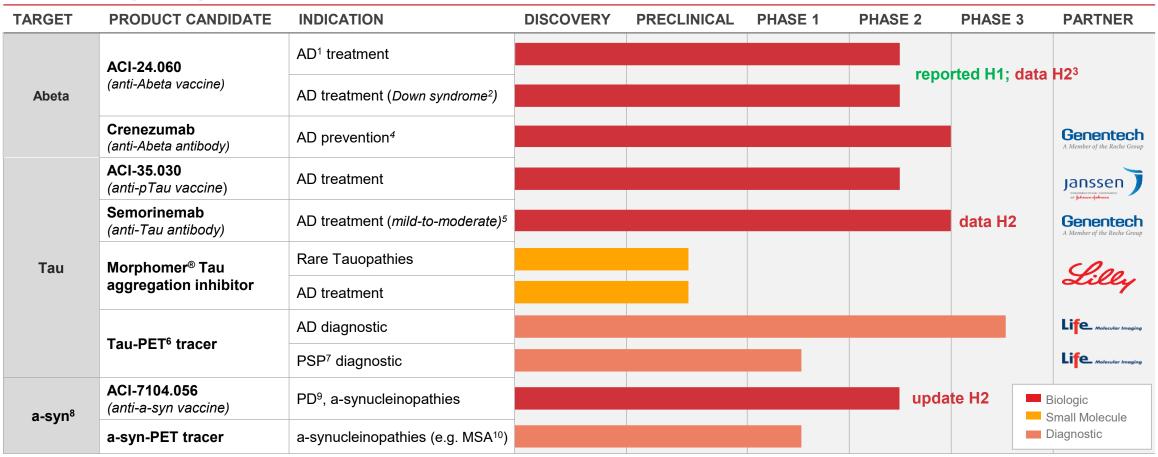
<sup>(1)</sup> Disclosure limited due to confidentiality agreements with collaboration partners; (2) In millions; (3) Positron emission tomography; (4) In Alzheimer's disease; (5) Phase 1 completed; (6) Equity investment; (7) Converted to CHF on date of receipt; (8) Excludes convertible note agreement of USD 50 million



## Broad and robust pipeline in neurodegenerative diseases

Driven by validated proprietary technology platforms for sustained growth

## **Clinical Stage Programs**

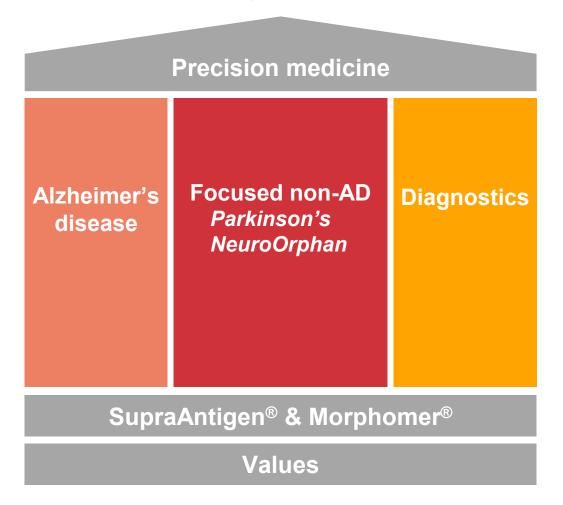


<sup>(1)</sup> Alzheimer's disease; (2) Down syndrome-related Alzheimer's disease; (3) Refers to expected readouts from the ABATE Phase 1b/2 trial of ACI-26.060 in patients with AD and patients with Down syndrome; (4) Prevention trial API-ADAD in Colombia; (5) Open label extension study is ongoing; (6) Positron emission tomography; (7) Progressive supranuclear palsy; (8) alpha-synuclein; (9) Parkinson's disease; (10) Multiple system atrophy



## Business Strategy 2023: advancing vaccine and non-AD portfolio

Focus on delivering Precision Medicine to enhance value creation



#### Alzheimer's disease

- Accelerate development of novel late-stage therapies with partners
- Accelerate wholly-owned optimized anti-Abeta vaccine (ACI-24.060)
   with parallel development in AD<sup>1</sup> and DS<sup>2</sup>

## **Non-AD and NeuroOrphans**

- Increase strategic focus in non-AD to Parkinson's disease
- Advance anti-a-syn<sup>3</sup> vaccine into late-stage development

## **Diagnostics for precision medicine**

 Advance our differentiated diagnostic pipeline for Parkinson's disease and TDP-43<sup>4</sup>-based pathologies

(1) Alzheimer's disease; (2) Down syndrome; (3) Alpha-synuclein; (4) TAR DNA-binding protein 43

## Key milestones for value creation in 2023

Multiple clinical readouts for wholly-owned vaccines

<b>~</b>	Achieved		
	Clinical readouts		
	Other development events		

Vaccines		H1	H2			
	Abeta	~		Initiation of Down syndrome cohort of Phase 1b/2 ABATE study		
40104000		~		IND submission to enable expansion of ABATE study to U.S.		
ACI-24.060		~		Two interim analyses in AD¹ – safety, immunogenicity		
				Interim analysis in Down syndrome – safety, immunogenicity	Amyloid-PET Data in H1 2024	
ACI-35.030 Tau			0	Further development with initiation of next trial in AD followed by milestone payment		
<b>ACI-7104.056</b> a-syn <sup>2</sup>				Phase 2 VACSYN study in PD update		
Monoclonal antibodies						
<b>Semorinemab</b> Tau				Phase 2 Lauriet Trial Open Label Extension results		
Monoclonal antibody TDP-43 <sup>3</sup>			0	Candidate into preclinical development (tox)		
Diagnostics						
a-syn-PET⁴ tracer a-syn			0	Next clinical candidate declaration for PD <sup>5</sup>		
TDP-43-PET tracer TDP-43		0		Clinical candidate declaration		

