REVELATION BIOSCIENCES

Developing innovative therapeutics to address unmet needs

Corporate Presentation / January 2024

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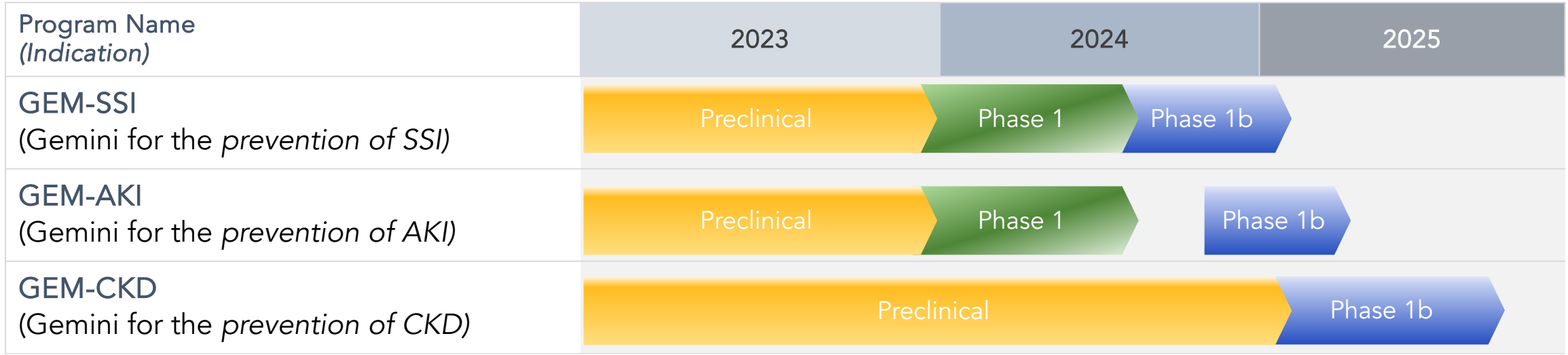
Forward-Looking Statements

This presentation contains forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts. These forward-looking statements are generally identified by the words "anticipate", "believe", "expect", "estimate", "plan", "outlook", and "project" and other similar expressions. We caution investors that forward-looking statements are based on management's expectations and are only predictions or statements of current expectations and involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from those anticipated by the forward-looking statements. Revelation cautions investors not to place undue reliance on any such forward-looking statements, which speak only as of the date they were made. The following factors, among others, could cause actual results to differ materially from those described in these forward-looking statements: the ability of Revelation to meet its financial and strategic goals, due to, among other things, competition; the ability of Revelation to grow and manage growth profitability and retain its key employees; the possibility that the Revelation may be adversely affected by other economic, business, and/or competitive factors; risks relating to the successful development of Revelation's product candidates; the risk that our preclinical studies will not demonstrate sufficient positive data to support commencement of clinical trials; the risk that we may not fully enroll our clinical studies or enrollment will take longer than expected; risks relating to the occurrence of adverse safety events and/or unexpected concerns that may arise from data or analysis from our clinical studies; changes in applicable laws or regulations; expected initiation of the clinical studies, the timing of clinical data; the outcome of the clinical data, including whether the results of such study is positive or whether it can be replicated; the outcome of data collected, including whether the results of such data and/or correlation can be replicated; the timing, costs, conduct and outcome of our other clinical studies; the anticipated treatment of future clinical data by the FDA, the EMA or other regulatory authorities, including whether such data will be sufficient for approval; the success of future development activities for Gemini or any other product candidates; potential indications for which product candidates may be developed; the ability of Revelation to maintain the listing of its securities on NASDAQ; the expected duration over which Revelation's balances will fund its operations; the ability of Revelation to obtain further financing and other risks and uncertainties described herein, as well as those risks and uncertainties discussed from time to time in other reports and other public filings with the SEC by Revelation.

Therapeutic Development Pipeline

- Revelation has a pipeline of potential high-value products based on Gemini
- Gemini is Revelation's proprietary formulation of phosphorylated hexaacyl disaccharide (PHAD®)
- Administration of Gemini Preconditions the immune system to better respond to subsequent stress



*Preclinical Tox and Phase 1 data will be used to support both GEM-HAI and GEM-AKI programs

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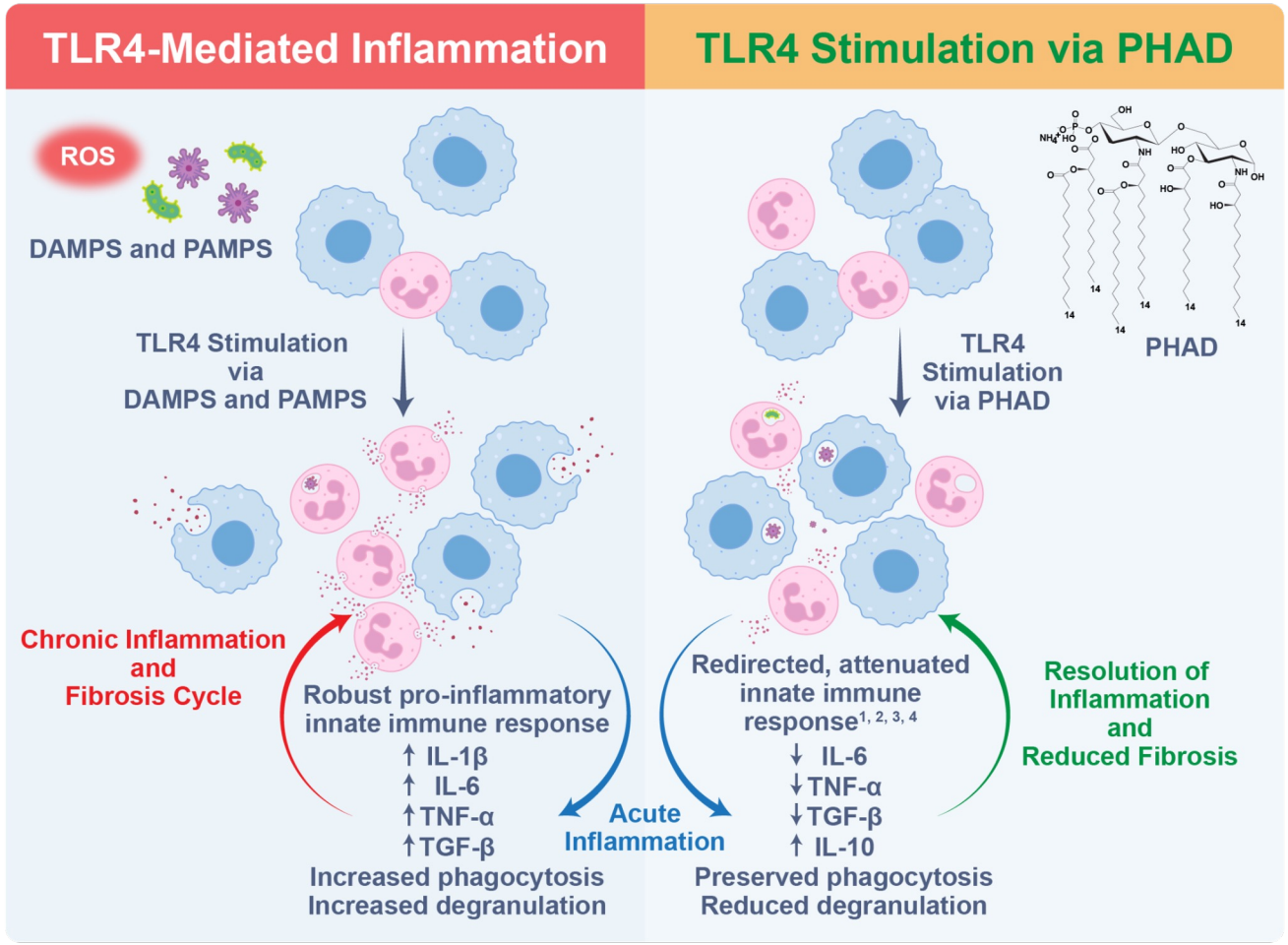
PHAD is a Well-Defined TLR4 Agonist with Multiple Potential Applications



Gemini administration preconditions the innate immune system to rapidly respond to a subsequent stress (infection, trauma, etc.) via TLR4 stimulation. This phenomenon of trained immunity with Gemini could potentially:

- Prevent and treat hospital acquired infection
  - Colorectal surgery
  - Burn wound related infection
  - MRSA
  - Sepsis
- Prevent acute kidney injury
- Prevent and treat other inflammatory conditions such as CKD, myocarditis, stroke, etc.

