Lateral Flow Development Starter Kit
Catalog Number: **AU2059**
Product Data Sheet

Introduction:

Attogene's Lateral Flow Development Starter Kit is a convenient, simple, and ready to be used out of the box product designed to help labs with limited facilities engage in proof-of-concept LFA development. We provide a product that facilitates equal, if not superior results to leading brands products at a significantly improved cost. With a high barrier to entry, we recognize that it is important to provide laboratories with accessible components that will allow for more innovation in this sector. In this kit you will be provided with a variety of different nitrocellulose membranes, wicks, and sample pads to maximize the efficacy of your lab's research and development. High quality cassettes and our RNase Free Buffer #5 are also provided. These are tailored specifically for high compatibility with a variety of different reagents.

Kit Contents:

1. Twenty 4.5X60mm strips of each combination. A total of 480 strips are provided.
    a. Nitrocellulose (Four Types)
    b. Wicking material (Two Types)
    c. Sample pad (Three Types).
2. 100 cassettes (CO2022)
3. 125mL of RNase Free Running Buffer #5 (Part of AU2035)

Component	Description	Properties
CO-TCPR7-17	Treated Conjugate Pad	Contains Buffers and Detergents
CO-TCPR4-17	Treated Conjugate Pad	Contains minimal levels of additives.
CO-UTCP80-17	Untreated Conjugate Pad	Conjugate release pad with no additives.
CO-WM320-22	High Purity Cotton Fiber Wick	Slow absorption rate with a high absorption capacity.
CO-WM110-22	Cellulose Fiber Wick	Medium absorption rate with a medium absorption capacity.
CO-NC08-60	Nitrocellulose Membrane	8µm pore size membrane. High sensitivity, slow

		migration speed, high protein binding.
CO-NC10-60	Nitrocellulose Membrane	10µm pore size membrane. Medium sensitivity, medium migration speed, high protein binding.
CO-NC12-60	Nitrocellulose Membrane	12µm pore size membrane. Medium sensitivity, medium migration speed, high protein binding.
CO-NC15-60	Nitrocellulose Membrane	15µm pore size membrane. Lower sensitivity, high migration speed, lower protein binding.

Usage guide:

1. **Capture antibody/antigen conjugate application.**
   a. Spot reagents between 0.1-2mg/mL. There may be instances were going beyond this range may yield improved sensitivity, however, this is a typical concentration range.
   b. Use a protein such as BSA, or a saccharide such as sucrose to stabilize reagents on the nitrocellulose.
   c. Keep spotting volumes around 0.5-1uL total.
   d. Depending on the application, it is recommended to dry the strips at 2-8˚C for a period of 12-24 hours or at 37˚C for anywhere between 1-12 hours.
2. **Strip application into cassette:**
   a. Place the strip with the wick side against, not on top of, the small plastic ridge at the top of the cassette. This will position the conjugate pad side of the strip in a way that sits on top of the U-shaped ridge at the bottom of the cassette. Doing so will elevate the strip so that it properly seals the sample port. Reference Figure 1. for clarification.

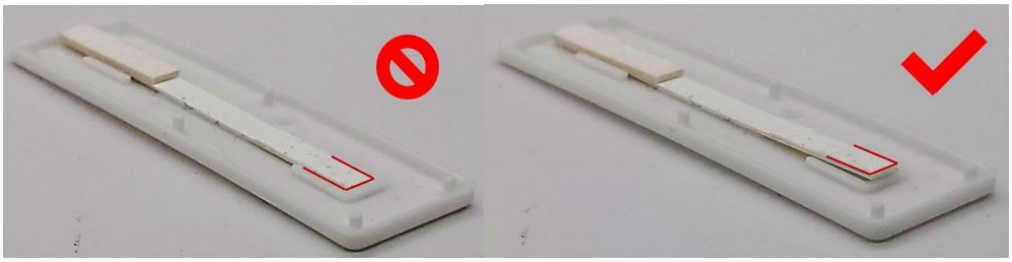

Figure 1

3. **Running the direct LFA:**
   a. Use between 100-250µL of sample/running buffer in each cassette.
   b. For usage directly in a microwell, sample/running buffer amounts between 80-200uL is advised.
   c. Mix your sample and running buffer with 1-10µL of 10 OD of the appropriate gold conjugate. For usage with a fluorescent reporter particle such as Quantum Dots, Europium Beads, or Phycoerythrin proper amounts must be determined via titration.
   d. Apply mixed sample directly to the sample port of the cassette or insert the strip's conjugate pad into the microwell.

e. Typical LFA running times range from 5-30 minutes. This must be determined through experimentation.

Related Attogene Products Catalog Number:

1. **Protein labeling and purification**
   a. **CO2027** Microspin Desalting Columns 7K MWCO
   b. **CO2028** Protein Biotinylation Kit
2. **Consumables**
   a. **CO2022** Lateral Flow Cassettes (Same as what is provided in this kit)
   b. **CO2033** 96-well Plate
   c. **AU2035** RNase Free Buffer Screening Pack
   d. **AU2054** 4.5mm X 60mm Strips for Lateral Flow Development
3. **Reporter Reagents**
   a. **AU2012** 10nm Colloidal Gold
   b. **AU2013** 30nm Colloidal Gold
   c. **AU2014** 40nm Colloidal Gold
   d. **AU2015** 60nm Colloidal Gold
   e. **AU2016** Protein A Colloidal Gold for Lateral Flow
   f. **AU2017** Streptavidin Colloidal Gold for Lateral Flow
   g. **AU2043** Streptavidin CdSe/ZnS Quantum Dots for Lateral Flow
   h. **AU2050** Streptavidin Europium Beads for Lateral Flow
   i. **AU2055** Streptavidin Phycoerythrin for Lateral Flow

Troubleshooting:

For issues such as sample/buffer not flowing effectively through the cassettes, ensure that strips are aligned properly in the cassette so that the sample port is “sealed” by the sample pad with no visible gaps.

If it becomes evident that spotted reagents aren’t adhering to the nitrocellulose surface. It may be beneficial to add methanol or ethanol at a very low concentration to improve binding kinetics. Ensure reagent’s biocompatibility before adding any organic solvents. Protein or molecules may also need to be attached to a carrier protein such as BSA.

Non-specific results may be induced by a variety of factors such as the LFA running time was too long, buffer is incompatible, reagents are not compatible, or reagents were not blocked sufficiently/correctly etc.

Storage:

All components should be stored at temperatures ranging from 2˚C-RT. To ensure longevity of all components, avoid exposure to extreme temperatures and leave the strips in their provided canisters which contain an integrated desiccant component.

Product Safety and Handling:

Components provided in this kit are for R&D purposes only. This kit is not for use in diagnostic procedures.