

ELISA Model
Indirect Assay
Influenza Outbreak Investigation Kit

Parts List

10cm petri dishes

Velcro sticky back white circles, 5/8" diam, 15 circles/pack

Velcro think clear fasteners, 3/8" diam, 56 circles/pack

Wooden spools – Craft wood 3/4" x 5/8" spools, 10pcs #9110-61

Wooden spools - Craft wood 1/2" x 5/8" spools, 40pcs #911-52

Wooden stars – Loew Cornell Simply Art, 130 stars in var sizes, #1021196

Furniture button – Craft wood 100pcs, 3/8" diam, #9119-20

Adhesive backed magnets, 12pc, round, 0.5" diam

Round metal washer, 5/8" diam

Grafix Cling Vinyl, 6 colored sheets, 9" x 12"

Super glue

Spray paint – red, yellow, light purple

All supplies were purchased at JoAnn Crafts except the metal washers (Hardware Store)

Model Assembly

Flu Antigen (protein)

1. Spray paint the appropriate number of wooden stars yellow.
2. Super glue 2 of the stars to one side of a petri dish (which represents a well in a 96w plate).



Blocker

1. Cut strips of cling vinyl (any color) that are 1" wide.
2. Cut these strips into ½" wide pieces.



Primary (anti-Flu) Antibody

1. Spray paint the appropriate number of wooden spools (either size) pink.
2. Glue a metal washer on one end.
3. On the other end stick a white 5/8" diam circle of the fuzzy side of Velcro.
4. Draw a stick figure Ab onto the spool (Fc region at Velcro end, variable region at washer end).



Non-Flu Antibody

1. Spray paint the appropriate number of wooden spools (either size) red.
2. Stick a white 5/8" diam circle of the fuzzy side of Velcro on one end.
3. Draw a stick figure Ab onto the spool (Fc region at Velcro end, variable region at other end).

2° Antibody

1. Spray paint the appropriate number of wooden spools (either size) light purple.
2. Stick white 5/8" diam circles of the spiky side of Velcro to one end of the spool.
3. Glue a wooden furniture button to the other end of the spool.
4. Draw the stick diagram of the Ab structure on the side of the spool – variable regions at the end where the Velcro is.
5. Draw a scissors on the top of the furniture button (to represent the HRP enzyme).

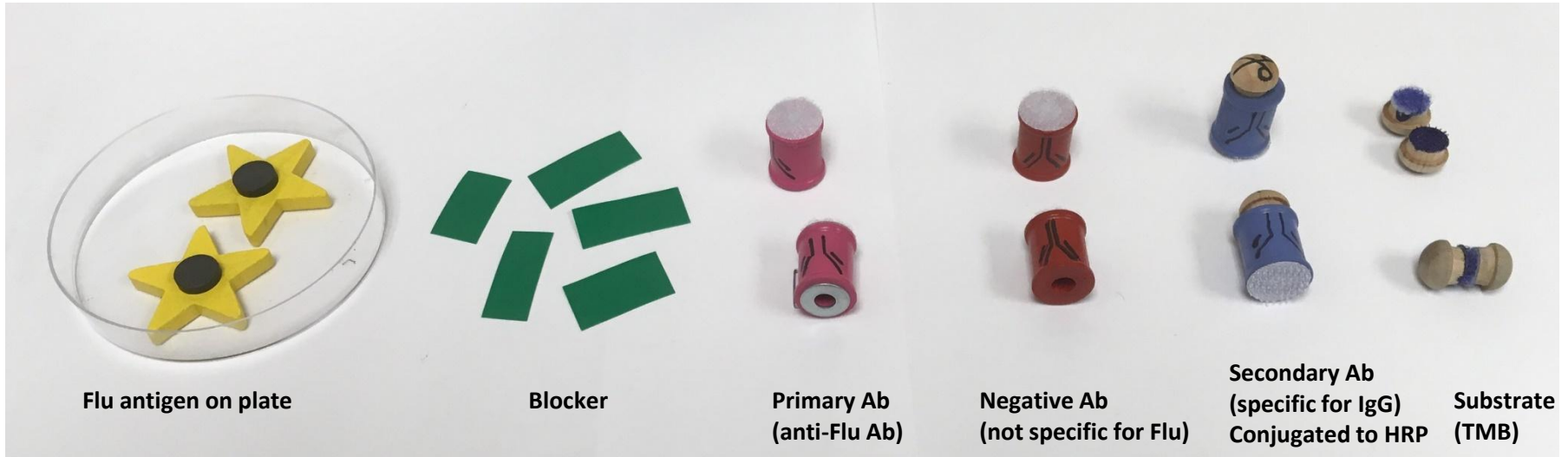


Substrate (TMB)