(1) Alzheimer's disease; (2) Alpha-synuclein; (3) TAR DNA-binding protein 43; (4) Positron emission tomography; (5) Parkinson's disease

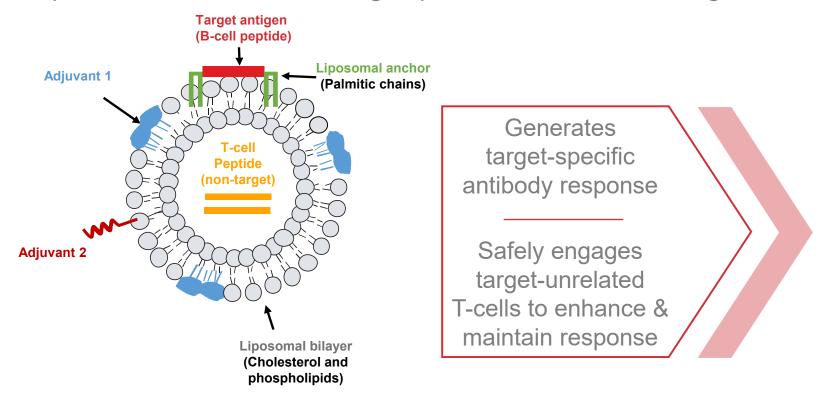




Vaccine programs targeting neurodegenerative diseases

# Disruptive potential of SupraAntigen®-V

Optimized vaccines delivering superior results in neurodegenerative diseases



# **Unprecedented Clinical Performance**

Immunogenicity	++++1
Target specificity	++++2
Conformation specificity	+++
Avidity increase over time	+++
Sustainability of response	+++
Boosting	+++
Class switching IgM to IgG	+++
Evidence of memory B cells	+++



- Robust immunogenicity and strong safety demonstrated in humans
- Evidence for lasting immune response supporting a disease prevention approach

(1) 100% response after 1st injection; (2) Increases over time

# SupraAntigen® vaccines offer significant advantages over mAbs1

Vaccine—based approach provides opportunity to prevent neurodegenerative diseases globally

## SupraAntigen® vaccines

### Monoclonal antibodies

- Onsistent, long-lasting immunity
- ✓ Limited dosing (annual or bi-annual)
- ✓ No observed ARIA-E² to date
- Cost-effective

Transient effect

More frequent dosing (bi-weekly or monthly)

ARIA-E rates of concern<sup>3</sup>

High costs (per patient per year)

Infrastructure, infusion inconvenience, monitoring

- AD prevention by combining early diagnosis with early vaccination potentially superior to mAb treatment
- Vaccines are believed to be the only realistic possibility for global prevention of neurodegenerative diseases

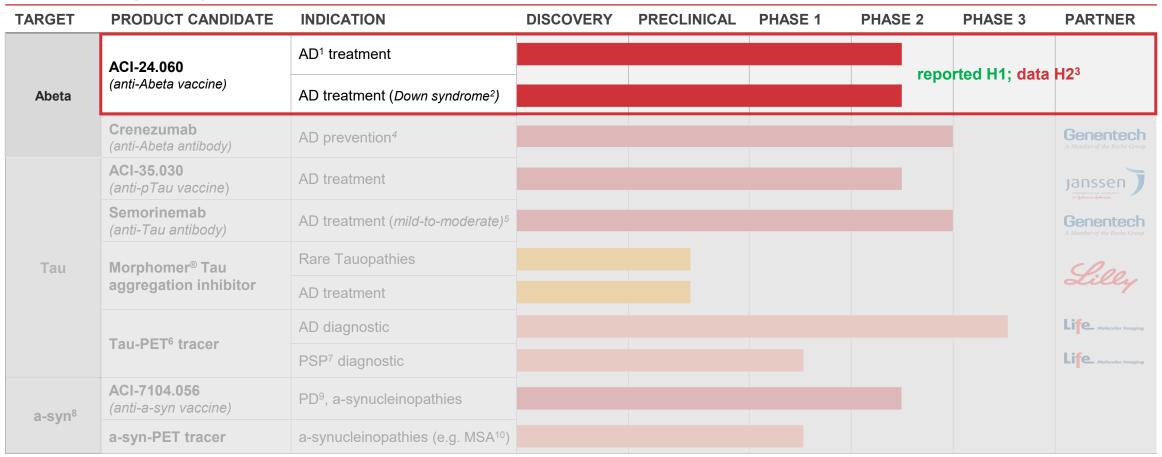
(1) Monoclonal antibodies; (2) Amyloid-related imaging abnormalities; (3) Lecanemab ARIA-E rate was 13.1% compared to placebo 1.5% (CLARITY Phase 3); Donanemab ARIA-E rate was 24.0% (TRAILBLAZER-ALZ2 Phase 3) compared to placebo <1% (TRAILBLAZER-ALZ Phase 2)



# ACI-24.060: Vaccine designed to clear Abeta plaques to treat AD<sup>1</sup>

ACI-24.060 targets pyroGlu- and oligomeric Abeta, which are believed to drive AD progression