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1. Zwirner, N. and Ziblat, A. 2017 doi: 10.3389/fimmu.2017.00025
2. Ismaeli, J. et. al. 2022 doi: 10.4049/jimmunol.168.2.926
3. Hernandez, A. et. al. 2019 DOI: 10.1097/CCM.0000000000003967
4. Revelation Data

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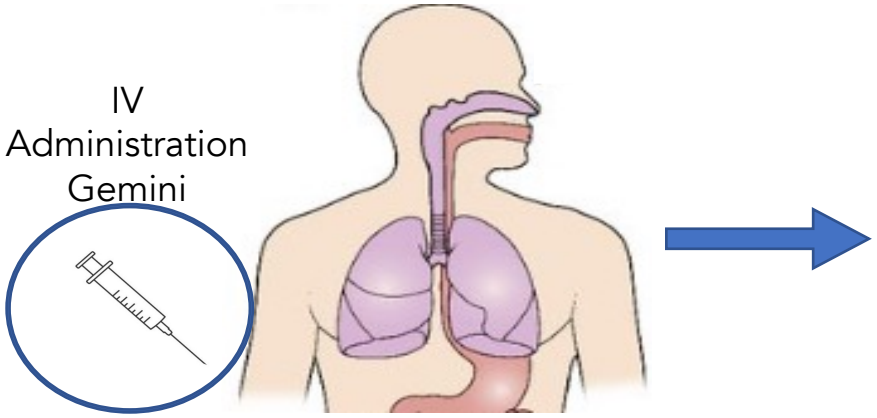
GEM-SSI Program

Gemini for the Prevention of Surgical Site Infection

GEM-SSI Program Highlights

Scientific Rationale

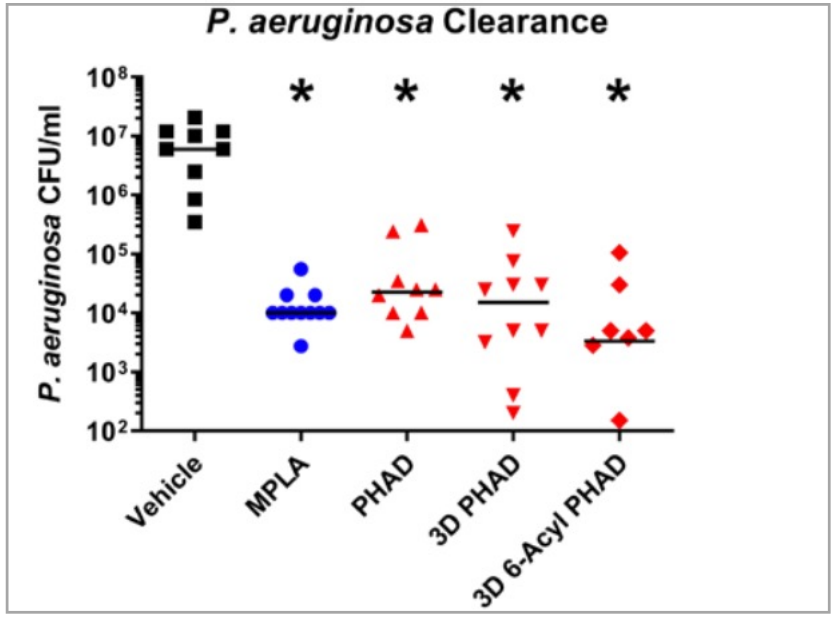


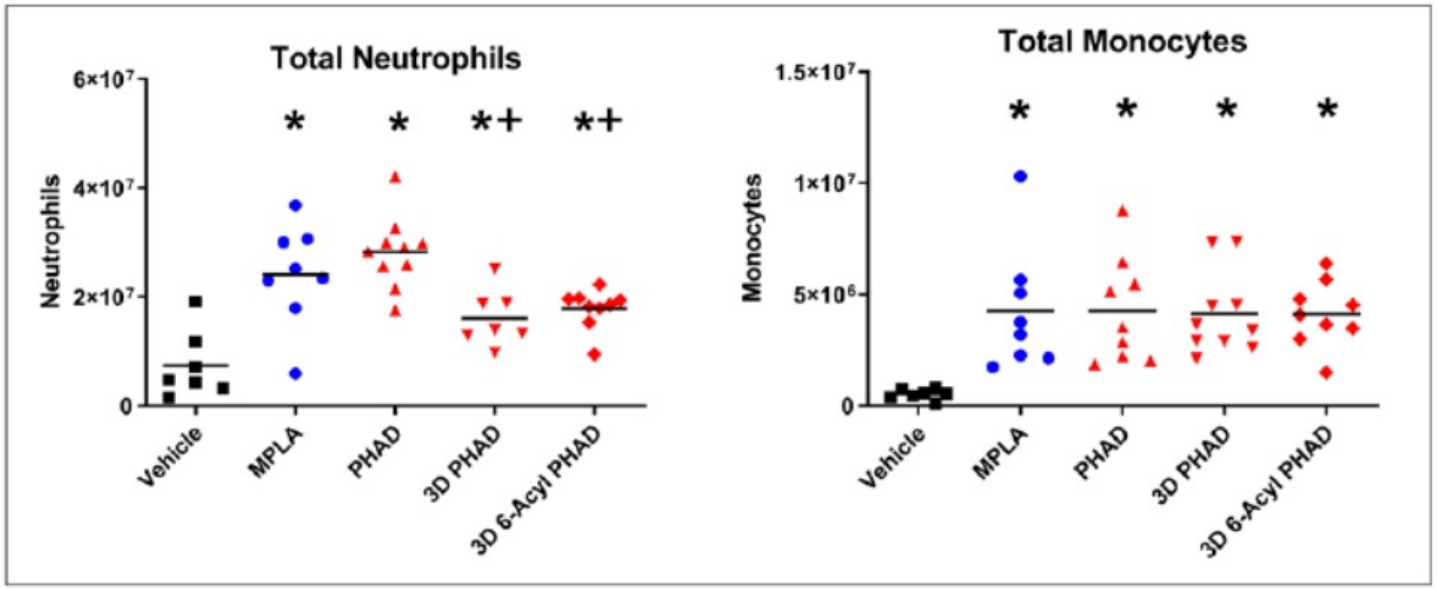
- Gemini preconditions the innate immune system through a process of trained immunity, comprising redirection and attenuation of the innate immune system's response to external stress (infection, trauma, etc.)
  - ➢ Allows for rapid response to external stress
  - ➢ Downregulates the pro-inflammatory response, reducing cellular damage and allowing healing to take place
- Multiple preclinical studies performed demonstrating consistent reduction or prevention of infection (both gram negative and gram positive)

Intellectual Property	US 11,389,465 (Licensed from Vanderbilt University). Additional related applications anticipated
Regulatory	Potential fast track, breakthrough designations possible. Potential for orphan status for certain indications
Market	Large Market potential: Approximately 3% of hospital patients suffer at least one hospital associated infection (HAI) (~687,000 HAI annual cases in acute care settings resulting in ~72,000 deaths)[1]
Next Steps	Initiate Phase 1 healthy volunteer study in early 2024

1. 2015 HAI and Antibiotic Use Prevalence Survey, CDC.gov

Pretreatment with PHADs Impart Protection from Gram Negative Bacterial Infection





Pre-treatment with MPLA or PHAD demonstrated TLR4-mediated pathogen clearance

Pre-treatment with MPLA or PHAD demonstrated TLR4-mediated increased leukocyte recruitment in peritoneal cavity

Study Design: Mice were pre-treated (24 and 48 hours) with vehicle, MPLA (20ug), or PHADs (20ug) prior to infection with *P. aeruginosa*. All given IP. Cell counts assessed from peritoneal lavage 6 hours post infection. n = 7 to 10 animals per group.
3D and 3D-6-Acyl PHAD are analogs of PHAD.

