



RARE PATIENTS **RARE** SOLUTIONS

Corporate Presentation

July 2024



Ella
Living with ENPP1
Deficiency

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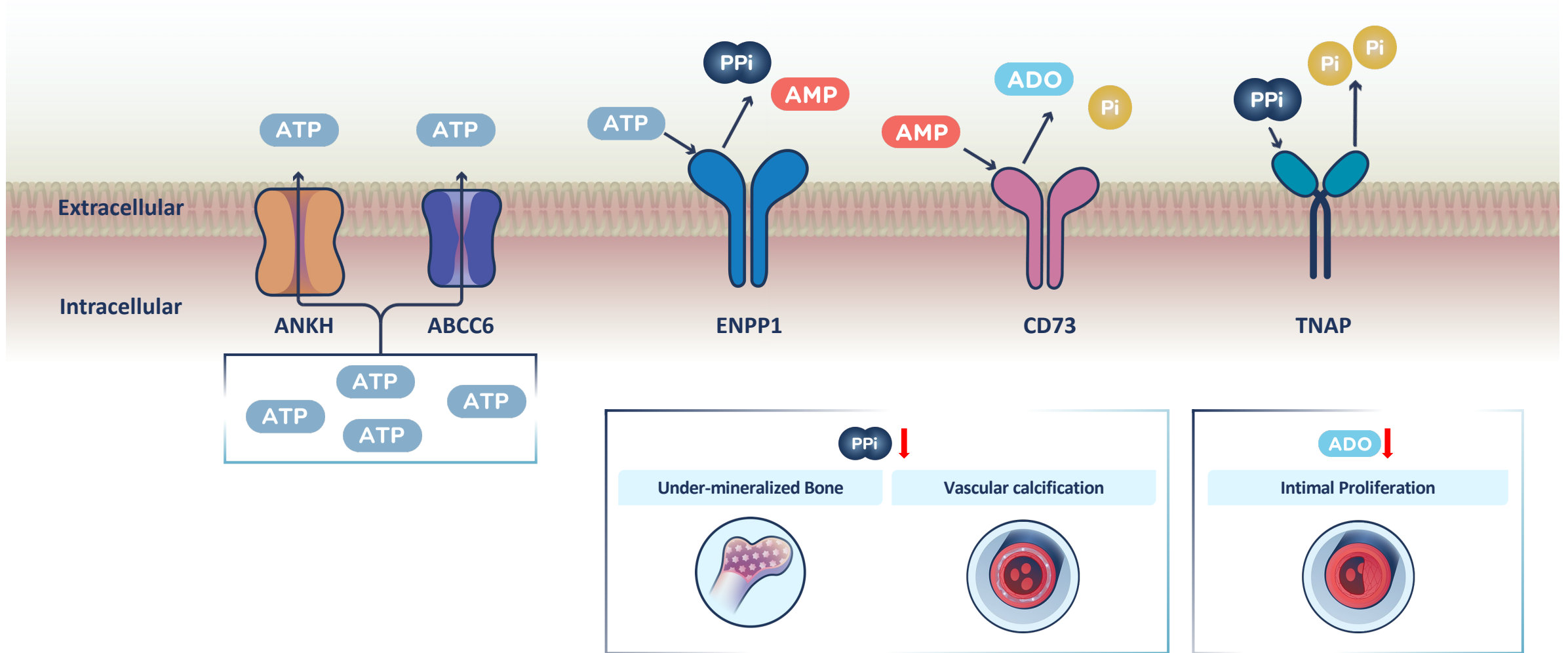
The words “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “potential,” “predict,” “project,” “should,” “target,” “will,” “would” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in these forward-looking statements, and you should not place undue reliance on these forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in these forward-looking statements. For a discussion of risks and uncertainties, and other important factors, any of which could cause our actual results to differ from those contained in the forward-looking statements, see the “Risk Factors” section in our most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission, as well as discussions of potential risks, uncertainties and other important factors, in the Company’s most recent filings with the Securities and Exchange Commission.

In addition, the forward-looking statements included in this presentation represent our views as of the date of this presentation. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements in the future, we specifically disclaim any obligation to do so. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date of this presentation.

Inozyme is at the forefront of developing novel therapies for rare diseases that affect bone health and blood vessel function

-  ENPP1 Deficiency, ABCC6 Deficiency and calciphylaxis are serious diseases affecting bone health and blood vessel function linked to dysregulation of the PPI-Adenosine Pathway with no approved therapies
-  Lead product candidate INZ-701 demonstrated a rapid, significant, and sustained increase in PPI levels, preliminary evidence of efficacy, and a favorable safety profile across multiple clinical trials
-  Currently in pivotal trial for ENPP1 Deficiency; Completed Phase 2 trial for ABCC6 Deficiency and treatment period in Phase 1b trial in calciphylaxis program
-  Experienced team with a track record of success in rare disease
-  In a position of financial strength, with several expected upcoming milestones and a pipeline designed for long-term value creation
 - \$166.2M expected to fund operations into Q4 2025 as of 3/31/24
 - 61.85M common shares outstanding as of 5/2/24

The PPI-Adenosine Pathway regulates bone health and blood vessel function – ENPP1 plays a central role



Diseases associated with the PPI-Adenosine Pathway present significant opportunities across major markets

North America:
~20,900 Pts

ENPP1	2,800
ABCC6	7,600
Calciophylaxis	10,500

Japan:
~10,900 Pts

ENPP1	900
ABCC6	3,500
Calciophylaxis	6,500

EU:
~18,800 Pts

ENPP1	4,100
ABCC6	10,600
Calciophylaxis	4,100

Brazil:
~7,000 Pts

ENPP1	1,600
ABCC6	6,000
Calciophylaxis	2,700

Major Markets
~57,600 pts

ENPP1	9,400
ABCC6	27,700
Calciophylaxis	23,800

Note: Patients with monoallelic *ENPP1* mutations and OPLL patients with pathogenic *ENPP1* variants represent additional market opportunities