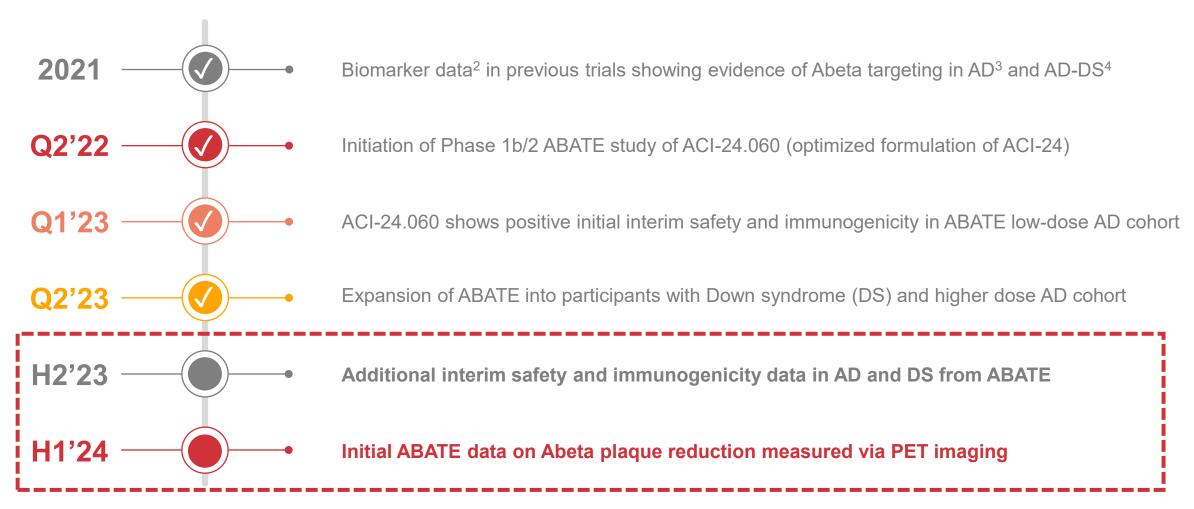
## **Clinical Stage Programs**



<sup>(1)</sup> Alzheimer's disease; (2) Down syndrome-related Alzheimer's disease; (3) Refers to expected readouts from the ABATE Phase 1b/2 trial of ACI-26.060 in patients with AD and patients with Down syndrome; (4) Prevention trial API-ADAD in Colombia; (5) Open label extension study is ongoing; (6) Positron emission tomography; (7) Progressive supranuclear palsy; (8) alpha-synuclein; (9) Parkinson's disease; (10) Multiple system atrophy

## ACI-24 program: Achievements and anticipated milestones

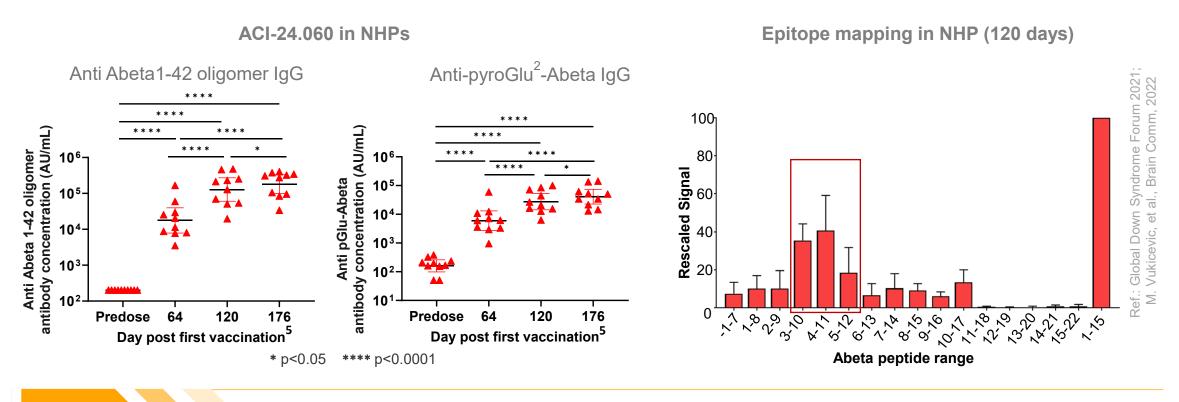
Initial Ph 1b/2 data on Abeta plaque reduction measured via PET<sup>1</sup> imaging expected in H1 2024



(1) Positron emission tomography; (2) Sol, O. et al., 2021 CTAD poster and Rafii, M. et al., 2022 JAMA Neurology 79:565-574; (3) Alzheimer's disease; (4) Down syndrome

# ACI-24.060: Potent immune response against toxic Abeta species

Strong antibody response against targets of lecanemab and donanemab (NHP1)

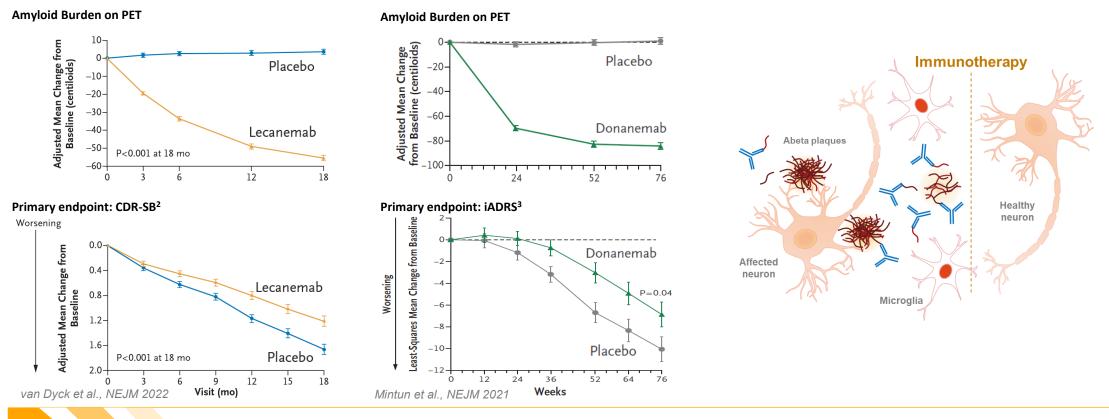


- Sustained, boostable IgG response against Abeta oligomers<sup>3</sup> and pyroglutamate<sup>4</sup> Abeta
- The optimized vaccine represents a potential breakthrough compared to previous anti-Abeta vaccines



