Proprietary Renalase Platform
A first-in class Renalase agonist for Hyper-inflammation in:

Systemic Viral Infections
COVID-19
Acute Organ Injury

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Co-founder and Chair of Scientific Advisory Board, Personal Therapeutics
The Renalase Agonist Platform

• Renalase (RNLS): a secreted protein that promotes cell survival and decreases inflammation through defined mechanisms

• Platform opportunities for broad indications
  – Hyper-inflammation in systemic viral infections, including COVID-19
  – Acute organ injury: Lung, Kidney, and Pancreas

• Proprietary RNLS mimetic peptide (BP-1002) with demonstrated preclinical proof of efficacy in acute diseases
  – IND targeted for Q1 2022

• Potential biomarker-linked therapeutic strategy with proprietary RNLS assay to optimize patient selection

• 3 NIH SBIR grants (>2.5 million)
Poly (I:C): A General Model of Hyper-inflammation

[Diagram showing the structure and signaling pathway of Poly (I:C)]
Renalase agonist BP-1002 improves survival in Poly (I:C) viral mimic model

Increased mortality in RNLS KO Exposed to Poly (I:C)

BP-1002 rescues RNLS KO phenotype
RNLS deficiency dramatically increases Poly (I:C) mediated inflammatory cytokines production through NF-κB, ISRE3 activation in mouse model.
Low plasma levels are associated with worse outcomes in COVID-19. 2020.

Updated cohort: N=458 COVID-19 Subjects

Paper under review
BP-1002 blunts multiple COVID-19 induced inflammatory cytokines in human blood ex vivo

COVID-19 mixed peptides contained in capsid proteins S and M [0.19 nM] were added to fresh human blood from 4 healthy donors for 3 hrs and cytokine responses were assayed by ELISA. Little to no response was seen with COVID-19 peptide (not shown)
RNLS agonist BP-1002 (RP10) improves survival in COVID-19 mouse model
BP-1002 vs Standard Therapy in COVID-19

• Advantageous Side Effect Profile Over Dexamethasone
  • BP-1002 does not suppress adrenals and thymus; Dexamethasone does
  • Dexamethasone increases risk of opportunistic infections

• Potential therapeutic advantage over Tocilizumab,
  • BP-1002 targets multiple cytokines and is also a survival factor that prevents cell death
  • Tocilizumab only targets IL-6 Receptor

• Potential for predictive RNLS Assay to optimize patient selection and timing of administration of BP-1002
Development plan to clinical trials: IND in Q1 2022

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$5.5M $10M
BP-1002 in Hyper-Inflammation

• Broad utility in systemic viral infections and acute organ injury

• Low Renalase associated with worse outcome in COVID-19 patients  
  – 1\textsuperscript{st} indication: COVID-19

• Chemically synthesized novel small RNLS mimetic peptide, designed for improved stability and efficacy  
  – Treats severe disease and reduces mortality in animal models  
  – Scalable for chemical manufacture  
  – Composition of matter patent filed  
  – Licensed and developed in collaboration with Bessor Pharma  
  – IND in Q1 2022

• Platform potential for biomarker-linked therapeutics for acute diseases.
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