Sources: Company estimates. Ferreira et al. Genet Med, 2021. Ferreira et al. Orphanet Journal of Rare Diseases, 2022. Nigwekar SU, et al. J Gen Intern Med. 2014; Nigwekar SU, et al. J Am Soc Nephrol. 2016. Chinnadurai, R., Huckle, A., Hegarty, J. et al. Calciophylaxis in end-stage kidney disease: outcome data from the United Kingdom Calciophylaxis Study. J Nephrol 34, 1537–1545 (2021). <https://doi.org/10.1007/s40620-020-00908-9> USRDS Annual Data Report 2021. <https://adr.usrds.org/2021/end-stage-renal-disease/1-incidence-prevalence-patient-characteristics-and-treatment-modalities>. Supplemented ERA-EDTA Registry data evaluated the frequency of dialysis, kidney transplantation, and comprehensive conservative management for patients with kidney failure in Europe - Kidney International (kidney-international.org) Prevalence of calciophylaxis estimated to be 2% of hemodialysis patients; North America (excl Mexico); EU = EU5 + UK.



ENPP1 Deficiency



ENPP1 Deficiency is a lifelong, multisystem, rare genetic disease with high mortality and morbidity

GACI/IIAC
0-1 Years (~1-2%)*



50% mortality within 6 months of birth



Severe cardiovascular complications

ARHR2 (Rickets)
1 to <13 years (~25-30%)*



Impaired growth Orthopedic surgery



Skeletal defects: Rickets



Hearing loss

ARHR2 (Osteomalacia)
13+ Years (~65-70%)*

Bone & joint pathology



Skeletal defects: Osteomalacia



Joint, tendon, and ligament complications



Hearing loss

Biallelic Genetic Prevalence¹:

1:64,000

✓ PATIENTS IN US/CANADA ~ 2,800

✓ PATIENTS IN EUROPE ~ 4,100

✓ PATIENTS IN JAPAN ~ 900

✓ PATIENTS IN BRAZIL ~ 1,600

Note: Estimates do not include symptomatic patients with monoallelic mutations

*Estimated percent of total prevalence., 1. Ferreira et al. Orphanet Journal of Rare Diseases, 2022. GACI: Generalized Arterial Calcification of Infancy, IIAC : Idiopathic Infantile Arterial Calcification, ARHR2: Autosomal Recessive Hypophosphatemic Rickets Type 2

Completed Phase 1/2 trial of INZ-701 in adults with ENPP1 Deficiency successfully met all study objectives

Safety

- ✓ **Favorable safety profile** was maintained
- ✓ Low/moderate, sometimes transient, ADA titers

PK/PD

- ✓ **PK data** from cohort 4 support **once-weekly dosing**
- ✓ **PPI remained elevated** with long-term treatment

Clinical

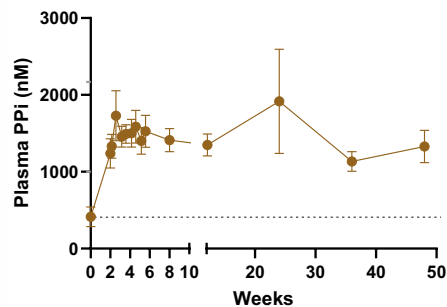
- ✓ Favorable response on **clinical outcomes** (PROs and 6MWT) was **maintained**
- ✓ Bone biomarker response consistent with restoring proper bone mineralization

Significant increase in PPI levels were associated with improvement in phosphate and FGF-23 and supports MOA

Pooled Cohorts 1-3: Baseline vs mean Week 2-48 PPI, FGF-23, and Pi levels (\pm SEM)

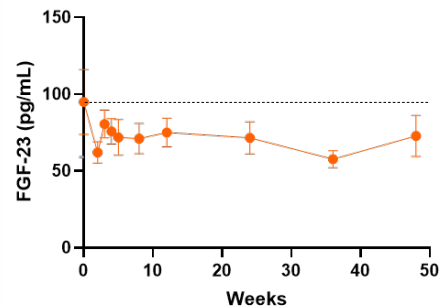
Plasma PPI

Ref range :
1002-2169nM



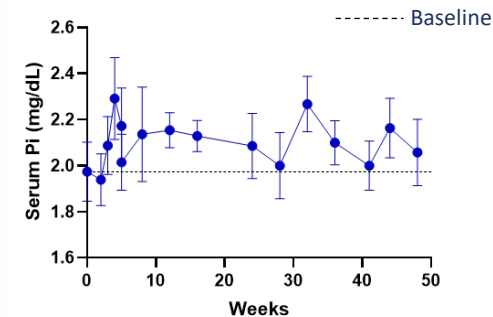
Serum FGF-23

Ref range :
<59pg/mL



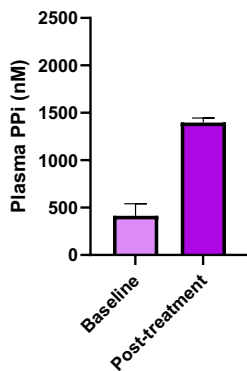
Serum Pi

Ref range :
2.5-4.5mg/dL

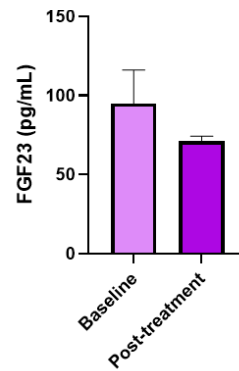


Pooled Cohorts 1-3: Mean PPI, FGF-23 and Pi levels (\pm SEM)

