Background
Proteases play a crucial role in maintaining health by regulating numerous physiological processes. The expression of protease is tightly controlled under normal conditions. However, dysregulation of protease activity can be a hallmark of various pathologies, including cancer, neurodegenerative diseases, and autoimmune disorders.

Understanding the role of individual proteases in disease pathology is crucial for the development of therapies for protease-related diseases, particularly through the use of protease inhibitors. While progress has been made to develop protease inhibitors for therapeutic purposes, creating a potent and specific protease inhibitor is challenging. Lack of specificity can lead to off-target inhibition and may result in unexpected side-effects when used in humans.

Daiichi-Sankyo established a proprietary platform for creating protease inhibitors that are highly potent and specific. We are seeking collaborations with researchers who have expertise in protease-related diseases, particularly those lacking effective treatments. In the collaborative research, we will create and provide inhibitors, and the collaborators are expected to advance the understanding of protease involvement in disease pathology and evaluate the therapeutic potential of protease inhibition.

What we're looking for
We are interested in diseases that can be treated effectively by inhibiting one or two proteases. The target protease(s) do not have to be expressed only extracellularly, but therapeutic efficacy must be expected by inhibiting the protease outside the cell. We are seeking research that 1) has identified key proteases, 2) needs inhibitors with high specificity to demonstrate the potential of the protease(s) as a therapeutic target, and 3) needs protease inhibitors with good pharmacokinetics that can be used in animal studies.

Solutions of interest include:

- Researchers focused on diseases that could be treated by inhibiting one or two key proteases.
- Cell-free and cell-based assays useful to understand pathophysiology.
- Animal model of the target disease(s) (e.g. transgenic animal or knock-out animal).

Our must-have requirements are:

- Reasonable expectation of dramatic improvement by single or dual protease inhibition.
- Unlikely to cause harmful effects when inhibited, based on knockout animal studies and available literature.
- Data from animal studies or cell experiments supporting the validity of targeting the protease(s).

Our nice-to-have's are:

- Animal model of the target disease is available.

What's out of scope:

- Diseases that require inhibition of three or more proteases for treatment
- Diseases effectively treated by existing drugs (e.g., diabetes, hypertension, hyperlipidemia, and stomach ulcer)
- Cancer
- Infectious diseases

Acceptable technology readiness levels (TRL): Levels 2-4
1. Basic principles observed
2. Concept development
3. Experimental proof of concept
4. Validated in lab conditions
5. Validated in relevant environment
6. Demonstrated in relevant environment
7. Regulatory approval
8. Product in production
9. Product in market

What we can offer you
Eligible partnership models:
Sponsored research
Benefits:
Sponsored Research
Funding is proposal dependent, with up to $ 100K/year for a 2-year project with potential follow-on funding for 1 year.
Who we are
At Daiichi Sankyo, we attach significant importance to working with academic institutions, startups and bioventure companies to discover new therapeutics in the place where hypotheses are brought and tested in order to expand possibilities for scientific innovation breakthrough. We build sustainable relationships with partner institutions and companies through open and fair alliance management and trust based on mutual respect as the foundation for effective collaborations. Our goal is to jointly create new value for patients by maximizing each other’s expertise and strengths.

Reviewers

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