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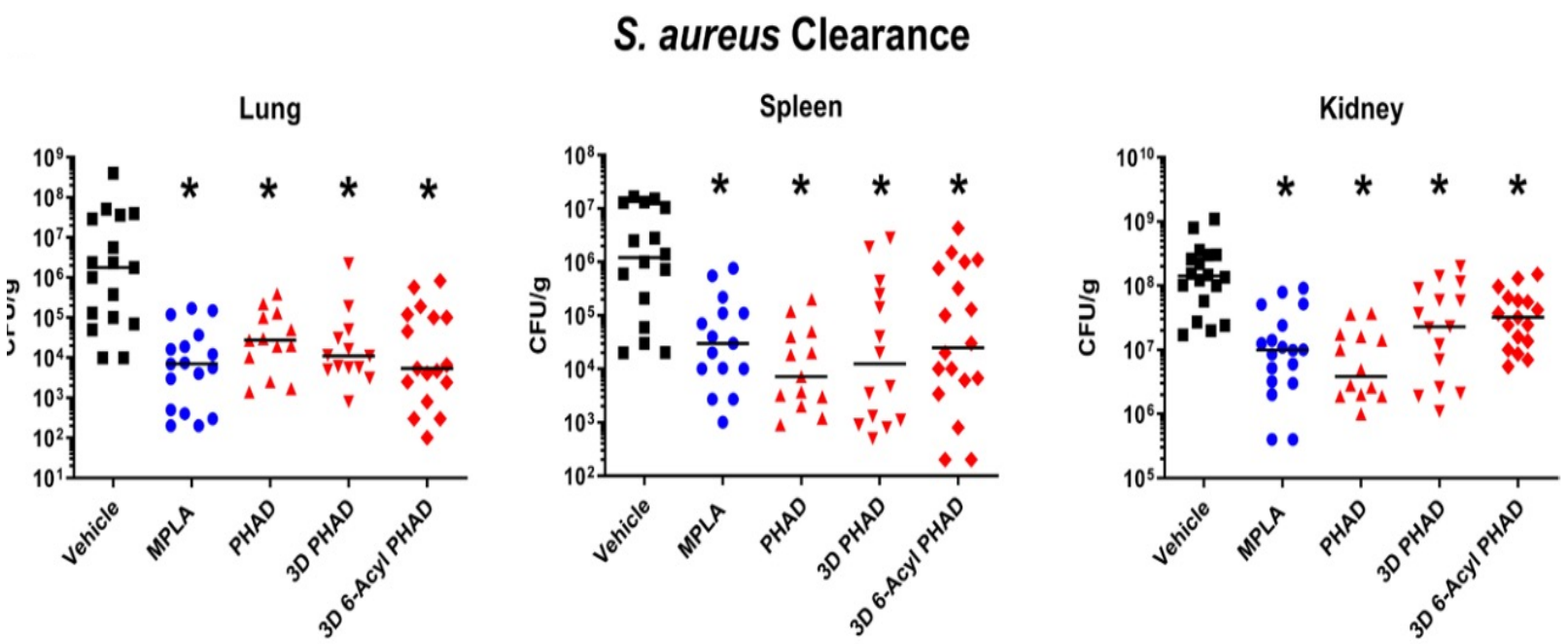
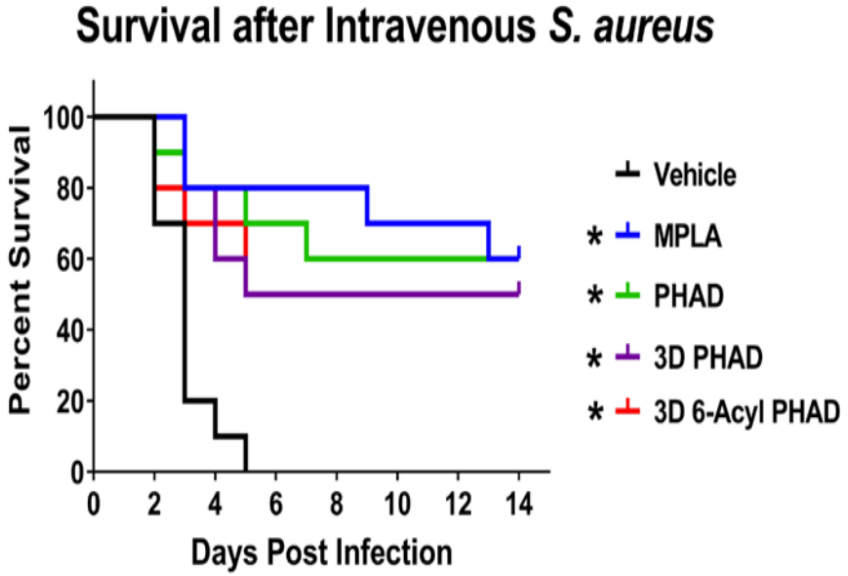
Hernandez, et. al. Phosphorylated Hexa-Acyl Disaccharides Augment Host Resistance Against Common Nosocomial Pathogens.
DOI: 10.1097/CCM.0000000000003967

Pretreatment with PHADs Impart Protection from Gram Positive Bacterial Infection



Pre-treatment with MPLA and PHAD(s) demonstrated improved pathogen clearance 3 days post infection



Pre-treatment with MPLA and PHAD(s) demonstrated improved survival

Study Design: Mice were pre-treated (24 and 48 hours) with vehicle, MPLA (1 mg/kg), or PHADs (1 mg/kg) prior to infection with *S. aureus*. All given IV. Bacterial counts assessed 3 days post infection. n = 7 to 10 animals per group.

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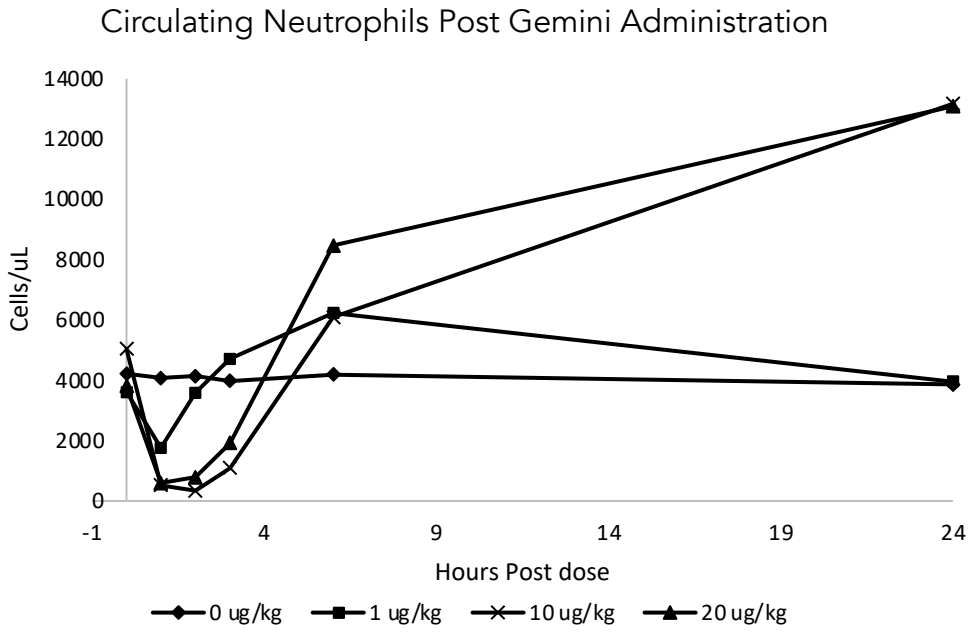
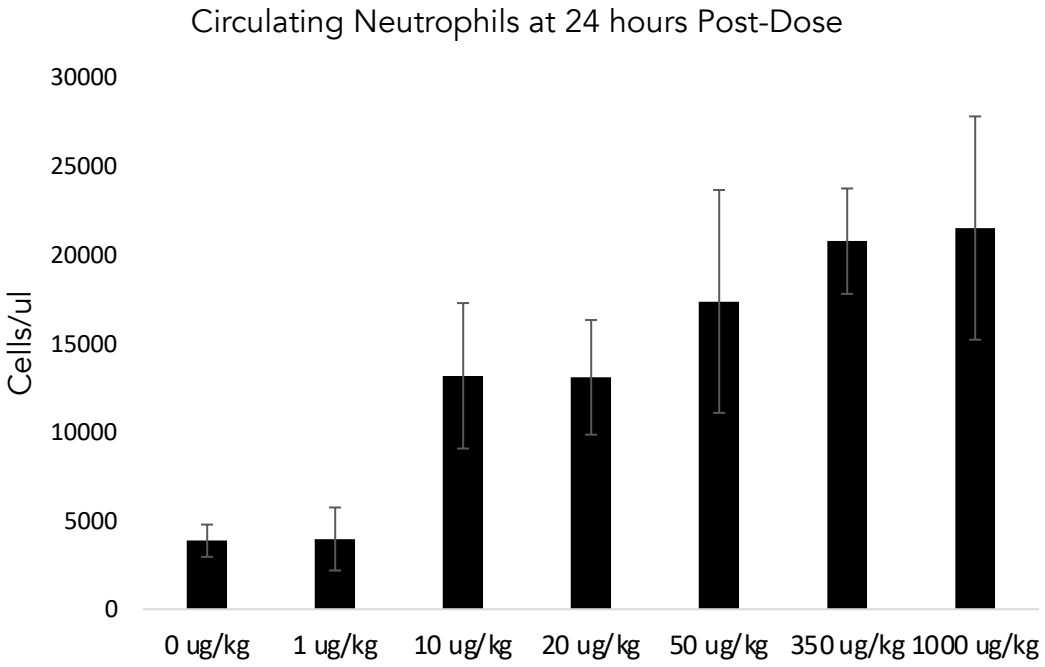
Hernandez, et. al. Phosphorylated Hexa-Acyl Disaccharides Augment Host Resistance Against Common Nosocomial Pathogens. DOI: 10.1097/CCM.0000000000003967