# Lowering of Amyloid PET<sup>1</sup> burden is valid as a biomarker for clinical effect

Lecanemab & donanemab trials established PET imaging as surrogate for clinical effect



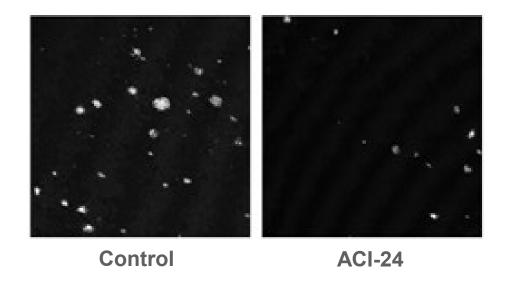
- Targeting small aggregates such as Abeta oligomers or fragments such as Abeta 1-42 and pyroglutamate Abeta3-42 (pGlu-Abeta3-42) has demonstrated clinical utility
- Reductions in Abeta plaques can be detected as early as 3 months after the start of treatment

(1) Positron emission tomography; (2) Clinical dementia rating – sum of boxes; (3) Integrated Alzheimer's disease rating scale

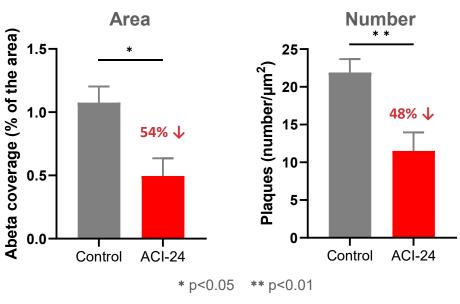
## ACI-24 vaccination reduces Abeta plaque burden

Significant Abeta plaque reduction in vivo in preclinical APPxPS1 model<sup>1</sup>

# Abeta Plaque Staining in Control and ACI-24 Vaccinated Mice



#### **Quantification of Abeta Plaques**



Ref: Njavro, et al., Cells 2023

- ACI-24 vaccination significantly reduces Abeta plaque burden in a *preventive* APPxPS1 model
- Similar plaque reductions seen with lecanemab and donanemab in less aggressive APP models

(1) Alzheimer's disease mouse model: APPxPS-1 double transgenic mice; (2) Alzheimer's disease; (3) Antibodies

# ABATE: Biomarker-based Phase 1b/2 study of ACI-24.060 in AD¹ and DS²

## Placebo-controlled Phase 1b/2 Study Overview

## **Trial Schematic**

## **Adaptive Study Design**

Both

- Interim analyses of safety/tolerability & immunogenicity
- Biomarker analyses including Abeta PET<sup>3</sup> and others

AD

- Up to 4 different doses and/or dose regimens
- Expansion of one cohort to assess effect on Abeta PET

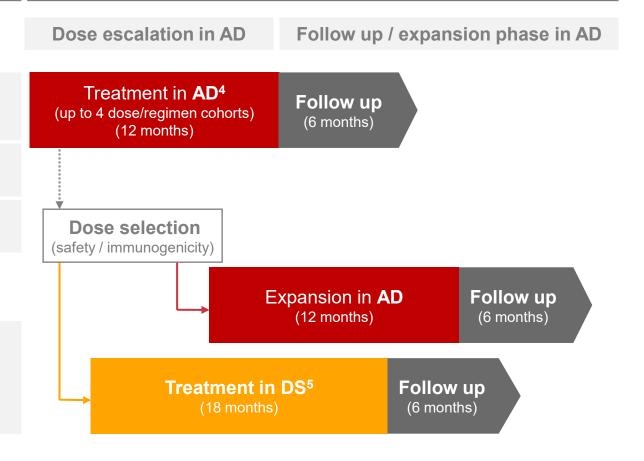
DS

 Initiation using selected dose identified in AD (based on safety/tolerability and immunogenicity)

#### **Outcome measures**

Soth

- Safety/tolerability
- Pharmacodynamics: Serum anti-Abeta antibody titers
- Abeta-PET imaging
- Exploratory biomarkers and clinical endpoints