1. Stick one of the clear Velcro fasteners (spiky side) to the flat side of a furniture button.
2. Stick one of the clear Velcro fasteners (fuzzy side) to the flat side of a furniture button.
3. Color the Velcro blue with a sharpie.
4. Stick the two furniture buttons together to represent un-cleaved substrate.

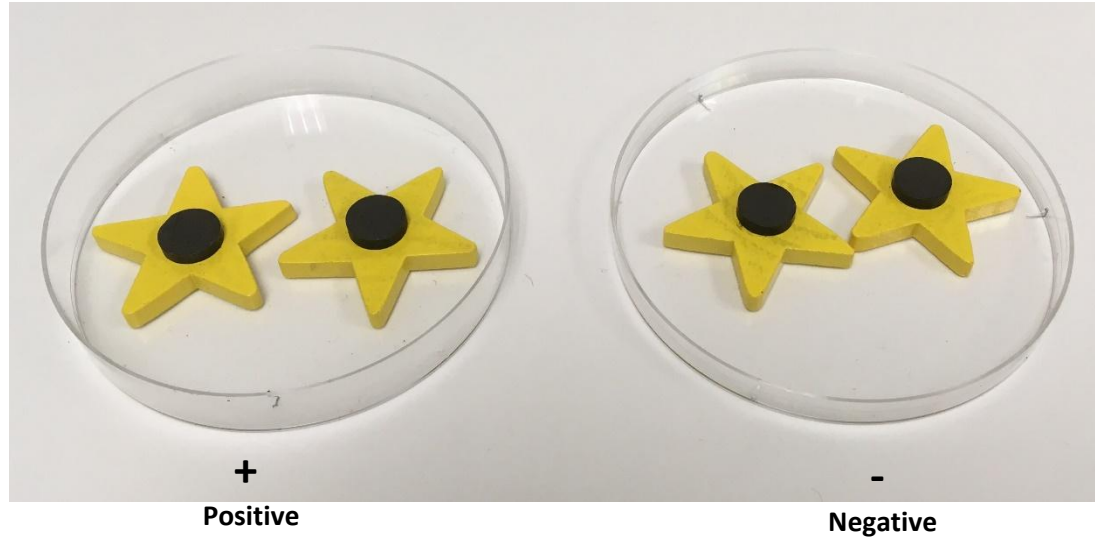


Assembled ELISA Components

