

## Lateral Flow Material Starter Kit

Product Number: MSKR

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Since the requirement for the strip dimension and specification will vary from assay to assay, the following procedure only provides a general method for preparing a basic lateral flow strip. Note that the strip dimension used in this procedure is just a starting point/example. Some components of the kit such as the wick pad, conjugate pad, and sample pad are provided at 20 cm × 30 cm to give you the flexibility to customize to the appropriate length based on the needs of each assay.

### MATERIALS PROVIDED

- Nitrocellulose membrane
- Wick pad
- Sample pad
- Conjugate pad
- Backing card
- Foil pouch (for strips storage)
- Zip bags (for membrane and pads storage)
- Desiccants

### MATERIALS & EQUIPMENT REQUIRED (NOT SUPPLIED)

- Dispenser/machine for spraying conjugate and striping membrane
- Forced air oven
- Desiccator cabinet, dry box, or humidity- and temperature-controlled environment (dry room)
- Guillotine cutter (for cutting strips)
- Proteins or reagents used for membrane striping and gold conjugation
- Gold nanoparticles for conjugation (see our Covalent Conjugation Kit)
- Any other buffers or reagents used to run strips

### MEMBRANE STRIPING

Select the membrane(s) of choice from the Material Starter Kit and dispense the protein or antibody at the desired rate and concentration. Make sure to mark the **Control Line** and **Test Line** positions and label the membrane grade. Dry the membrane for about 30 minutes in a forced air oven at 37 °C. Store membrane in the provided 3" × 14" zip bag in a desiccated environment until use.

**Note:** The drying time and temperature can be adjusted per each assay's requirements.

### CONJUGATION DISPENSING

Select the conjugate pad material(s) of choice from the Material Starter Kit and cut the pad to a width of 10 mm. Dispense the gold conjugate at the desired rate and OD/concentration. Make sure to label the conjugate pad with the rate/OD and material type accordingly. Dry the pads in a forced air oven for about 1 hour at 37 °C, and then store the conjugate pad in the provided zip bag, in a desiccated environment until use.

**Note:** The drying time and temperature can be adjusted per each assay's requirements.

Alternatively, you can skip the conjugate dispensing step if you would like to run the strip with wet/liquid conjugate. Just cut the conjugate pad to the desired width and proceed to preparing the other materials.

### SAMPLE PAD & WICK PAD PREPARATION

Choose the desired sample pad material(s) from the Material Starter Kit. Cut the sample pad to a width of 18 mm. Make sure not to apply too much pressure or not to crush the sample pad since that can compromise the structure

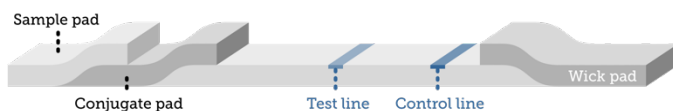
of the pad fiber, especially if using a blood separation material.

Cut the wick pad to a width of 18 mm.

## CARD ASSEMBLY

The backing card has different slits to help direct the placement of each component. You can either use these slits as a guide, or you can change the position of the material to the appropriate position per your assay's requirements.

1. First, peel off the liner for the membrane to expose the adhesive. *Do not discard this liner.*
2. Position the membrane along the bottom slit and make sure it's aligned across the card.
3. Place the shiny side of the liner on top of the membrane and run your finger lightly across the membrane. This is to make sure the membrane is completely adhered onto the backing card.
4. Next, peel off the liner for the wick pad and keep this liner.
5. Align the wick pad along the top edge of the card.
6. Place the shiny side of the liner on top of the wick pad and run your finger across the pad.
7. Peel off the conjugate pad liner.
8. Align the conjugate pad along the bottom slit, making sure it overlaps the membrane by 1–2 mm.
9. Place the shiny side of the liner on top of the conjugate pad and run your finger across the pad.
10. Finally, peel off the sample pad liner and align the sample pad along the bottom edge of the card.
11. Place the shiny side of the liner on top of the sample pad and run your finger lightly across the pad.
12. Once all the components are assembled on the card, check to make sure all the materials are overlapped as follows:



Alternatively, you can use a card laminator to help with the assembly process.

## STRIP CUTTING

A typical lateral flow strip is around 4–5 mm in width, but you can design your strip at any width per the assay's specifications. Use a guillotine cutter to set the desired width for your strip and begin cutting.

## ADDITIONAL RESOURCES

For more information on conjugation techniques and lateral flow assay development, visit [ncx.bz/br](http://ncx.bz/br)

Watch our webinars and video tutorials related to bioconjugation and lateral flow at [ncx.bz/kb](http://ncx.bz/kb)

For inquiries regarding custom conjugation or determining which gold product is right for you, contact [info@nanocomposix.com](mailto:info@nanocomposix.com)

For technical assistance, contact (858) 565-4227 or email us at: [techsupport@nanocomposix.com](mailto:techsupport@nanocomposix.com)