

Complement

System of hepatically synthesized plasma proteins that play a role in innate immunity and inflammation. Membrane attack complex (MAC) defends against gram \ominus bacteria.

ACTIVATION PATHWAYS

Classic—IgG or IgM mediated.

GM makes **classic** cars.

Alternative—microbe surface molecules.

Lectin—mannose or other sugars on microbe surface.

FUNCTIONS

C3b—opsonization.

C3b binds **bacteria**.

C3a, C4a, C5a—anaphylaxis.

C5a—neutrophil chemotaxis.

C5b-9—cytolysis by MAC.

Opsonins—C3b and IgG are the two 1° opsonins in bacterial defense; enhance phagocytosis. C3b also helps clear immune complexes.

Inhibitors—decay-accelerating factor (DAF, aka CD55) and C1 esterase inhibitor help prevent complement activation on self cells (eg, RBCs).

