



SHIONOGI Wish List

(14th Jul. 2023 ver.)

We seek research themes related to the following diseases, modalities, and drug discovery-related technologies.

- **Infectious Diseases**

- HIV/HBV cure
- Hard-to-treat microbial infections
- Nontuberculous mycobacterial infection
- Pandemics caused by RNA viruses
- Host response to infectious diseases

- **QOL diseases**

- Dementia [including BPSD (Behavioral and Psychological Symptoms of Dementia)]: drug discovery and biomarkers to improve symptoms
- Sleep apnea syndrome
- Sensorineural hearing loss
- Respiratory diseases: drug discovery for targeting cellular senescence, immune-stimulation, and tissue repair and regeneration
- Cancer: technology or biomarkers for minimally invasive evaluation of tumor state
- Dementia / multiple sclerosis / cerebral infarction: drug discovery with neuroinflammation as an intervention point

- **Vaccines**

- Universal vaccine and antigen design
- Vaccine adjuvants
- New route of vaccine administration
- Vaccine antigen evaluation technology
- Technology that enables long-term follow-up and measurement of antibody-producing cells in vivo
- Predicting the emergence of new pathogens and mutant strains



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● Modalities and drug discovery related technologies

- LAP (Long-acting parenteral formulation) drug discovery
- Nucleic acid analog drug discovery
- Orally administered long-acting drug
- Covalent binders for drug discovery
- AI technology that can accelerate structure-activity relationship research
- Discovery of novel PET probes for MOA evaluation in the CNS region
- High through put in silico screening technology
- Analysis of simple RNA and, complexes of RNA and low-molecular-weight compounds
- Virtual screening of small molecule compounds against RNA targets
- PROTACs, molecular glue
- Acquisition of low-molecular-weight binders for undruggable targets
- Discovery of novel drug targets by PPI (protein-protein interaction) inhibitors
- Intra-cellular drug delivery technologies for medium sized compounds
- Docking of peptides to target proteins
- Protein design by in silico technology
- Novel antibody drug platform: polyclonal antibody production technology
- Technology that can identify drug targets with in silico/AI
- A method to predict clinical efficacy based on polypharmacology
- AI technology for devising scaled-up synthesis routes for drug candidate compounds
- Automated chemical synthesis
- Non-clinical model of sporadic Alzheimer's disease
- Non-clinical assessment that can predict the risk of clinical liver injury with high accuracy
- In vitro evaluation system for ocular toxicity
- In vivo / in vitro evaluation system for ototoxicity
- System toxicology
- Diagnostic imaging technology for organ toxicity
- AI toxicity prediction system in clinical biochemical measurements