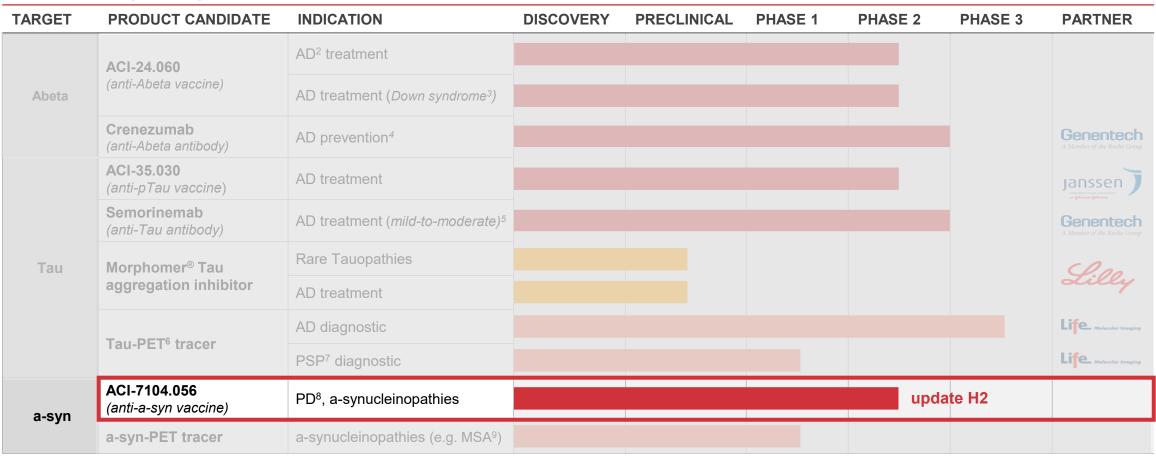


(1) Alzheimer's disease; (2) Down syndrome-related AD; (3) Positron emission tomography; (4) AD participants must between 50 – 75 years of age and have prodromal AD with Clinical Dementia Rating Global Score of 0.5 and Abeta pathology confirmed by PET scan; (5) Cohort comprised of non-demented people living with DS (age 35 – 50 years) and Abeta pathology confirmed by PET scan

# ACI-7104: Anti-a-syn<sup>1</sup> vaccine being developed for Parkinson's disease

## Update on Phase 2 trial expected in H2

## **Clinical Stage Programs**



(1) alpha-synuclein; (2) Alzheimer's disease; (3) Down syndrome-related Alzheimer's disease; (4) Prevention trial API-ADAD in Colombia; (5) Open label extension study is ongoing; (6) Positron emission tomography; (7) Progressive supranuclear palsy; (8) Parkinson's disease; (9) Multiple system atrophy

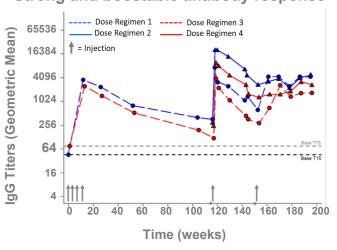


# Anti-a-syn<sup>1</sup> vaccine is clinically validated<sup>2</sup> in Parkinson's disease

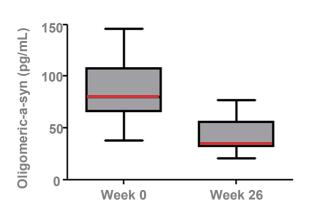
Phase 1 results in *The Lancet Neurology* support best-in-class profile

# THE LANCET Neurology

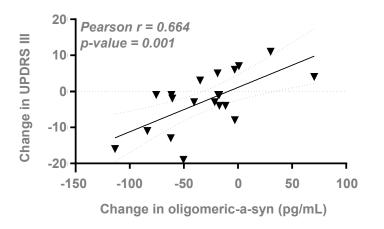




50% reduction<sup>3</sup> of pathological a-syn in CSF<sup>4</sup>



Changes<sup>5</sup> in oligo-a-syn and UPDRS III correlate



Safe and well tolerated with no safety concerns noted in patients followed for more than 3.5 years

3

Target engagement evidence: 50% reduction in pathological (oligomeric) a-syn in the CSF

Strong and boostable antibody responses

4

Signal of clinical efficacy: stabilization of UPDRS<sup>6</sup> III scores correlated with reductions in oligomeric a-syn

(1) alpha-synuclein; (2) Volc *et al.*, Lancet Neurol. 2020; (3) Data from 75 µg dose group; (4) Cerebrospinal fluid; (5) Change in oligomeric a-syn calculated at week 26, change in UPDRS III calculated at week 100; (6) Unified Parkinson's Disease Rating Scale

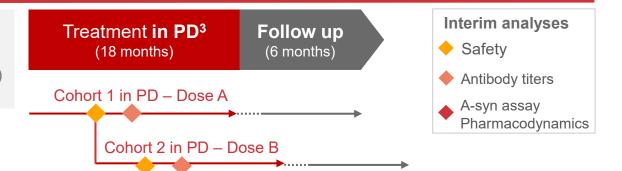
# VacSYn: an adaptive biomarker-based Phase 2 study of ACI-7104 in early PD1

## Placebo-controlled Phase 2 Study Overview

- Seamless transition
  - All participants from Part 1 will contribute to final analysis
- Biomarker based interim analyses
  - Early immunogenicity to tailor dose and/or dose regimen
  - Apply disease-relevant biomarkers for early transition to filing

## Part 1: Safety & PK/PD<sup>2</sup>

- Key immunogenicity measures
- Measures of pathological a-syn<sup>4</sup> (a-syn oligomers and aggregates)



## Part 2: PoC<sup>5</sup> in early PD

- Motor and Non-Motor Functioning (UPDRS<sup>6</sup> based)
- Degeneration of dopaminergic terminals (DaT SPECT<sup>7</sup> imaging)
- Advanced MRI (including ASL<sup>8</sup> and DTI<sup>9</sup>)
- Digital biomarkers of motor and non-motor function
- Functional and patient reported outcomes

Expansion cohort (up to 150 subjects)
Dose previously tested in Part 1

Treatment in PD
(18 months)

Follow up
(6 months)