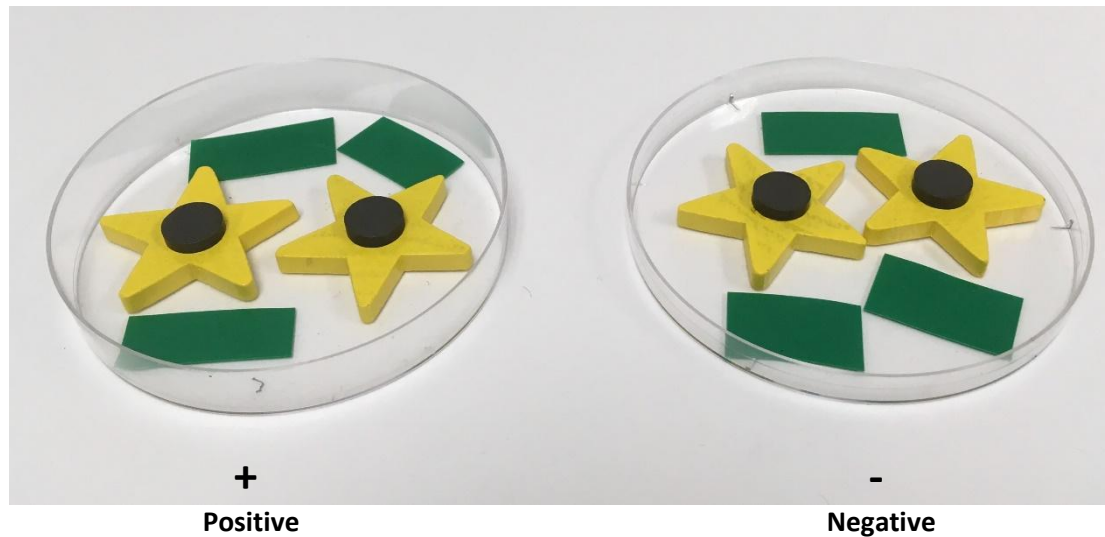


Coating with Flu Antigen Blocking

Coat plate with
Flu antigen (protein)



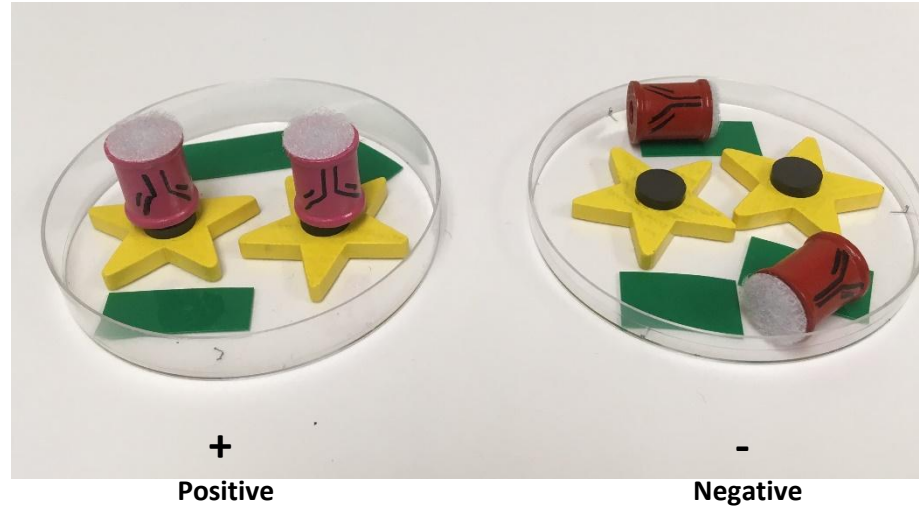
Block



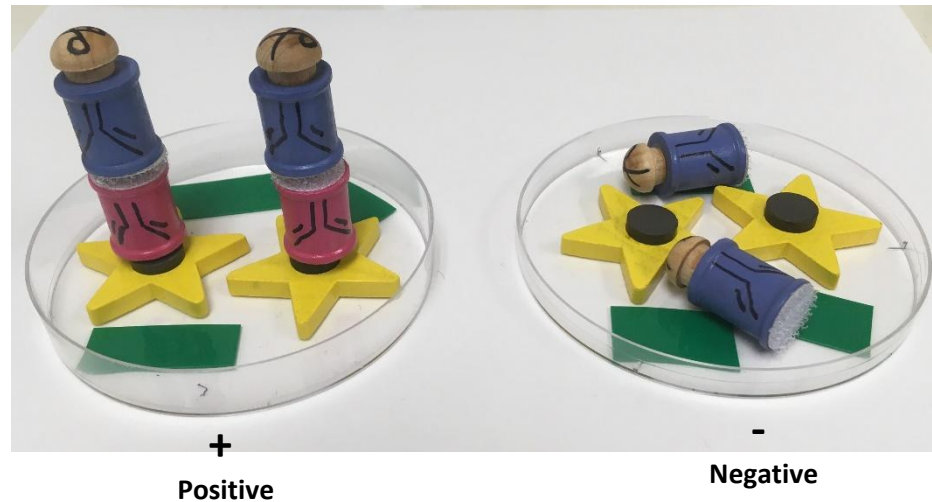
Addition of experimental samples (+/- Biomarker)

Addition of 2° Ab

Add samples +/-
anti-Flu antibody
(primary antibody)



Add 2° Ab conjugated to HRP



Addition of Substrate (TMB)

Add substrate

