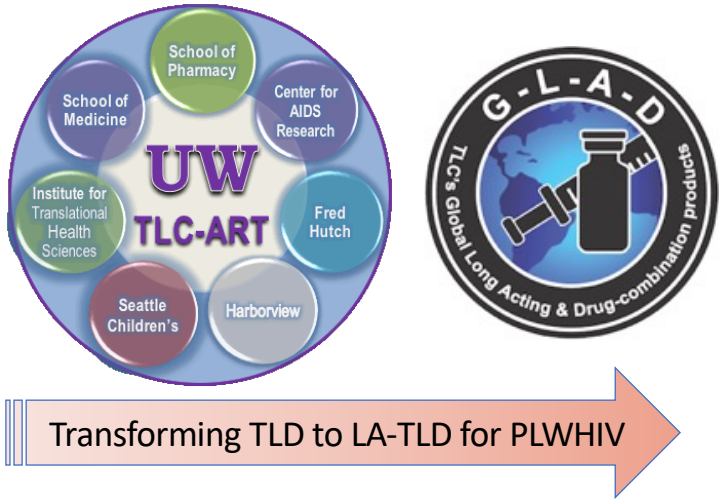
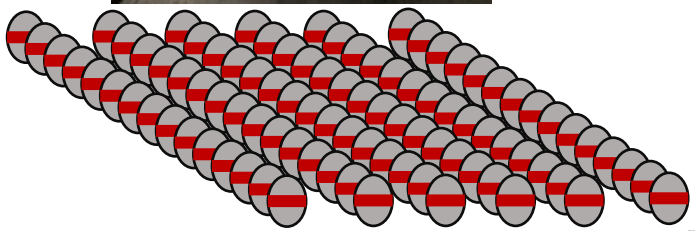
GLAD
UW Program on Targeted Long-acting Combination Antiretroviral Therapy (TLC-ART)



UNITIAID Grant 2020-39-GLAD

Ann Collier and Rodney JY Ho (PIs)

1 injection dose replaces 30-90 pills



Made possible by TLC's Innovation in an enabling technology called ***DcNP*** or Drug Combination Nanoparticle Platform Technology

Target Product Profile

	Minimum	Optimal
Target Population	Adult	
User Acceptability and Preference (PUC or Preferred User Characteristics)		
Route of Administration	Subcutaneous	Subcutaneous
Dose Volume.	2 mL each site/injection	1 mL each site/injection
Number of Injections/dose	Two injections	One injection
Local Reaction (Incidence, severity	Little or no local reaction	Little or no local reaction
Long Acting Pharmacokinetics (in primates after allometric scaling)		
Dosing interval (chronic phase)	given every 4 weeks	given every 12 weeks
Drug Combination Nano Particles (DcNP) Characteristics		
HIV Targets	2 HIV Targets	3 HIV Targets
Drug Stability [At 4° or 25°C]	6 months cold storage	6 months room temperature
Antiviral Activity (in vitro)		
Combination Vs Individual	≥ 1 (more potent than single agent)	≥ 1 (more potent than single agent)
Combination	Higher than individual drug potency	Higher than individual drug potency
Individual	Equivalent or higher than free drug potency	Equivalent or higher than free drug potency

EC_{50}=50% inhibitory effective concentration, mL=milliliter

LA-cART all-in-one dosing

- Innovations that enable all-in-one LA cART with DcNP

TLD-dislike one-another

Tenofovir	Lamivudine (3TC)	Dolutegravir
Love Water	Love Water	Not quite

Lipid excipients-serve as glue

Innovation in TLD solubilization and controlled SD to form stable DcNP powder

TLD powder product with unique Multi-drug Domain Matrices (MDM)

Suspend
Size-reduction

TLD nano-size DcNP LA-Injectable dosage