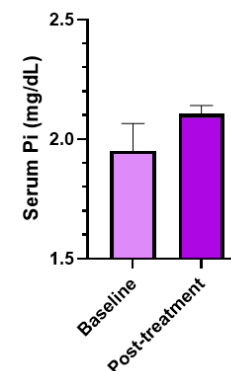
Plasma PPI



Serum FGF-23



Serum Pi



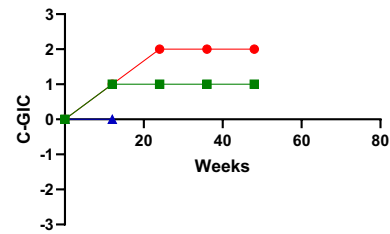
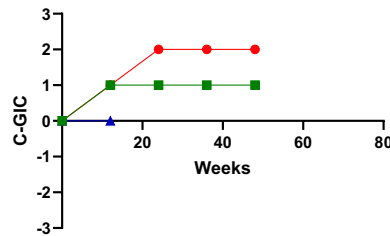
Note: Serum Pi increases observed in absence of phosphate and active vitamin D supplementation

Global Impression of Change Scale: Concordant improvement in C-GIC and P-GIC in all three dose cohorts

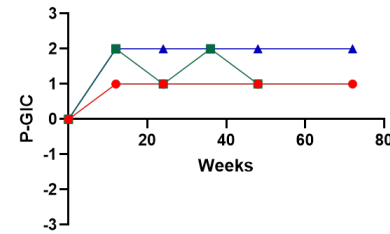
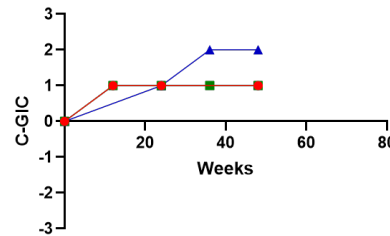
Clinician's Global Impression

Patient's Global Impression

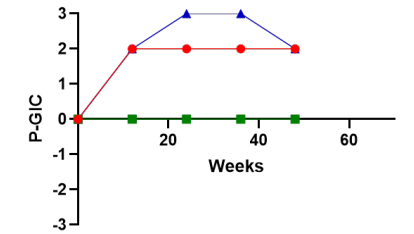
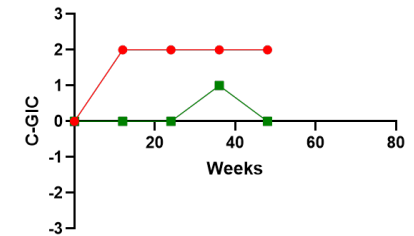
Cohort 1 (0.2mg/kg) (n=3)



Cohort 2 (0.6mg/kg) (n=3)



Cohort 3 (1.8mg/kg) (n=3)*



-3

-2

-1

0

1

2

3

Very much worse

Much worse

Minimally worse

No Change

Minimally improved

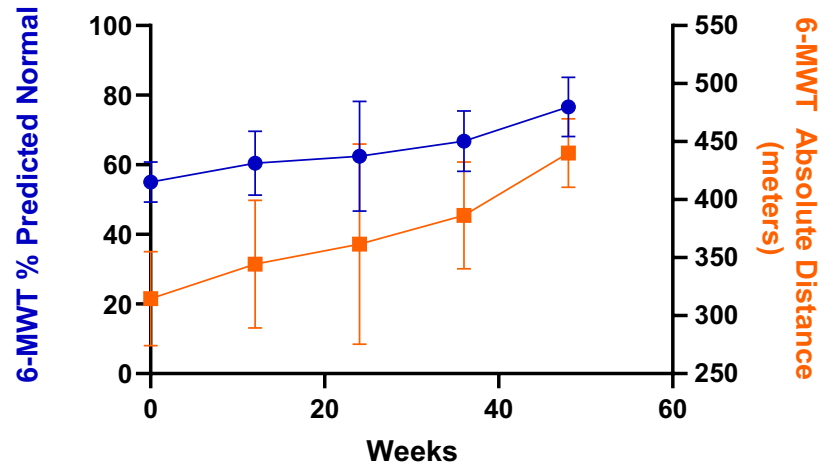
Much improved

Very Much improved

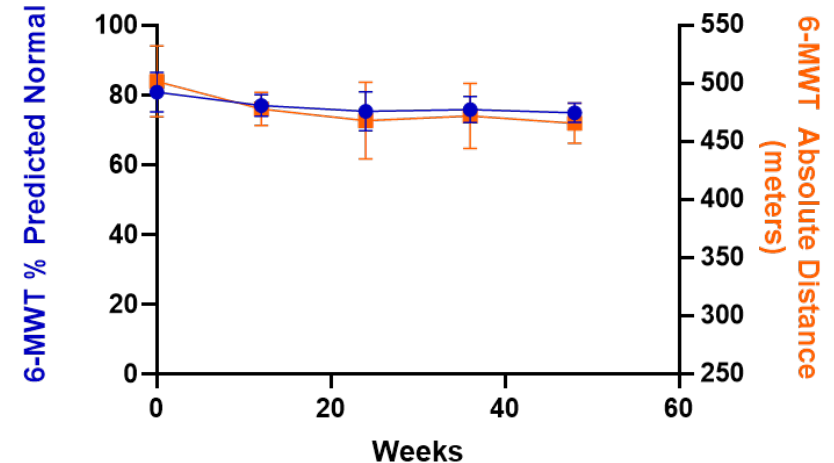
* n=2 for C-GIC

INZ-701 showed trend for improvement in 6-minute walk test (6-MWT)

Patients with <70% predicted of healthy 6-MWT at baseline (n=5)



Patients with >70% predicted of healthy 6-MWT at baseline (n=4)



✓ Greater improvement observed in patients with poor baseline 6-MWT

✓ Stable 6-MWT scores observed in patients with higher baseline values

ENPP1 Deficiency: Planned Path to Global Approval

Pediatric Trial in Pediatric ENPP1 Deficiency Ongoing

ENERGY-3: Pivotal trial in pediatric patients with ENPP1 Deficiency (ARHR2)

