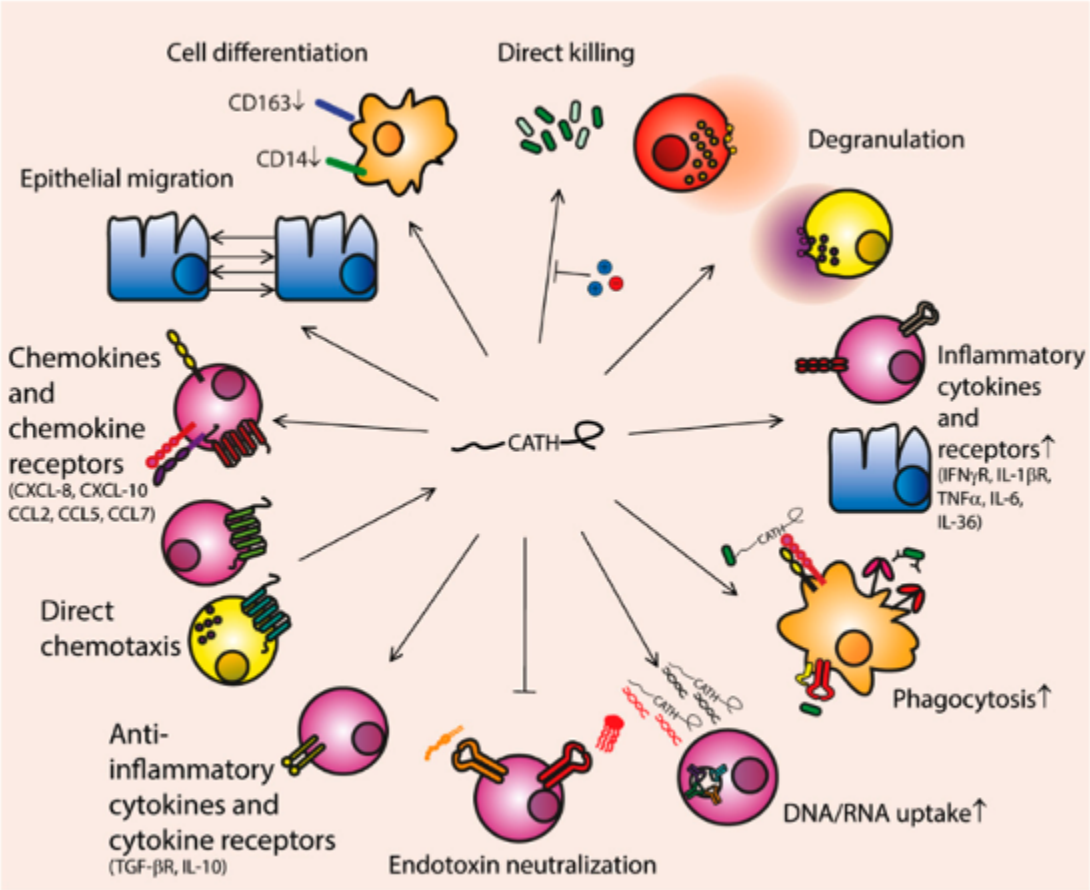
Docket #: S22-090

Harnessing Cathelicidin Gene CAMP Upregulation as Adjuvant Therapy for Disease Treatment and Prevention

Researchers at Stanford University have found that upregulating cathelicidin gene expression can improve the efficacy of a wide variety of treatments as an adjunct therapy. By leveraging NK cell activation and cytokine regulation (IL-2/IL-15), the method lowers pharmaceutical effective dose and cytotoxicity, reduces side effects, and enhances immune response against tumors and pathogens. This universal immune enhancer can be used alongside a variety of cancer treatments, including NK cell therapy, treatments of viral, bacterial or fungal infections, and the treatment and prevention of Alzheimer's and diabetes.



Various Functions of Cathelicidin
(Image courtesy the Barron Lab)

Stage of Development - Proof of Concept

Applications

- Adjuvant therapy for:
  - Infectious disease treatments, including vaccines, antimicrobial, antifungal, and antiviral compositions
  - Cancer treatments, including NK cell therapy
- Alzheimer's and diabetes treatments and prevention

Advantages

- **Enhances treatment efficacy**: is antimicrobial, strengthens host defense mechanisms, reduces systemic inflammation, and speeds wound healing by enhancing stem cell migration
- **Can address treatment resistance** through immune system enhancement to potentially help patients whose diseases have stopped responding to conventional treatments
- **Versatile:**
    - Applicable across a broad range of diseases
    - Applicable across a broad range of treatments from simple lifestyle interventions to sophisticated pharmaceutical combinations
    - Can be added to existing treatment protocols
    - Multiple pathways for immune enhancement
    - Can be administered alone or as adjuvants
- May **reduce pharmaceutical cytotoxicity**, allow primary treatment optimization, and **lower the effective dose** required
- May have **fewer side effects** as natural compounds are generally well-tolerated
- **Cost effective, accessable, and personalizable**

Patents

- Published Application: 20230355671

Innovators

- Annelise Barron
- John Fortkort

Licensing Contact

Hyunjin Kim

Licensing Manager, Life Sciences

Email