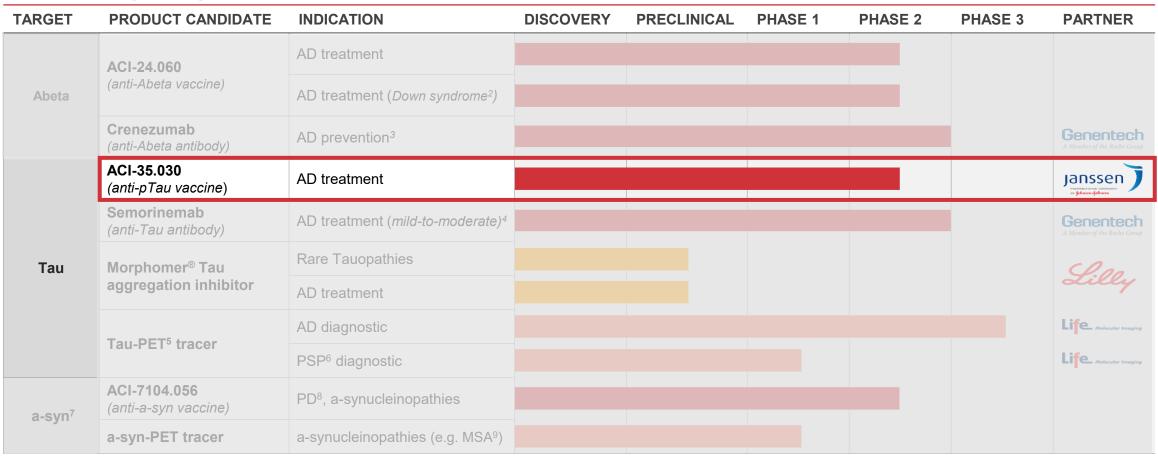
(1) Parkinson's disease; (2) Pharmacokinetics and Pharmacodynamics; (3) Participants must have idiopathic PD and be stable on up to 300 mg of L-Dopa treatment and dopaminergic deficit determined by Dopamine Transporter Single Photon Emission Computed Tomography; (4) alpha-synuclein; (5) Proof-of-concept; (6) Unified Parkinson's disease rating scale; (7) Dopamine Transporter Single Photon Emission Computed Tomography; (8) Arterial spin labeling; (9) Diffusion tensor imaging



# ACI-35.030: Anti-pTau vaccine being developed for AD<sup>1</sup>

Further clinical development in AD and milestone payment expected in H2

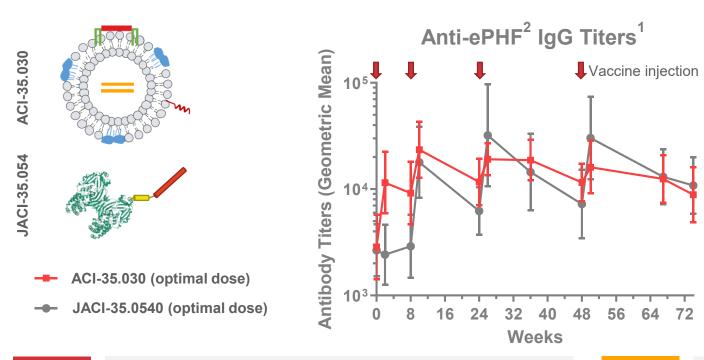
## **Clinical Stage Programs**

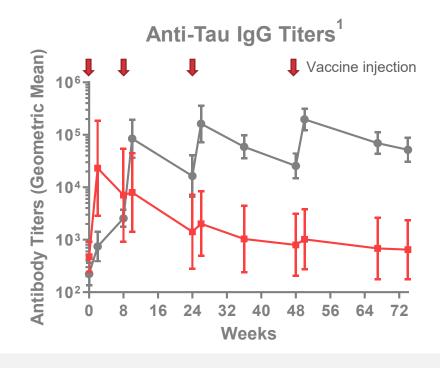


<sup>(1)</sup> Alzheimer's disease; (2) Down syndrome-related Alzheimer's disease; (3) Prevention trial API-ADAD in Colombia; (4) Open label extension study is ongoing; (5) Positron emission tomography; (6) Progressive supranuclear palsy; (7) alpha-synuclein; (8) Parkinson's disease; (9) Multiple system atrophy

# ACI-35.030 selected for further development by partner Janssen

Follows data showing ACI-35.030's superior specificity for pathological Tau vs. JACI-35.054





1

JACI-35.054 is a protein conjugate vaccine utilizing the same pTau<sup>3</sup> epitope as ACI-35.030

4

2

ACI-35.050 and JACI-35.054 were evaluated in parallel in the Phase 1b/2a trial in AD<sup>4</sup> patients

3

ACI-35.030 induced Ab<sup>5</sup> responses in 100% of patients after 1<sup>st</sup> injection compared to 50% with JACI-35.054

ACI-35.030-induced anti-ePHF Abs: longer apparent half-lives, less variability, lower peak-to-trough ratios

(1) ACI-35.030 original sub-cohort 1.2 data; (2) Enriched paired helical filaments; (3) Phosphorylated Tau; (4) Alzheimer's disease; (5) Antibody

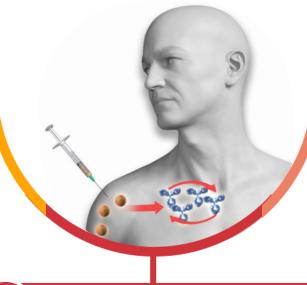
## Vaccines as a new class of treatment for neurodegenerative disease

AC Immune vaccines: Potential for profound social and economic impact



#### **Treatment**

- High efficacy and safety/tolerability
- Convenient, annual dosing



#### **Prevention**



- Vaccination is the best strategy to preserve function and quality of life
- Cost-effective and global application