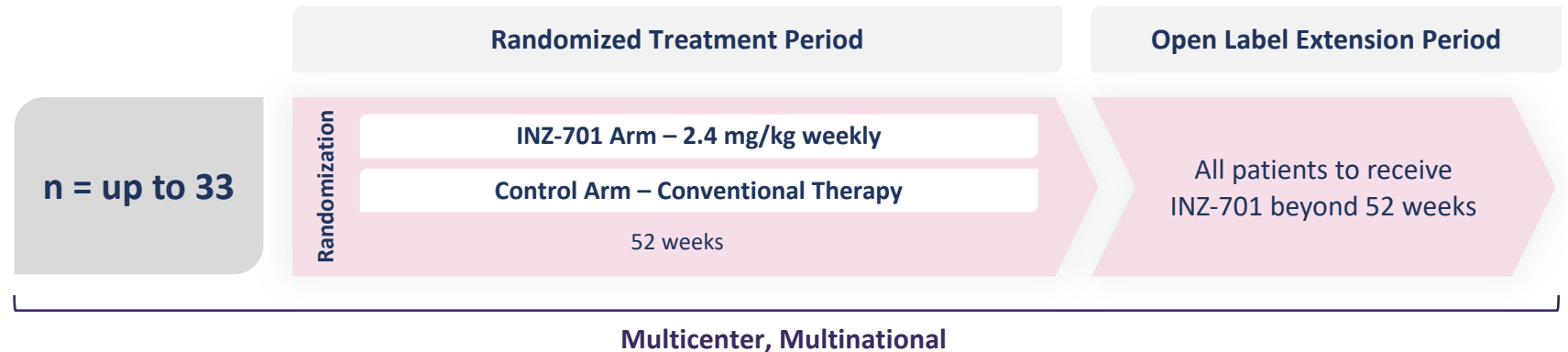
Patient recruitment underway – Topline data expected mid-2025



Population: Pediatric

- ✓ Confirmed genetic diagnosis
- ✓ Radiographic evidence of skeletal abnormalities
- ✓ ≥1 year and <13 years
- ✓ Low plasma PPI

Design: Randomized (2:1), Open Label



Endpoints

US

- **Primary:** Change in plasma PPI from baseline over time
- **Secondary:** Trends in RGI-C score, RSS, Growth Z-score; PK

EU

- **Co-Primary:**
 - Change in plasma PPI from baseline over time
 - RGI-C score (with $p < 0.2$)
- **Secondary:** RSS, Growth Z-score; PK

Planned path to global approval of INZ-701 in ENPP1 Deficiency

Endpoints



ENERGY-1: Infant (0-12 mos.)
Phase 1b
Single arm (n=8)

Safety and tolerability as primary; PPI and survival as secondary



ENERGY-2: Infant (0-12 mos.)
Pivotal
Single arm per agreed PIP**
(n=12)

PPI + survival as co-primary



ENERGY-3: Pediatric
(≥1-<13 yrs.)
Pivotal
Randomized – 2:1 (n=33)

PPI as sole primary (US) and co-primary with RGI-C (EU)*



ENERGY-4: Adolescent and Adult (13+)
Pivotal
Randomized – 2:1 (n=30)***

PPI as sole primary (US) and co-primary with BMC/BMD expected (EU)*

Basis for Planned Marketing Applications



1st BLA/MAA

- Adult Phase 1/2 full data
- ENERGY-3 full data
- ENERGY-1 available data
- ENERGY-2 available data
 - Natural history control group; patients matched on covariates associated with mortality



Additional filings

- ENERGY-4 full data (Supplemental BLA/MAA)
- Japan, Brazil, Middle East

RGI-C: Radiographic Global Impression of Change, BMC/BMD: Bone mineral content/density, BLA: Biologics license application, MAA: Marketing authorisation application

*Supported by trends in appropriate secondary endpoints

**Plan to conduct this trial ex-U.S.. Discussions are ongoing with FDA regarding design of this trial in the U.S.

***Subject to regulatory discussions and appropriate financial resources



ABCC6 Deficiency



Sienna
Living with ABCC6
Deficiency

ABCC6 Deficiency is a multisystem, rare genetic disease: High morbidity and a continuum of effects across age groups

GACI-2
0-1 Years



**~10% mortality
within 12 months of birth ¹**



Severe cardiovascular complications
and pulmonary hypertension

Pediatric
1 to <18 years



**Multisystem vasculopathy
and strokes ²**



Progressive cardiovascular
calcification/stenosis of major
arteries



Cerebrovascular calcification -
including stroke



Initial retinal calcification

PXE
18+ Years



**Blindness, cardiovascular disease and
mobility impairment ³⁻⁷**



Progressive arterial calcification



Increased incidence of stroke and
dementia



Retinal calcification – Angioid
streaks, atrophy



Progressive calcification and
fragmentation of elastic fibers

Genetic Prevalence: 1:25,000 - 1:50,000 ⁸⁻⁹

Completed Phase 1/2 trial of INZ-701 in adults with ABCC6 Deficiency successfully met all study objectives

Safety

- ✓ INZ-701 demonstrated a **favorable safety profile**
- ✓ No serious or severe adverse events
- ✓ Low/moderate, sometimes transient, ADA titers

PK/PD

- ✓ **Rapid and sustained increase in PPI** observed in highest dose cohort (1.8 mg/kg)

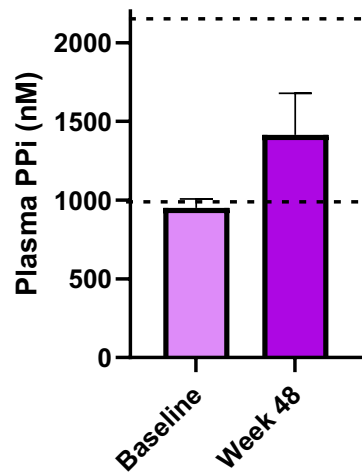
Clinical

- ✓ **Positive changes** in multiple affected organ systems (cerebrovasculature and choroidal layer of eye) support **improvements in vascular health**
- ✓ Improvement in visual function (VFQ-25) and multiple PROs observed