Healthy Animal Study: Gemini Administration Induces White Blood Cell Mobilization





- Gemini administration results in white blood cell migration (including neutrophils (data shown), monocytes and lymphocytes) from circulation and subsequent rebound at 24 hours post-dose
- This effect will be evaluated in the Phase 1 clinical study as a key indicator of drug activity

Study Design: Dogs received a single dose of vehicle Gemini and blood samples were collected at various time-points up to 24 hours post dose for analysis (n=3–10 per group)

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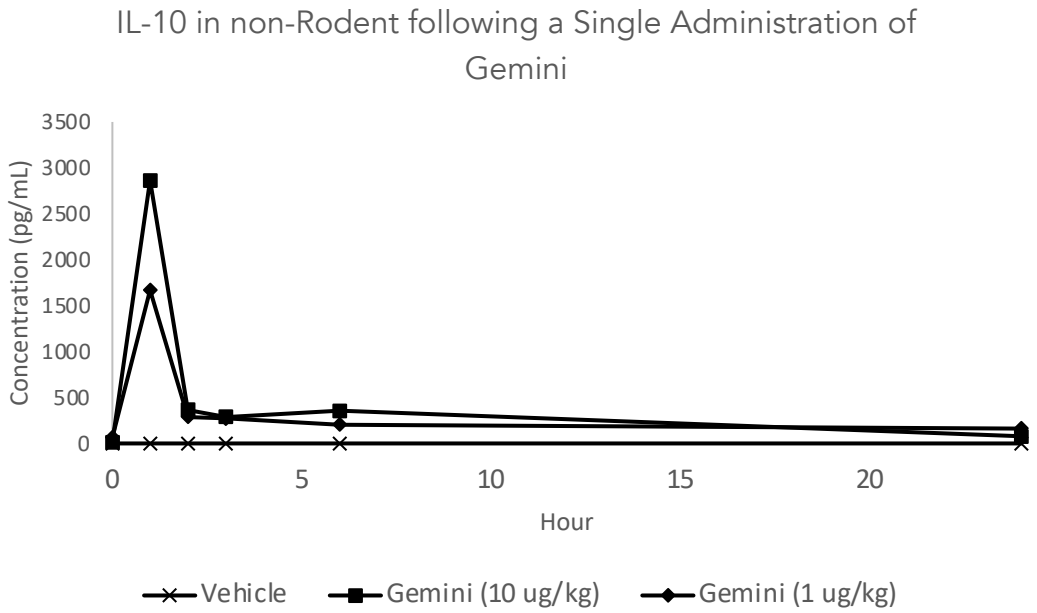
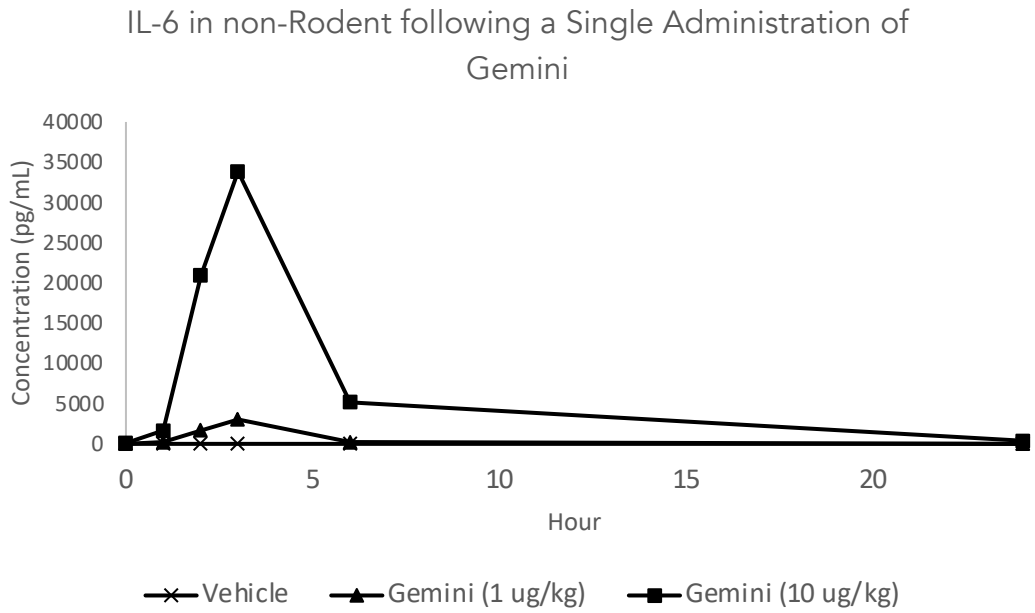
Healthy Animal Study: Gemini Administration Induces Key Cytokines





- Gemini administration resulted in a dose dependent increase in cytokines following a single dose
- IL-10 is characterized as an anti-inflammatory cytokine leading to the ultimate resolution of inflammation.
- NGAL (data not shown) sequesters iron to prevent iron-mediated reactive oxygen tissue damage and limits iron availability for bacterial proliferation
- IL-6 upregulation may be a necessary first step in the establishment of trained immunity
- *This effect will be evaluated in the Phase 1 clinical study as a key indicator of drug activity*

Study Design: Dogs received a single dose of vehicle Gemini and blood samples were collected at various time-points up to 24 hours post dose for analysis (n=3 per group).

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Phase 1 Clinical Study[1]

Title: A Phase 1, Randomized, Placebo Controlled, Single Blind, Single-Ascending Dose in Healthy Volunteers

Readouts: safety, tolerability, PK, and biomarker assessments

- 8 subjects per cohort randomized 1:4 placebo vs drug
- Study start anticipated in Q1 2024

