Roger Ptak, Chief of Drug Development and Preclinical Research Branch at NIH/NIAID/DAIDS.
NIAID Perspective on LA drugs for TN

"[The global impact of TB] is why we are all here."

NIAID Strategic Plan for Tuberculosis Research, 2024 Update

Mission is to accelerate TB elimination via:

- **Research acceleration** to better understand TB through basic, translational, and clinical research.
- **Innovation** to enhance diagnosis, prevention, and treatment through new tools and strategies.

LA TB research priorities and key objectives.

- **Improve fundamental TB knowledge.** Basic biology, transmission, and immune response.
  - Animal and non-animal models of human TB disease (Objective 1.4):
    Better translate and predict clinical efficacy and help streamline the pathway to advance new treatments and drug regimens to the clinic.
- **Advance TB treatment and prevention strategies.** Drug targets and clinical trials.
  - New TB drug targets and interventions (Objective 4.1):
    Expand the types of drugs to which LA technologies can be applied.
  - New and improved TPT interventions (Objective 4.2):
    Teams are already working on LA approaches.
  - Shorter and safer treatment regimens for all patients and TB forms (Objective 4.3):
    Better and safer treatment options is a main goal of LA.
- Other TB research priorities.
  - **Improve TB diagnosis** (POC diagnostics, biomarkers).
  - **TB vaccine development** (Correlates of protection, vaccines).

Promise of LA TB drug development.

- Address potential TB therapeutic targets.
  - Drug resistance mechanisms; Host-pathogen interactions; Virulence factors; Pathogen metabolic pathways.
- Incorporate considerations for TB treatment regimens.
  - Enable better adherence; Improve outcomes for all patients, including co-morbidities and co-infections; Reduce forward transmission.

Resources for researchers

NIAID search tool (https://www.niaid.nih.gov/research/resources).

- Filter by disease/condition and approach.
- Resources include reagents, model organisms, tissue samples, etc.

NIAID ChemDB (https://chemdb.niaid.nih.gov/).

- Chemical and biological data on >295,000 compounds active against Mtb, HIV, and opportunistic infections. Data curated from the open literature and DAIDS testing contracts, when available.

DAIDs HIV preclinical services contract program (https://www.niaid.nih.gov/research/daids-services-program-accelerate-drug-development).

- FOA provides a mechanism to request gap-filling services.
- Approved applications receive services from DAIDS contractors at no cost (no funding is provided).

Program	Purpose	Appplication
Resources Access for Preclinical Integrated Drug Development (RAPIDD) (X01)	Supports development of new drugs for HIV, TB, HCV, and HBV. Services: Pharm/toxicity studies (GLP); Chemical synthesis of small molecules; Formulation development and manufacture of dosage forms (GMP); Preclinical efficacy studies in small animal TB models (mouse and rabbit).	PAR-22-185 Next due dates: Sept 1, 2024 and Jan 17, 2025
Resources to Advance Pediatrics and HIV Prevention Science (RAPPS)	Supports nextgen prevention and treatment strategies, including age-appropriate formulations, for HIV/co-infections/co-morbidities in maternal, pediatric, and adolescent populations. Services: Preclinical safety/tox, drug-drug interactions, and repro-tox studies (GLP); PKPD and efficacy in NHPs and small animal models; Bioanalytical method development; CMC/GMP manufacturing and product characterization; Scientific and quality/regulatory support.	New NIAID contract. Scientific contact: James Cummins

LEAP Resource Grant (R24 AI118397; https://longactinghiv.org).

- Charles Flexner (PI); University of Liverpool and University of Nebraska Medical Center (Collaborators).
  - **Annual workshops.** Forum to share diverse perspectives and updates and discuss challenges and future directions of LA/ER products.
  - **2022 CID Supplement.** Stand-alone issue comprising 13 articles on the development, translational and clinical science, and implementation of LA/ER drugs for HIV, TB, HCV, and HBV.
  - **2023 LA PaL.** Public, web-based platform to track IP, clinical development, and regulatory approval status of LA/ER products for HIV, TB, HCV, and HBV worldwide.

Funding opportunities

NIAID search tool (https://www.niaid.nih.gov/grants-contracts/opportunities).

- Filter by opportunity/grant type and query search terms (n=176 as of April 2024).

Notice	Purpose	Application
NOSI: Sustained release of antivirals for treatment or prevention of HIV or treatment of latent TB/HBV (SRATP)(R01)	Develop a diverse and comprehensive portfolio of SR/LA products for HIV treatment and prevention. 3-month minimum window of protection from a single or continuous dosing regimen. Q1M SR/LA strategies for LTBI and HBV treatment encouraged.	NOT-AI-22-042 Next due date: May 7, 2024 Scientific contact: Marina Protopopova (Treatment) James Cummins (Prevention)
NOFO: Planning for product development strategy (R34)	Develop a comprehensive and well-defined product development strategy for nextgen treatments. Includes treatment for HIV (comorbidities, coinfections, and complications); HIV prevention; and IND submission to FDA.	PAR-24-029 Next due date: Dec 4, 2024 Scientific contact: Marina Protopopova (Treatment) James Cummins (Prevention)
NOSI for SBIR and STTR grants: Delivery technologies to allow specific tissue target homing (RNA-DASH)	Accelerate future translation of RNA-based therapeutics to treat or prevent human disease using non-viral technologies. DMID topic of interest: Treatment of viral, fungal, bacterial, and parasitic infections. **DAIDS topic of interest:** Methods for specific delivery to HIV reservoir sites/sites relevant for treatment of HIV and associated infections.	NOT-AI-24-007 Next due date: Sept 5, 2024 Scientific contact: Kien Nguyen (DMID/NIAID) Roger Ptak (DAIDS/NIAID)
NIH and CDC solicitation for SBIR contract proposals.	Discovery and development of new drug classes with novel mechanisms of action for HIV, HBV, and TB.	PHS-2025-1 (DAIDS topic) Due date: TBD Scientific contact: Jonathan Bryan (NIAID/DEA)

Contact information and questions.

- NIH enterprise directory (https://ned.nih.gov/search). Program Officer contact information.
- Matchmaker tool (https://reporter.nih.gov/matchmaker) Identify projects, institutes, and/or program officers.