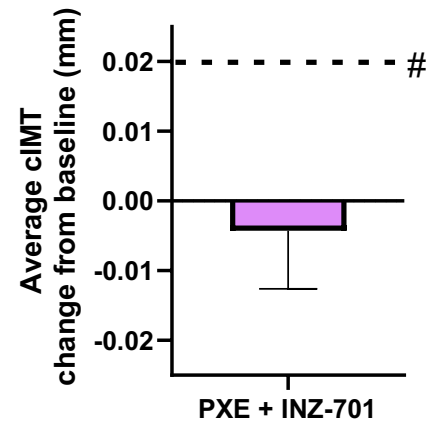
INZ-701 showed benefit across multiple domains relevant for future pivotal trial

Combined cohort 1-3 data comparing baseline to week 48

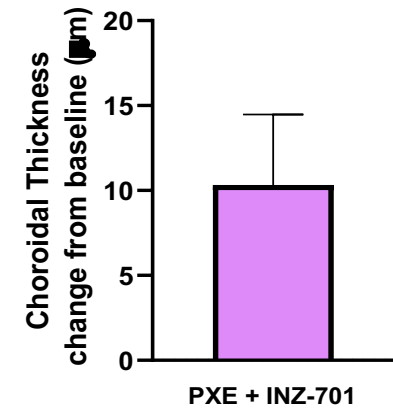
Pi increased



Carotid artery intima-media thickness decreased (cIMT)



Choroidal thickness increased



----- Normal range

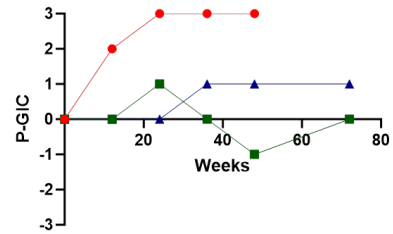
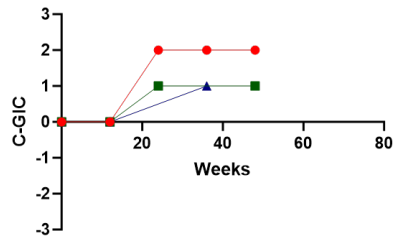
----- Mean annual cIMT change in TEMP study1

Global Impression of Change Scale: Concordant improvement in C-GIC and P-GIC in all three dose cohorts

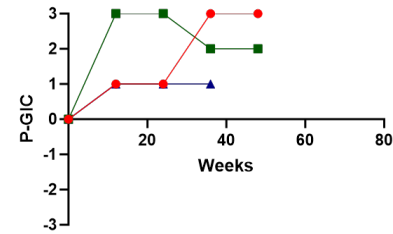
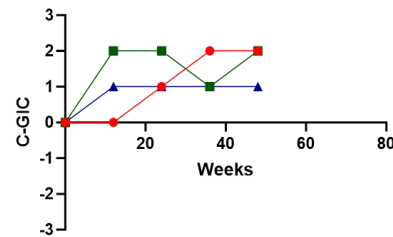
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Patient's Global Impression

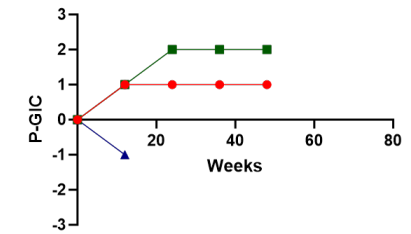
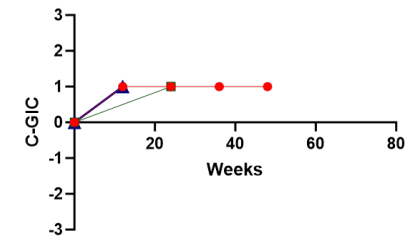
Cohort 1 (0.2mg/kg) (n=3)



Cohort 2 (0.6mg/kg) (n=3)



Cohort 3 (1.8mg/kg) (n=3)



-3

-2

-1

0

1

2

3

Very much worse

Much worse

Minimally worse

No Change

Minimally improved

Much improved

Very Much improved

ABCC6 Deficiency: Planned Path to Global Approval

Focused on pediatric population with ABCC6 Deficiency

Unmet Need

- ✓ Retrospective natural history study (early-onset) and interventional study (adults) identified **risk of stroke** and **retinal disease** as consistent presentation in ABCC6 Deficiency