- Use as maintenance therapy after monoclonal anti-Abeta antibodies
- Convenient, annual dosing





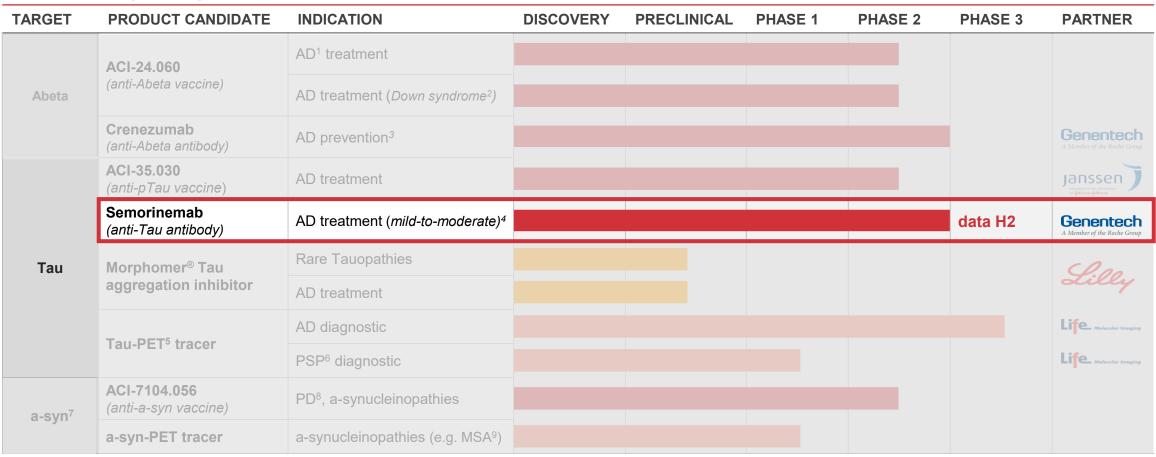


Clinical-stage monoclonal antibodies targeting neurodegenerative diseases

## Semorinemab: Anti-Tau monoclonal antibody being developed for AD<sup>1</sup>

New Phase 2 open-label extension data expected in H2

## **Clinical Stage Programs**



<sup>(1)</sup> Alzheimer's disease; (2) Down syndrome-related Alzheimer's disease; (3) Prevention trial API-ADAD in Colombia; (4) Open label extension study is ongoing; (5) Positron emission tomography; (6) Progressive supranuclear palsy; (7) alpha-synuclein; (8) Parkinson's disease; (9) Multiple system atrophy

# Lauriet study evaluating the mAb<sup>1</sup> semorinemab in mild-to-moderate AD<sup>2</sup>

One co-primary endpoint met: first positive cognitive results for an anti-Tau mAb therapy in AD

- Observed a statistically significant 2.89 point (42.2%) reduction in cognitive decline vs. placebo as measured by ADAS-Cog11<sup>3</sup> at week 49 (p=0.0008)
- ADAS-Cog11 findings were consistent across prespecified subgroups and at week 61<sup>4</sup>
- Results showing semorinemab's significant treatment effect on cognition achieved in a population where limited or no effect of anti-Abeta mAbs is observed
- Semorinemab was well tolerated with an acceptable safety profile and no unanticipated safety signals
  - ADCS-ADL<sup>5</sup> co-primary endpoint and secondary efficacy endpoints (MMSE<sup>6</sup>; CDR-SB<sup>7</sup>) were not met

First evidence of therapeutic impact on cognition for a disease-modifying anti-Tau mAb in mild-to-moderate AD patients<sup>8</sup>

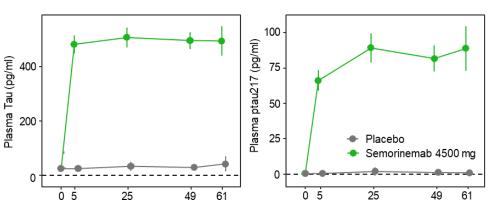
(1) Monoclonal antibody; (2) Alzheimer's disease; (3) Alzheimer's Disease Assessment Scale, Cognitive Subscale, 11-item Version; (4) In the subset of patients for whom the double-blind treatment period was extended to 60 weeks; (5) Alzheimer's Disease Cooperative Study - Activities of Daily Living; (6) Mini-mental state exam; (7) Clinical Dementia Rating-Sum of the Boxes; (8) MMSE of 16-21;

# Key biomarker findings from Lauriet Phase 2 trial of semorinemab in AD1

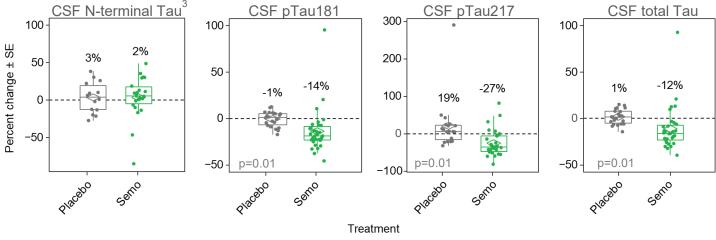
Data provide further support for Tau as a target in AD

Time (weeks)









- Observed rapid rise in plasma Tau levels following treatment with semorinemab, providing evidence of target engagement
- 3

Treatment effect on Tau PET<sup>6</sup> signal was not observed

2 CSF<sup>4</sup> biomarker analyses confirm target engagement and show significant reduction of pTau<sup>5</sup>



Data support the importance of soluble forms of pathological Tau in driving cognitive decline and warrant further analysis

