Complement Fixation Assay

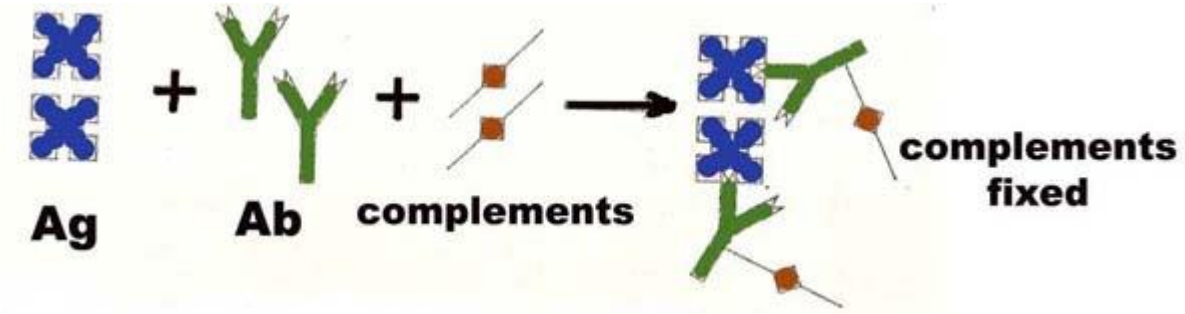
used to detect a patient serum antibody, so an ANTIGEN that is recognized by that antibody is the first reagent shown.

- Antigen (It may be suspicious or known)
- Antibody (It may be suspicious or known)
- Complement (Fresh guinea pig serum)
- The complement fixation assay indicator system uses sheep red blood cells (SRBC) and anti-SRBC antibody.

- The complement system is a set of over 20 different protein molecules always found in the blood. There are no cells in the system. With an infection, this system of molecules is activated, leading to a sequence of events on the **surface of the pathogen** that helps destroy the pathogen and eliminate the infection.
- The complement can not bind to only the antibody or the antigen. However, it is capable of binding to the antigen-antibody complex.

Uses

- 1. Antigen identification
- (Suspected virus, known serum)
- 2. Detection of antibody presence / vibration
- (Known virus / suspected serum)

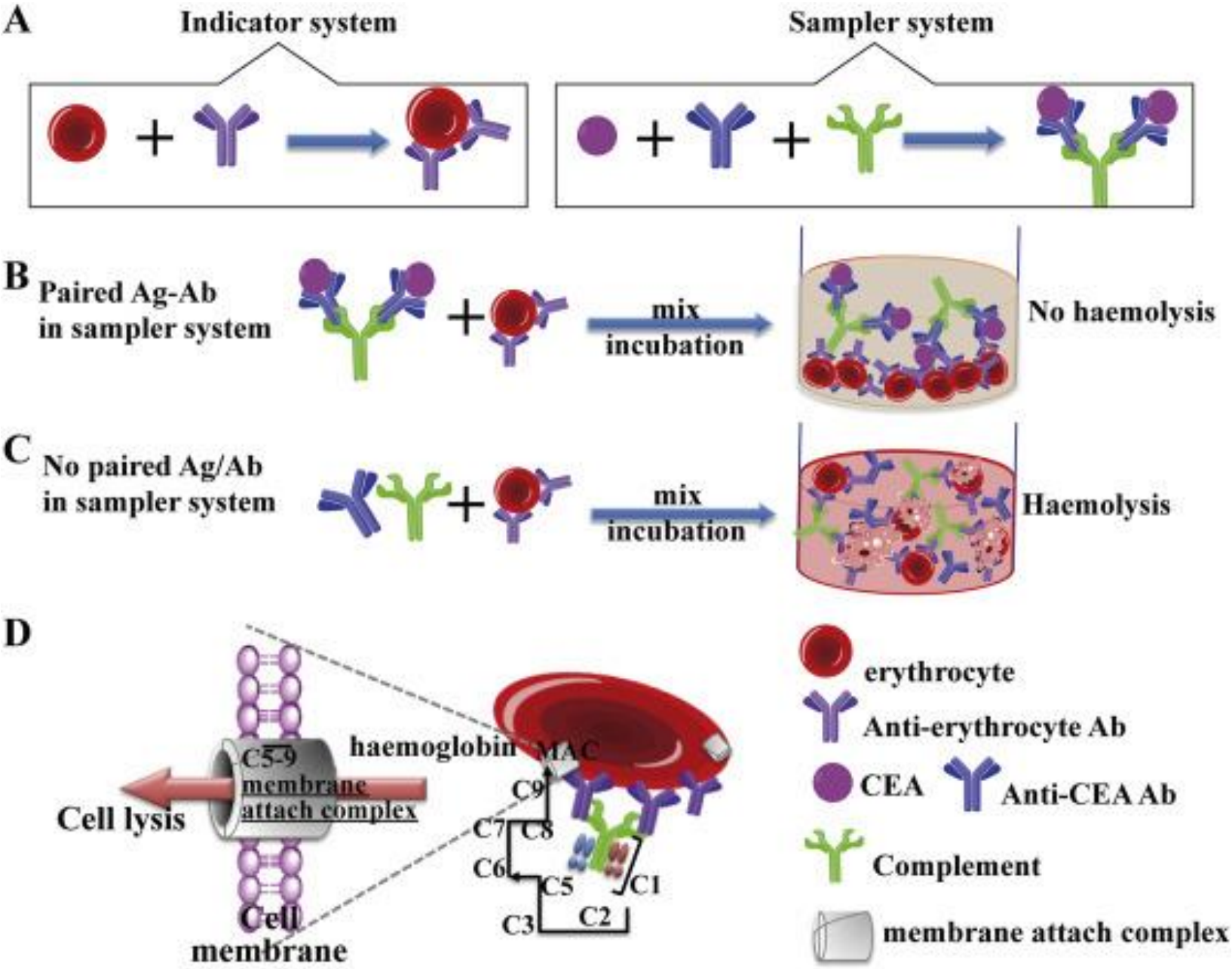


http://biosiva.50webs.org/compft.htm

If the antibody is present in the patient's serum it binds to the antigen, and the complement reagent is completely consumed in the reaction. (The test can also be used to look for antigen in the serum by modifying the reagents used).