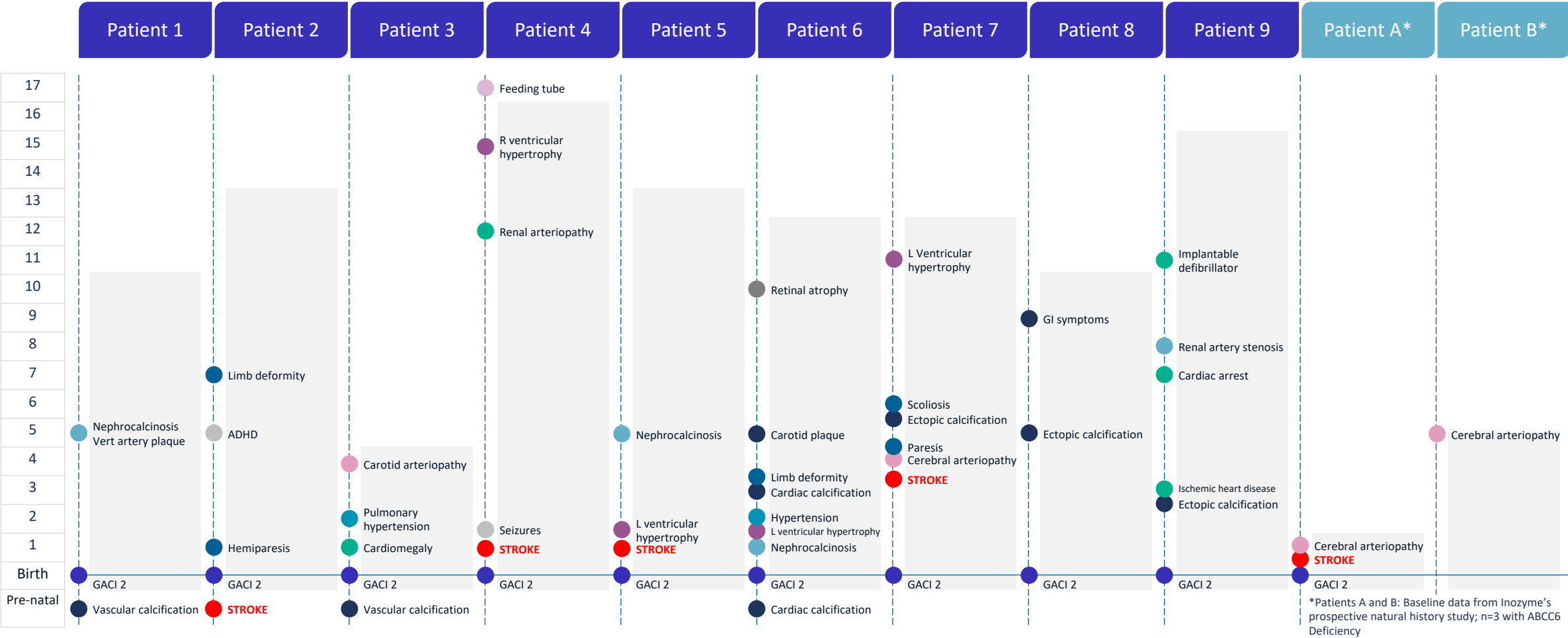
Market

- ✓ Market research identified **substantial pediatric population** that represents the most important unmet need in ABCC6 Deficiency

Regulatory

- ✓ Pivotal trial design planning in progress – potential for **approval** with primary and secondary endpoints selected based on serious clinical needs and disease pathology

Retrospective Natural History Study: ABCC6 Deficiency patients had a heavy disease burden early in life



Planned roadmap for clinical development of INZ-701 in ABCC6 Deficiency



ENERGY-1: Infant (0-12 mos.)
Phase 1b
Single arm

Ongoing Study

- **Safety and tolerability** as primary
- **PPi and survival** as secondary



Pediatric (≥1-<18 yrs.)*
Pivotal
Randomized, controlled

Future Studies

- **Primary and secondary endpoints selected based on serious clinical needs and disease pathology** (e.g., death, stroke, myocardial infarction, cardiac hospitalization, retinal disease progression, arterial calcification score, cIMT changes)



Adult – PXE (18+)*
Pivotal
Randomized, controlled

- **Composite endpoint comprised of retinal measurements, peripheral arterial disease outcomes and PPi**



Adult – PXE (18+)
Phase 1/2
Single arm – MAD

Completed Study

- **Generally safe and well tolerated**
- **Consistently elevated PPi at highest dose**
- **Signals of clinical activity on vascular and ophthalmic for retinal endpoints**

Basis for Planned Marketing Applications



1st BLA/MAA

- Adult Phase 1/2 full data
- ENERGY-1 available data
- Pediatric Pivotal trial data



Additional filings

- Adult (18+) study (Supplemental BLA/MAA)
- Japan, Brazil, Middle East

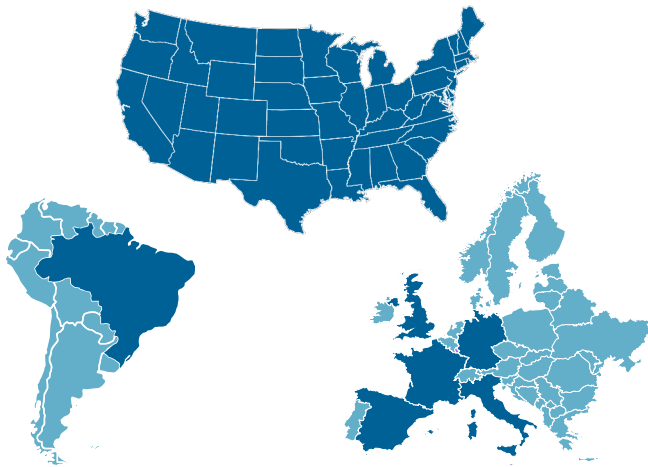
*Subject to regulatory discussions and appropriate

financial resources

Building a Rare Disease Franchise

Ongoing efforts to increase disease awareness, educate patient and medical communities, and improve access to genetic testing

Growing Our Global Footprint



Currently evaluating Inozyme presence in Japan and Middle East

Newborn Screening

US – Rady Children’s Hospital Network

UK – Genomics England

Efforts ongoing to add to other panels across the globe

Expanding HCP Audience

- ✓ **Infant and Pediatric ENPP1/ABCC6**
 - Fetal and pediatric cardiology
 - Neonatology
 - Pediatric endocrinology
 - Maternal-fetal medicine
 - Genetics
- ✓ **Adult ENPP1/ABCC6**
 - Endocrinology
 - Nephrology
 - Genetics
 - Bone specialists