(1) Alzheimer's disease; (2) Week 61 timepoint corresponds to a subset of Cohort 2 patient samples; (3) N-terminal Tau findings potentially linked to antibody-target binding; (4) Cerebrospinal fluid; (5) Phosphorylated Tau; (6) Positron emission tomography

Time (weeks)



Diagnostics to enable precision medicine

# Successfully treating neurodegeneration requires precision medicine

From a mono- to a multi-target combination approach informed by cutting edge diagnostics

## **Imaging: AC Immune's Unique Capabilities**



**Positron Emission Tomography** 

- Tau
- a-syn<sup>1</sup>
- TDP-43<sup>2</sup>

#### **Biofluids**



- Blood / Serum
- Cerebrospinal Fluid

- a-syn
  - TDP-43

## **Future Technologies**



In collaboration:

Digital Health Technologies & Wearable Devices

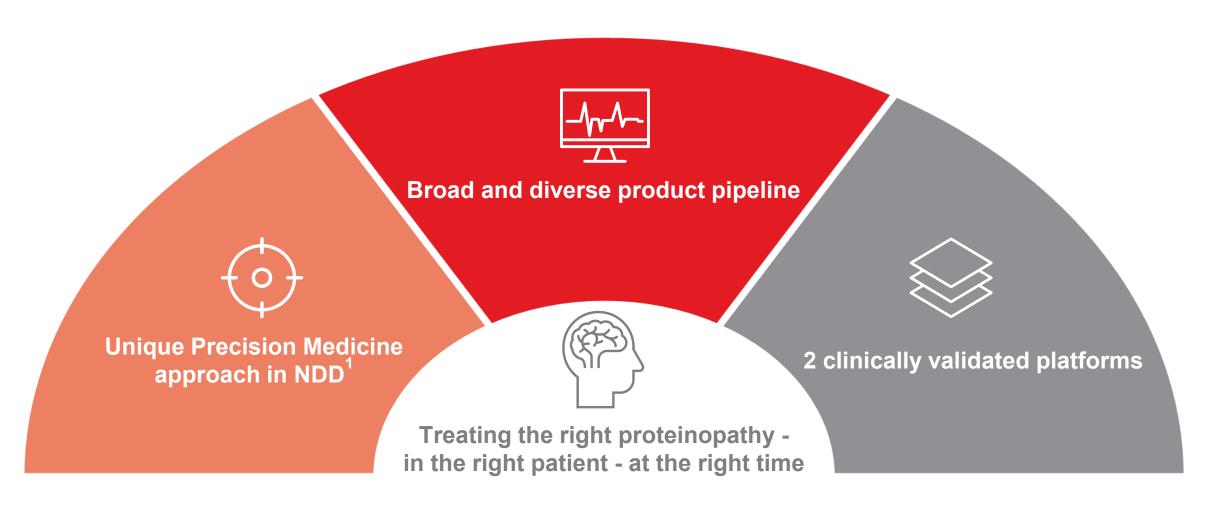
Treating the right proteinopathies, in the right patient, at the right time

- Non-invasive diagnostics are critical for accurate patient selection and treatment to improve clinical outcomes
- Early and comprehensive diagnosis may eventually lead to disease prevention and combination therapy

(1) alpha-synuclein; (2) TAR DNA-binding protein 43;

# Today's strengths predict future success

Precision Medicine for mono- and combination therapy





NASDAQ: ACIU | Investor Presentation, June 2023

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## AC Immune: Pioneering science and precision medicine



Shifting the treatment paradigm for neurodegenerative disease towards precision medicine and disease prevention

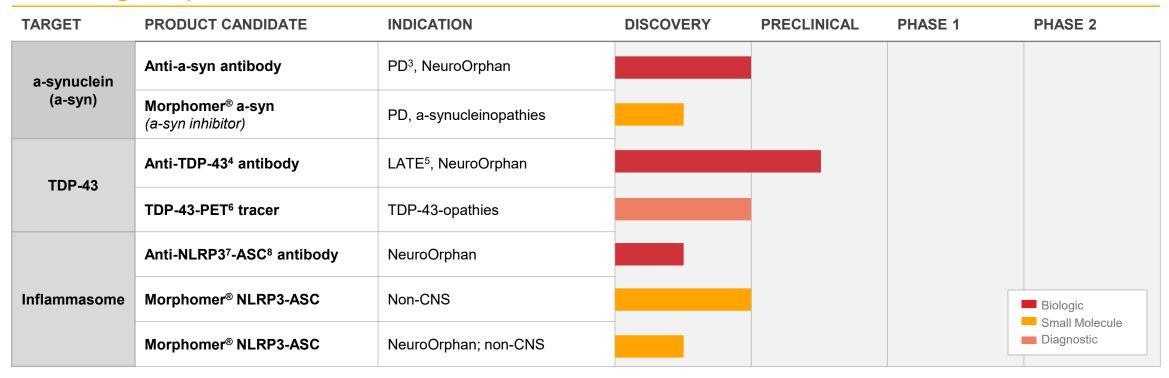


Supplementary information

## Broad and robust pipeline in neurodegenerative diseases

## Diversification into non-AD<sup>1</sup> and non-CNS<sup>2</sup> diseases

### **Novel Targets Pipeline**



<sup>(1)</sup> Alzheimer's disease; (2) Central nervous system; (3) Parkinson's disease; (4) TAR DNA-binding protein 43; (5) Limbic-predominant age-related TDP-43 encephalopathy; (6) Positron emission tomography; (7) (NOD)-like receptor protein 3; (8) Apoptosis-associated speck-like protein containing a CARD, also PYCARD