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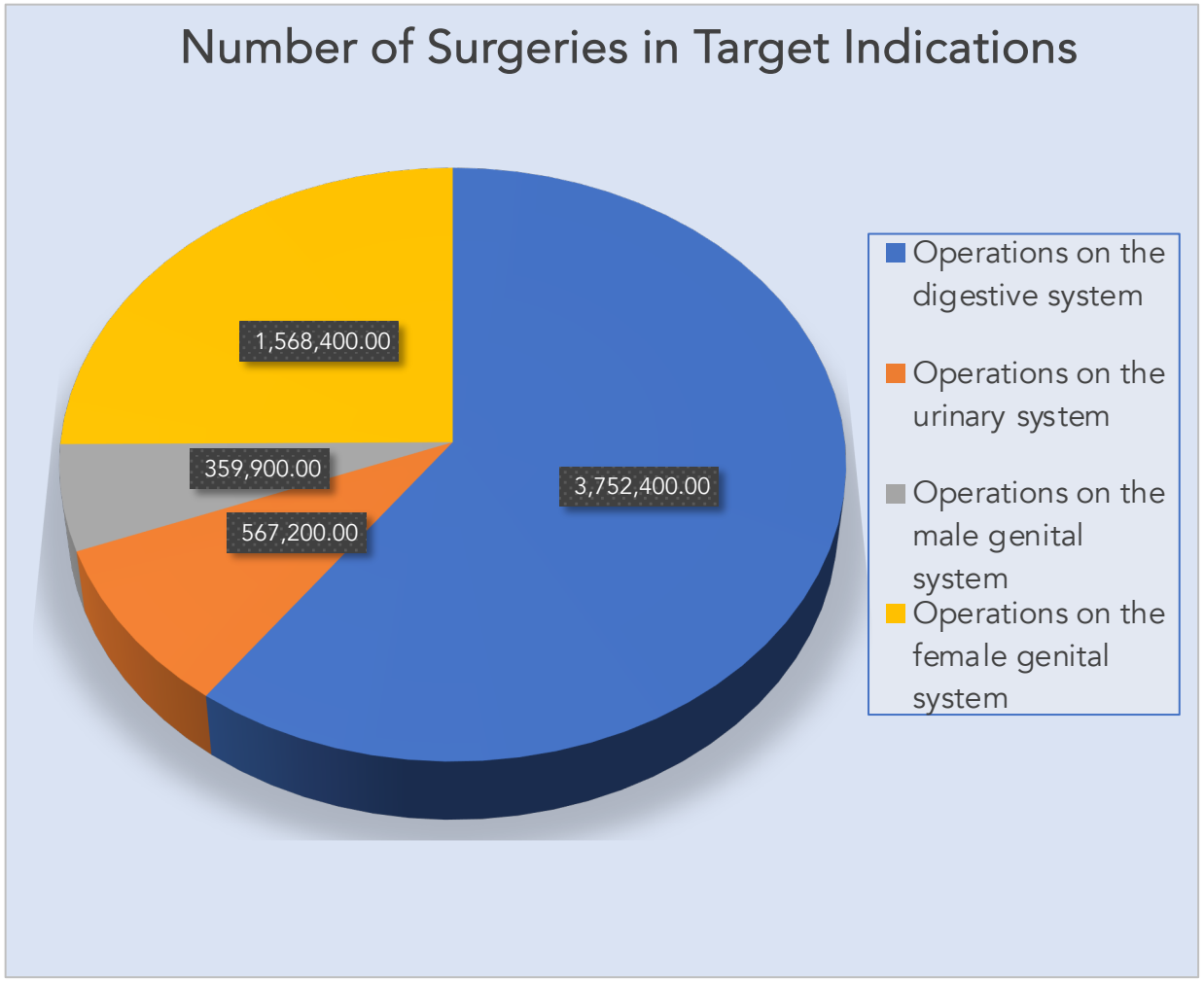
1. Phase 1 study will support both GEM-HAI and GEM-AKI programs

Total US Addressable Market for Post-surgical Infection is over 6.3M Annual Procedures



- Our strategy will be to seek approval for prevention of post surgical infection following operations of the digestive system
- Initial clinical studies will be on patients undergoing colorectal surgery
- Conservatively, if we treat 10% of the digestive system market at a price of $5k per patient: 3.8 M x 10% = 380,000 x $5k = $1.87 billion annual revenue potential

Surgeries in Hospital-Based Ambulatory Surgery and Hospital Inpatient Settings, 2014 Claudia A. Steiner, M.D., M.P.H., Zeynal Karaca, Ph.D., Brian J. Moore, Ph.D., Melina C. Imshaug, M.P.H., and Gary Pickens, Ph.D.

The Impact of Surgical-Site Infections (SSI)

Surgical site infection (SSI) is the most common health care-associated infection following surgery and is associated with significant morbidity and mortality, transfer to an intensive care unit setting, prolonged hospitalizations, and hospital readmission[6]

Up to 30%
Estimated SSI rate of patients undergoing colorectal surgery[1]

20%
SSI rate of all health care-associated infections in US hospitals[2]

$11k-26k
Cost of treatment per infection directly attributable to SSIs

7-11 days
Additional post-operative hospital days for patients with SSIs[2]

2-11x
Increased risk of death for SSI patient (up to 40% mortality after deep sternal infection)[1]

US $10bn; EU~€11bn
Estimated SSI-related incremental annual hospital costs in the US and EU[3,4,5]

1. *DOI:10.1001/jamasurg*
2. *DOI:10.1086/676022*
3. *DOI*: 10.1016/j.jamcollsurg.2016.10.029
4. *~€11bn represents the midpoint of the range discussed in WHO Global guidelines on the prevention of surgical site infection. Nov 2016*
5. *DOI: 10.1086/501572*

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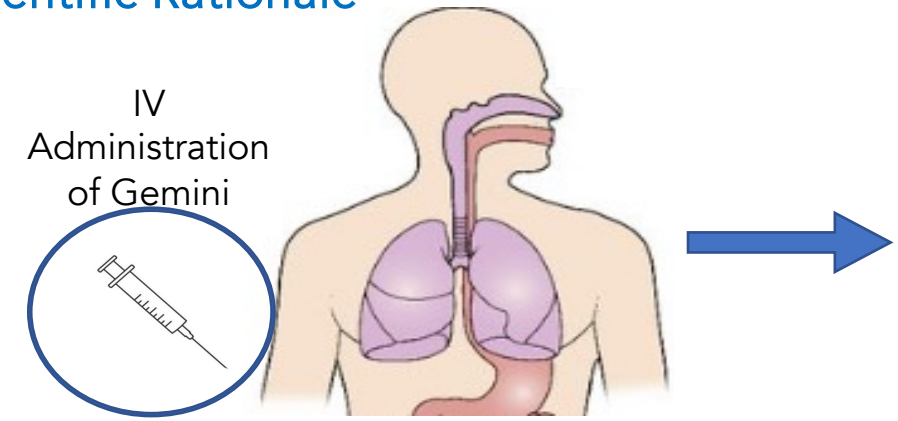
GEM-AKI and GEM-CKD Programs

Gemini For the Prevention of Acute Kidney Injury

and Chronic Kidney Disease

GEM-AKI Program Highlights

Scientific Rationale



- Gemini preconditions the innate immune system through a process of trained immunity, comprising redirection and attenuation of the innate immune system's response to external stress (infection, trauma, etc.)
  - ➢ Allows for rapid response to external stress
  - ➢ Downregulates the pro-inflammatory response, reducing cellular damage and allowing healing to take place
- Significant protection from AKI observed in ischemia reperfusion model
- Significant anti-fibrotic activity observed in preclinical AKI and CKD model (UUO) with PHAD treatment

Intellectual Property

- Patent applications covering formulations and methods of treating and preventing acute and chronic organ disease filed

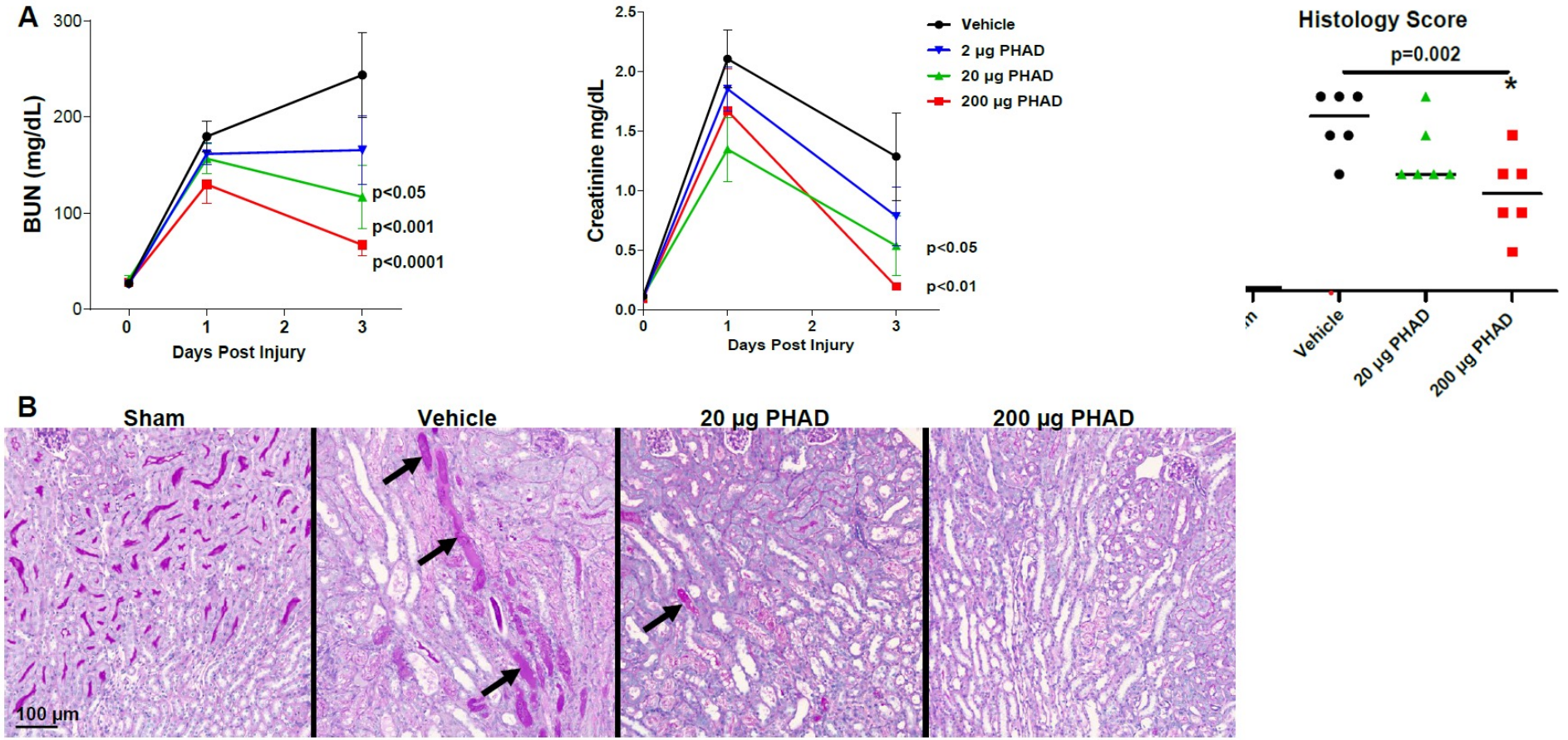
Market

- CDC estimated 15% of US adults have CKD
- CDC estimates an annual Medicare cost for CKD of $87 billion