- Protocol

- Antigen, antibody and complement are introduced by putting in a tube. And incubated.
- At the end of the time sheep red blood cells (SRBC) (Sheep erythrocyte + amboseptor) were added and incubated.
- The test is evaluated.

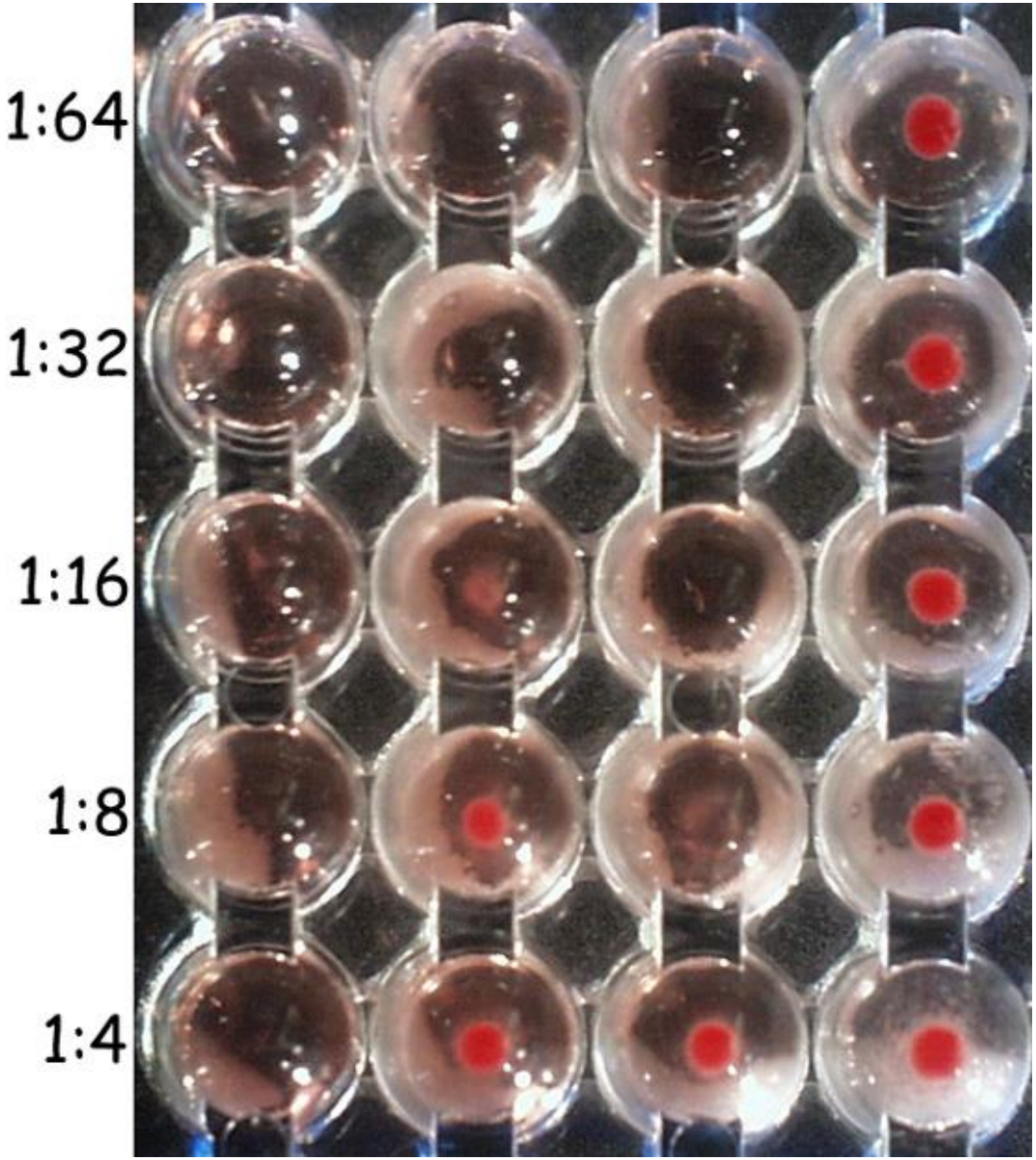


Li, M., Shi, Z., Fang, C., Gao, A., Li, C. M., & Yu, L. (2016). Versatile microfluidic complement fixation test for disease biomarker detection. *Analytica chimica acta*, *916*, 67-76.

Suspected virus	Hemolysis	KFT
Ab spesific	(-)	(+)
Ab non specific	(+)	(-)

Serum (Ab)	Hemolysis	KFT
Ag spesific	(-)	(+)
Ag non specific	(+)	(-)

Complement Fixation Test for bovine herpesvirus (infectious bovine rhinotracheitis)



from left to right, the samples are:

(1) negative
(2) positive at 1:8
(3) positive at 1:4
(4) positive at >1:64