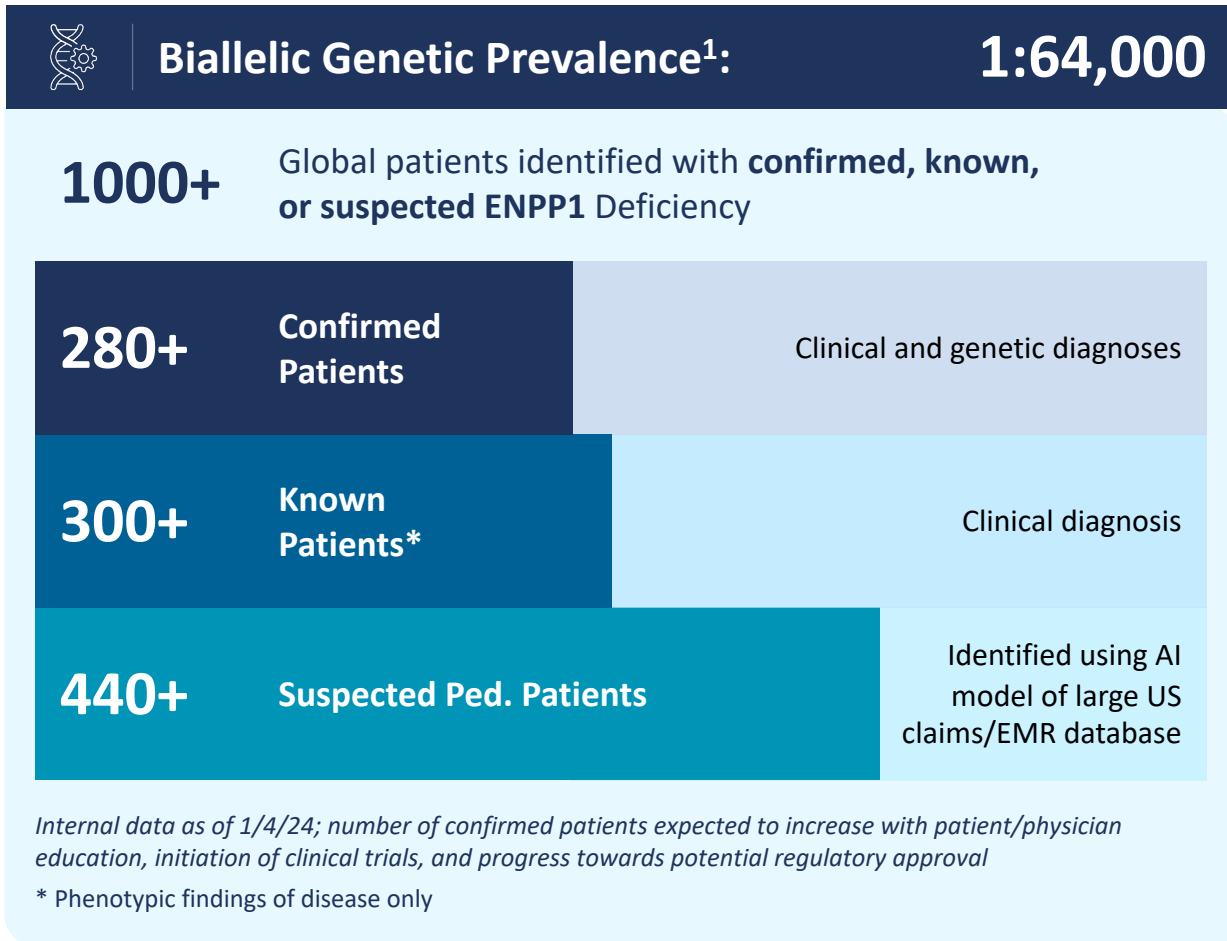
Increasing Congress Attendance

 Cardiovascular Management of the Neonate	
 PEDIATRIC ENDOCRINE SOCIETY	 American Society of Human Genetics
 The American Society for Bone and Mineral Research	
 European Calcified Tissue Society	

Partnering to Remove Barriers to Diagnosis

Identifying ENPP1 patients to support market potential – strong progress to date and expanding efforts into patients with monoallelic mutations



Identified ~82 confirmed symptomatic monoallelic ENPP1 patients

- Identified ~82 confirmed symptomatic monoallelic ENPP1 patients



Majority of patients identified through Skeletal Disorders or Hypophosphatemia gene panels

- Suggests monoallelic patients can have clinical symptomatology similar to those with biallelic ENPP1 Deficiency



Conducting observational study to characterize clinical features of adults with monoallelic ENPP1 mutations

~1,300 likely U.S. pediatric ABCC6 Deficiency patients identified, representing ~70% of estimated genetic prevalence

Pediatric ABCC6 Deficiency: U.S. Patient estimates

Ischemic Stroke 940 patients

- Ischemic stroke between ages 1-18
- Genetic panel ordered between ages 1 and <18 **OR** mild neurological symptoms occurred prior to stroke
- PXE or a phosphorous disorder diagnosis code in all history
- Exclusion of differential diagnoses

Angioid Streaks 264 patients

- Angioid streaks between ages 1 and <18
- Exclusion of differential diagnoses and eye injuries

Retinal Imaging/OCT 60 patients

- Optical coherence tomography (OCT) between ages 1 and <18
- Genetic panel ordered **AND** mild neurological symptoms occurred between ages 1 and <18
- PXE or a phosphorous disorder diagnosis code in all history
- Exclusion of differential diagnoses

Cardiovascular Anomaly 24 patients

- Cardiovascular anomaly **AND** arterial calcification between ages 1-and <18
- PXE or a phosphorous disorder diagnosis code in all history
- Exclusion of differential diagnoses

Identified 1,288 likely U.S. pediatric patients with ABCC6 Deficiency

Calciphylaxis

Calciphylaxis: A severe complication of ESKD with high mortality and morbidity

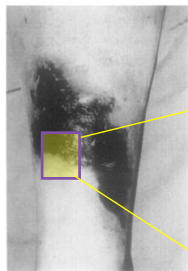
Calciphylaxis Incidence: 3.5 : 1,000 ESKD Patients⁷

Major Markets Estimate: 5,000 patients/year

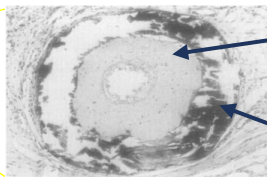


Primarily affects end stage kidney disease (ESKD) patients²

Vascular calcification-mediated disease



(Hafner et al, JAAD, 1995)