Next Steps

- Conduct additional nonclinical studies for AKI, CKD and potentially other inflammatory conditions. Initiate Phase 1 study in 2023 (This is the same Phase 1 study as noted for GEM-HAI program, data will support both)

PHAD Pretreatment Reduces AKI in a Unilateral Ischemia/Reperfusion Model [1]



Mice pretreated with intravenous PHAD at 2, 20, and 200 µg/mouse or vehicle control, 48 and 24 hours prior to undergoing right nephrectomy followed by clamping of the left renal pedicle for 28 minutes. A) Blood was analyzed for BUN and creatinine at baseline (D0), and post-injury day 1 and 3. Results expressed as means +/-SEM with N = 8. Two-way ANOVA was used to compare differences between PHAD- and vehicle-treated mice over time, with p values indicated; B) Representative images of periodic acid-Schiff staining (PAS) sections of the outer medulla at Day 3 after injury in sham, vehicle- and PHAD-treated mice. Arrows point to casts within the collecting tubules. Scale bar, 100 µm. N = 6. C) Pretreatment with PHAD reduced tubular injury in a dose dependent manner as visualized (PAS).

1. *Hernandez A, Patil N, et. al. Pretreatment with a novel Toll-like receptor 4 agonist attenuates renal ischemia-reperfusion injury. American Journal of Physiology-Renal Physiology 2023 324:5, F472-F482*

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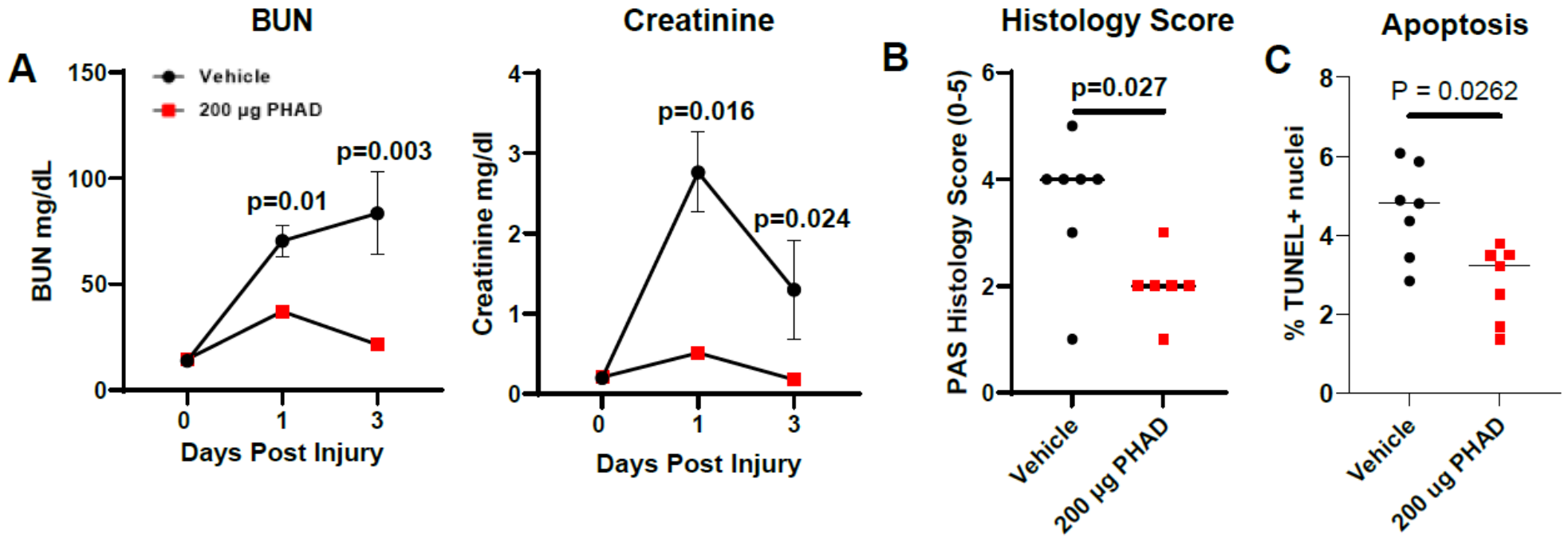
PHAD Pretreatment Reduces AKI in a Bilateral Ischemia/Reperfusion Model[1]

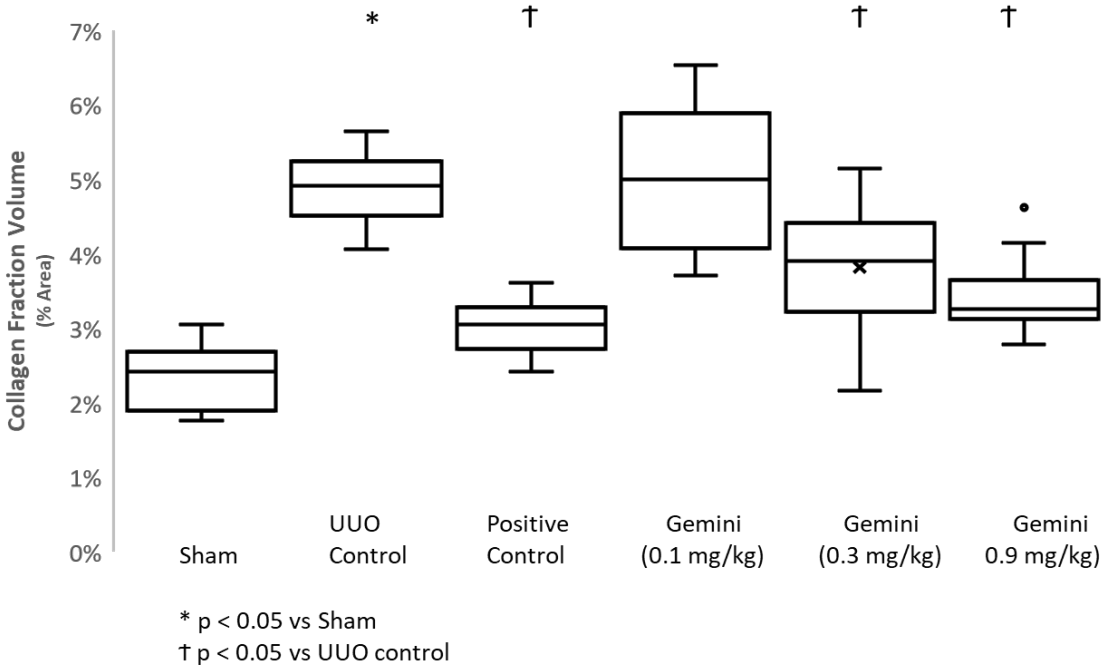


Mice were pretreated with intravenous PHAD at 200 µg/mouse or vehicle control, 48 and 24 hours prior to undergoing bilateral renal pedicle clamping for 24 minutes. A) Blood was analyzed for BUN and creatinine at baseline (0), and post-injury day 1 and 3. Results expressed as means +/-SEM with N = 10. Two-way ANOVA was used to evaluate between group differences over time ($p < 0.05$ for both BUN and serum creatinine), with p values shown after Sidak's correction for multiple post hoc between group comparisons at each time point; B) Tubular injury scores in the outer stripe of the outer medulla from PAS-stained sections Day 3 after injury; C) Apoptosis in the outer stripe of the outer medulla from TUNEL stained sections Day 3 after injury. N = 6-7.

