

LFA STARTER KIT

CATALOG NUMBER: LFK001

DESCRIPTION

The Ethos+Ahlstrom® Lateral Flow Assay (LFA) Starter Kit includes a selection of necessary components for developing a new lateral flow assay. The user must supply all reagents, buffers, and conjugates. This kit is For Research Use Only. Not for use in diagnostic procedures.

KIT CONTENTS

KIT COMPONENTS SUPPLIED	ETHOS PART NO.	SIZE	QTY
Wick Pad, Ahlstrom 222	RNC082	203.2 x 254mm	1
Conjugate or Sample Pad, Ahlstrom 8950	RNC083	203.2 x 254mm	2
Conjugate or Sample Pad, Ahlstrom 8964	RNC084	203.2 x 254mm	2
Conjugate or Sample Pad, Ahlstrom 8951	RNC085	203.2 x 254mm	2
Nitrocellulose Membrane #1 (high protein binding)	RCH209	25 x 300mm	4
Nitrocellulose Membrane #2 (high protein binding)	RCH179	25 x 300mm	4
Nitrocellulose Membrane #3 (intermediate protein binding)	RCH074	25 x 300mm	4
Nitrocellulose Membrane #4 (low protein binding)	RCH131	25 x 300mm	4
White Vinyl Backing Card	RNC019	62 x 301.58mm	8
Lateral Flow Cassette	RPK038	4.2 x 62mm	100

MATERIALS REQUIRED BUT NOT SUPPLIED

- Buffers, antibodies, conjugates, nanoparticles, and other reagents necessary for preparation and use of lateral flow assays
- Equipment for dispensing conjugate, test lines, and control lines
- Oven for drying
- Test strip cutter
- Card laminator (optional)

RECOMMENDATIONS FOR USE

SAMPLE PAD

The sample pad is the first pad encountered by the sample at the bottom of the strip. The sample pad plays a critical role in filtering impurities, adjusting buffer composition, and ensuring a stable flow rate. Select the preferred sample pad material from the kit and cut to a width of roughly 18.5 mm. The length will depend on the size of the backing card. The sample pad may be pretreated by immersing in a buffer containing surfactants, detergents, and blocking agents followed by drying before use.

PROPERTIES OF SAMPLE AND CONJUGATE PADS

CONJUGATE OR SAMPLE PAD	DESCRIPTION & PROPERTIES	WICKING RATE	WATER ABSORPTION CAPACITY	BASIS WEIGHT	CALIPER	SUGGESTED APPLICATIONS*
Ahlstrom 8950	Chopped Glass w/ Binder	12s/2cm	46mg/cm ²	50g/m ²	0.25mm	Saliva, serum, plasma, nasal samples, stool, extracted food, grains
Ahlstrom 8964	Chopped Glass w/ Binder	5s/2cm	79mg/cm ²	75g/m ²	0.43mm	Saliva
Ahlstrom 8951	Chopped Glass w/ Binder	3s/2cm	63mg/cm ²	75g/m ²	0.38mm	Serum, plasma, extracted food, grains

*The best pad for a given application should be determined by testing.

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CONJUGATE PAD: CONJUGATE DISPENSING

The conjugate pad is the second pad on the strip. It allows for storage and release of dried nanoparticle conjugate into the flowing sample. Select the conjugate pad from the kit and cut it to a width of roughly 8 mm. Dispense the nanoparticle-bioreceptor conjugate of desired OD by immersion or by using a dispenser. Dry the pad completely after dispensing. The buffer composition, the presence of stabilizing reagents (e.g. sucrose or trehalose), and the drying process are critical for the stability of the nanoparticle conjugates. Store the pad dry with desiccant in a zip lock bag until use.

Note: dispensing of the conjugate pad is optional – some tests allow for the conjugate solution to be mixed directly with the sample.

NITROCELLULOSE MEMBRANE: TEST & CONTROL LINE DISPENSING

The membrane is where the signal is generated. Choose the preferred membrane from the kit. Stripe the membrane with test line and control line reagents and dry. The drying time and temperature should be optimized for the striping to allow for reproducible deposition amount. Store the membrane with desiccants in a zip lock bag until use.

PROPERTIES OF MEMBRANES

MEMBRANE	DESCRIPTION & PROPERTIES	WICKING RATE	PORE SIZE	PROTEIN BINDING
Sartorius® CN140	Nitrocellulose w/ polyester backing	95 - 155s/4cm		
MDI 150CNPH-N-SS40	Nitrocellulose w/ polyester backing	150s/4cm		Highest
MDI CNPF-SN12	Nitrocellulose w/ polyester backing	125s/4cm	10µm	≥ 30µg/cm ²
MDI CNPC-SS12	Nitrocellulose w/ polyester backing	100s/4cm	15µm	≥ 30µg/cm ²

*The best pad for a given application should be determined by testing.

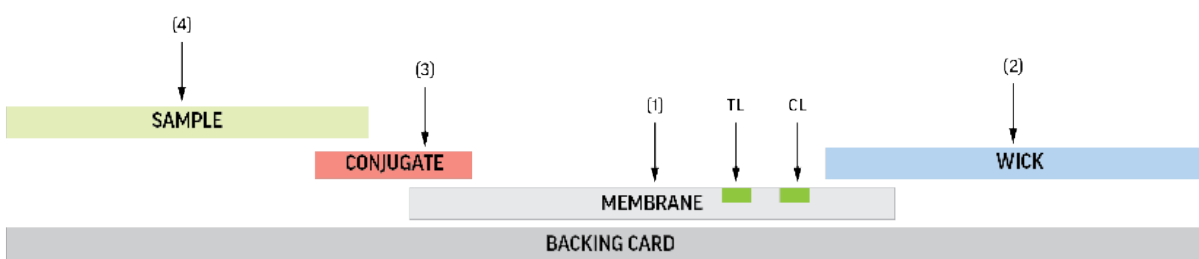
WICK PAD

The wick pad (absorbent pad or top pad) absorbs excess reagents at the top of the strip. It establishes the overall volume of sample the strip can handle. A cotton wick pad is provided and should be adequate for most applications. Cut to a width of approximately 20 mm. The length will depend on the size of the backing card. The wick pad is ready to use – no pretreatment necessary.

ASSEMBLE COMPONENTS ON BACKING CARD

The backing card has guides to direct the assembly of the components. The liner guides are peeled off and then the components are attached. The pads are typically pretreated before assembly on the backing card. The components should overlap as shown in the schematic. If available, a card laminator can be used for assembly.

1. First, mount the membrane on the backing card.
2. Next, position the wick pad to one end of the card, overlapping with the membrane.
3. The conjugate pad is then mounted, overlapping with the membrane.
4. Finally, the sample pad is mounted, overlapping with the opposite end of the conjugate pad.
5. Cut the assembled card into 4 mm width strips.
6. Load the strip into the cassette (Cassette is not required for dipstick tests).



Schematic of card assembly steps. Drawing not to scale.

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ETHOS LATERAL FLOW



AHLSTROM LATERAL FLOW TEST PADS

TRADEMARKS:

Ethos Biosciences: Ethos Biosciences™

Ahlstrom Oyj: Ahlstrom®

Sartorius AG: Sartorius®

PRODUCT INFORMATION

Cat. #	Description
LFK001	LFA Starter Kit

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