Uremic small artery

Intimal proliferation

Medial calcification

(Hafner et al, JAAD, 1995)

Microvascular occlusion of skin arterioles caused by medial calcification, intimal proliferation, and thrombosis; Low PPI

Significant morbidity and mortality

Initial skin lesions typically present as extremely painful plaques and nodules, and progress to necrotic ulcers



Ghosh T, et al. Int J Dermatol. 2017

2 months



Ghosh T, et al. Int J Dermatol. 2017

✔ >70% require hospitalization for severe ulcerations⁴

✔ ~50% of patients are bedridden or wheelchair-bound⁴

~50% mortality

1 year after diagnosis⁷

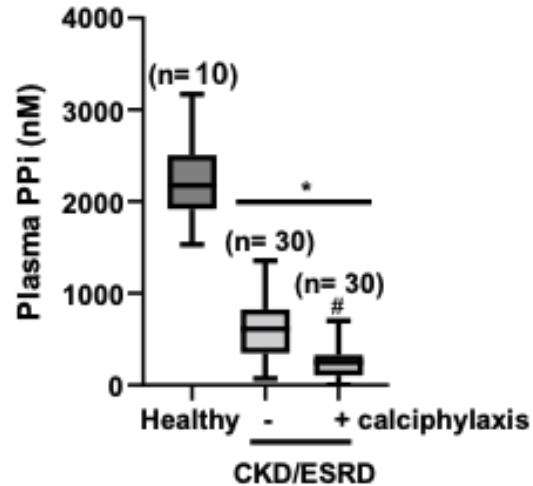
- Median survival time: 2.6 months⁴
- Sepsis most common cause of death⁴⁻⁶

No approved therapy

Calciphylaxis is associated with PPI deficiency

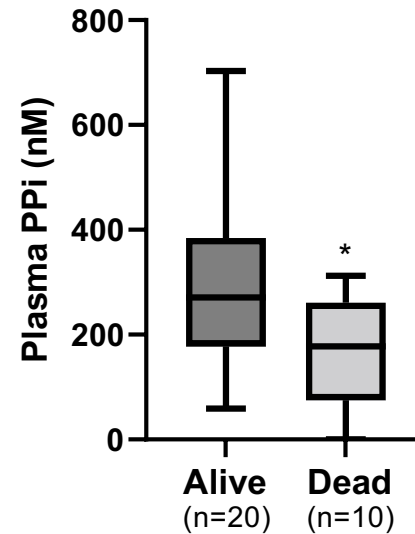
Arteriolar calcification largely develops due to imbalance between calcification inhibitors and promoters¹⁻³

PPI levels lower in calciphylaxis



* p < 0.0001 vs healthy
p = 0.0002 vs non-calciphylaxis

PPI levels predicted 6-month mortality among patients with calciphylaxis



* p = 0.045

- ✓ ESKD patients had significantly lower PPI levels compared to healthy subjects⁴
- ✓ Calciphylaxis patients had significantly lower plasma PPI levels when compared with non-calciphylaxis ESKD patients⁴
- ✓ Published data showed correlation between PPI levels and severity of calcification

Data presented as median ± interquartile range

SEAPORT-1: Phase 1 trial in patients with end-stage kidney disease (ESKD) receiving hemodialysis

Interim data expected in Q4 2024



Study Population: Adults

Eligibility Criteria:

- ✓ ≥18 to <70 years
- ✓ ESKD and receiving hemodialysis
- ✓ Undergoing 3 treatments of HD per week
- ✓ Low plasma PPI

Design: Single arm, Open Label

n = up to 10

INZ-701 – 1.8 mg/kg Weekly
coinciding with dialysis days

30 days treatment, weekly dosing

Up to 3 US sites







Primary Goals

- ✓ Change from baseline in **plasma PPI** concentration
- ✓ **Safety**

Secondary Goals

- ✓ **Pharmacokinetic (PK)** and **pharmacodynamic (PD)** parameters

Anticipated milestones provide robust news flow

Milestone 	2024 	2025 
ENPP1 Deficiency		
• Topline Data – Adult Phase 1/2 Trial 		
• Initiate – ENERGY-2 Pivotal Trial in Infants – Ex. U.S.	2H 24	
• Interim Data – ENERGY-1 Phase 1 Infant Trial	2H 24	
• Topline Data – ENERGY-3 Pivotal Pediatric Trial		Mid-Year
ABCC6 Deficiency		
• Topline Data – Adult Phase 1/2 Trial 		
• Initiate Pivotal Trial*		Q1 25
Calciphylaxis		
• Initiate SEAPORT-1 - Phase 1 Trial** 		
• Interim Data - SEAPORT-1 Phase 1 Trial	Q4 24	

*Pending regulatory discussions and appropriate financial resources, **Phase 1 trial in patients with end-stage kidney disease (ESKD) receiving hemodialysis

Inozyme is at the forefront of developing novel therapies for rare diseases that affect bone health and blood vessel function



ENPP1 Deficiency, ABCC6 Deficiency and calciphylaxis are serious diseases affecting bone health and blood vessel function linked to dysregulation of the PPI-Adenosine Pathway with no approved therapies



Lead product candidate INZ-701 demonstrated a rapid, significant, and sustained increase in PPI levels, preliminary evidence of efficacy, and a favorable safety profile across multiple clinical trials



Currently in pivotal trial for ENPP1 Deficiency; Completed Phase 2 trial for ABCC6 Deficiency and treatment period in Phase 1b trial in calciphylaxis program



Experienced team with a track record of success in rare disease



In a position of financial strength, with several expected upcoming milestones and a pipeline designed for long-term value creation

- \$166.2M expected to fund operations into Q4 2025 as of 3/31/24
- 61.85M common shares outstanding as of 5/2/24



Thank you



Ella
Living with ENPP1
Deficiency