REVELATION BIOSCIENCES

1. *Hernandez A, Patil N, et. al. Pretreatment with a novel Toll-like receptor 4 agonist attenuates renal ischemia-reperfusion injury. American Journal of Physiology-Renal Physiology 2023 324:5, F472-F482*

Gemini Treatment Reduces Fibrosis in Acute and Chronic Kidney Model (UUO in Rats)

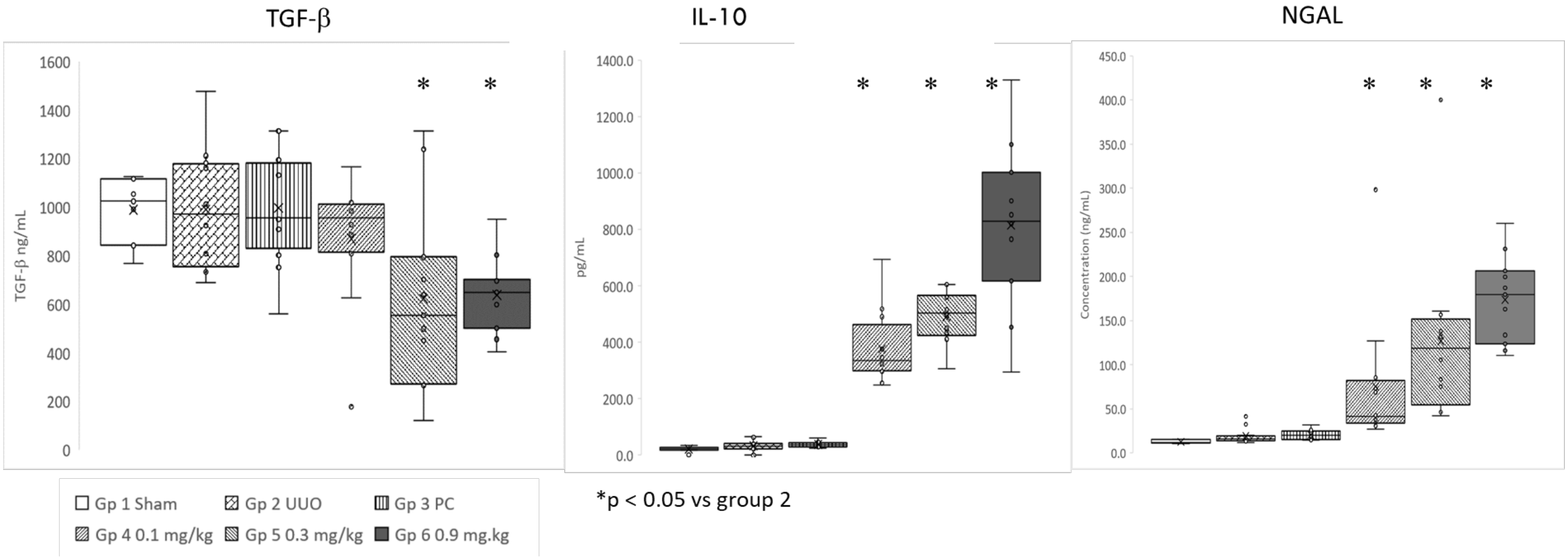


* p < 0.05 vs Sham
† p < 0.05 vs UUO control

- Rats (n=11-12 per treatment group) were subjected to the UUO surgical procedure
- Treatment with Gemini resulted in a significant dose-dependent reduction in fibrosis
- The high dose group (0.9 mg/kg) reduced new collagen deposition (fibrosis) by 58% vs new collagen deposition observed in the no treatment UUO group (normalized to sham group, n=6)

- Composite data represents the average of 3 anatomically distinct depths (10 images / depth / rat / group = ~60-65% of renal cortical area)
- Renal cortical fibrosis, expressed as Collagen Volume Fraction (CVF; via quantitation of PSR stained tissue sections) was increased in vehicle-treated UUO obstructed kidneys relative to sham-operated control
- SB-525334 attenuated UUO-induced increases in renal cortical CVF

Gemini Antifibrotic Effects Likely Mediated by Validated Target Cytokines



- TGF-β is pro-fibrotic and is directly linked to the propagation of fibrosis[1,2,3,4]
- IL-10 is a key driver for the reduction and resolution of inflammation
- NGAL is an important defense for preventing excessive oxidative damage resulting from injury/ongoing inflammation

1. *Mohy doi: 10.1016/j.mgene.2014.08.002,*
2. *Tian doi: 10.3892/etm.2019.8355,*
3. *Nawar, Elham A. et al. "Clinical value of transforming growth factor beta as a marker of fibrosis in adolescents with Chronic Liver Diseases." (2011)*
4. *4. De Heer, E., et. al. Nephrol Dial Transplant (2000) 15 [Suppl 6]: 72–73*

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Phase 1 Clinical Study[1]

Title: A Phase 1, Randomized, Placebo Controlled, Single Blind, Single-Ascending Dose in Healthy Volunteers

Readouts: safety, tolerability, PK, and biomarker assessments

- 8 subjects per cohort randomized 1:4 placebo vs drug
- Study start anticipated in Q1 2024

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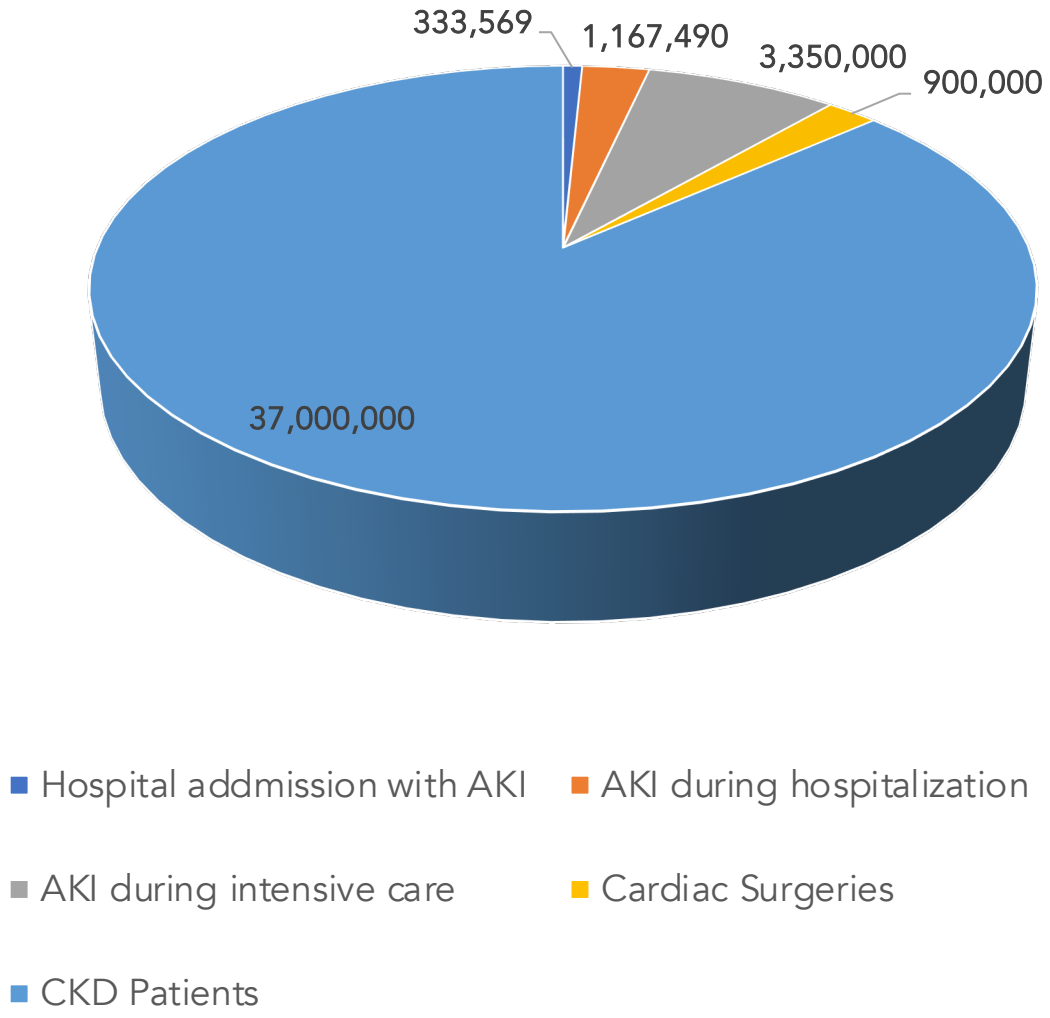
1. Phase 1 study will support both GEM-HAI and GEM-AKI programs

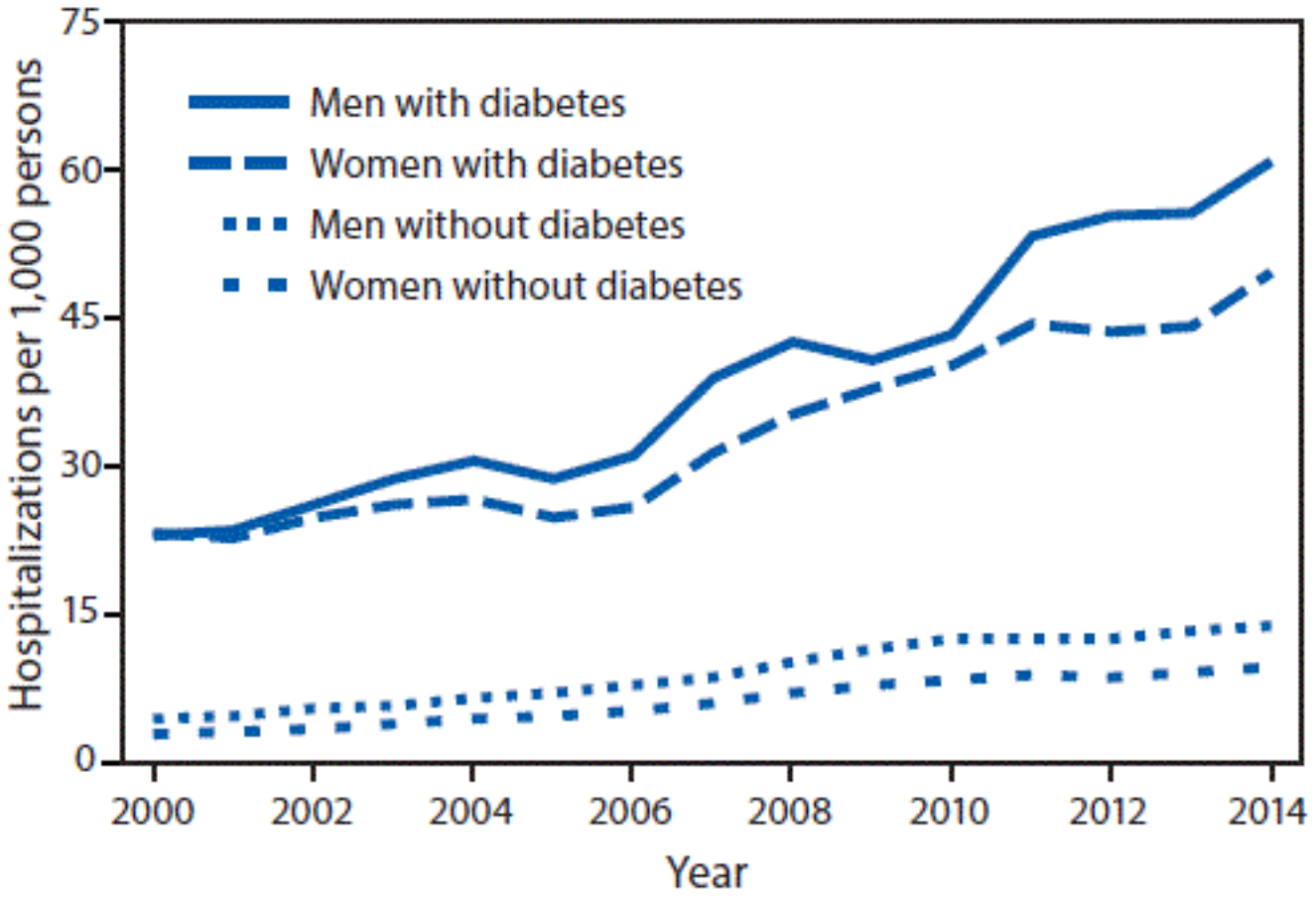
Total US Addressable Market for AKI and CKD is over 42M Annual Potential Patients



- Our initial strategy will be to seek approval for prevention of AKI following surgery
- Initial clinical studies will enroll patients undergoing cardiac surgery
- Conservatively, if we treat 20% of the cardiac surgery AKI market at a price of $7.5k per patient: 900K x 20% = 180,000 x $7.5k = $1.35 billion annual revenue potential
- In 2024 we will begin parallel development for the treatment of CKD to slow progression of disease
- Conservatively, if we treat 5% of the CKD market at a price of $2.5k per patient: 37M x 5% = 1.85M x $2.5k = $4.6 billion annual revenue potential

AKI Epidemiology

- In the US, 1% of all hospital admissions have AKI on admission[1]
- During hospitalization, the approximate incidence rate of acute kidney injury is 2 to 5% and it develops in up to 67% of patients admitted in the intensive care unit[1]
- AKI is an important contributor to increased hospital stay duration and patient morbidity [2,3,4]



Age-standardized incidence of hospitalizations with acute kidney injury[6] among men and women aged ≥20 years with and without diabetes — United States, 2000–2014[5]

1. Acute Kidney Injury Abhinav Goyal; Parnaz Daneshpajouhnejad; Muhammad F. Hashmi; Khalid Bashir
2. Winther-Jensen M, Kjaergaard J, Lassen JF, Køber L, Torp-Pedersen C, Hansen SM, Lippert F, Kragholm K, Christensen EF, Hassager C. Use of renal replacement therapy after out-of-hospital cardiac arrest in Denmark 2005-2013. Scand Cardiovasc J. 2018 Oct;52(5):238-243
3. Park S, Lee S, Lee A, Paek JH, Chin HJ, Na KY, Chae DW, Kim S. Awareness, incidence and clinical significance of acute kidney injury after non-general anesthesia: A retrospective cohort study. Medicine (Baltimore). 2018 Aug;97(35):e12014.
4. Kirkley MJ, Boohaker L, Griffin R, Soranno DE, Gien J, Askenazi D, Gist KM., Neonatal Kidney Collaborative (NKC). Acute kidney injury in neonatal encephalopathy: an evaluation of the AWAKEN database. Pediatr Nephrol. 2019 Jan;34(1):169-176.
5. CDC Trends in Hospitalizations for Acute Kidney Injury — United States, 2000–2014
6 .Acute kidney injury identified by the following International Classification of Diseases, Ninth Revision, Clinical Modification codes: at least one diagnostic code of 584 or at least one procedure code of 39.95 or 54.98 and excluding the following codes: V45.1, V56.0, V56.31, V56.32, and V56.8.

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AKI as a Result of Cardiac Surgery

Acute kidney injury is a major medical problem that is of particular concern after cardiac surgery.[1] Additionally, evidence suggests that even slight postoperative increases in serum creatinine levels are associated with a significant increase in the risk of death.[2]

Up to 31%

Of patients undergoing cardiac surgery with no prior CKD develop post operative AKI[3]

50%

Death rate of patients that develop post operative AKI[2]

$42.6k

Average cost of treatment directly attributable to AKI[2]

4-7 days

Additional hospital days for patients with postoperative AKI[2]

8x

Increased risk of death for patients that develop postoperative AKI[3]

79%

Rate of postoperative AKI patients that develop a least one other complication[2]

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1. DOI: 10.2147/IJNRD.S167477
2. DOI: 10.1097/ACO.0000000000000422
3. DOI: 10.214470/1678-9741-2018-0084

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Financial Overview

Financial Overview

Cap Table	Shares
Common Stock Outstanding	**209,911**
Class C common stock warrants w/$5.36 exercise	16,239
Public Warrants w/$402.50 exercise (REVBW)	10,012
Warrants w/$24.20 weighted avg exercise[1]	11,417
Roll-over RSU's	99
Options granted	1,157
Equity Pool (available for grant)	20,466
Fully Diluted	**269,301**

Management and 5% holdings	Percent
Total management	**1.7%**
Sabby Volatility Warrant Master Fund, Ltd.	6.4%

1. *Includes (i) 7,937 Private Warrants w/exercise of $630.00, (ii) 155 Roll-over Warrants w/exercise of $2816.92, (iii) 2,809 Common Stock Warrants w/exercise of $3,454.50, and 556 Placement Agent Warrants w/exercise of $787.50.*

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Thank you!