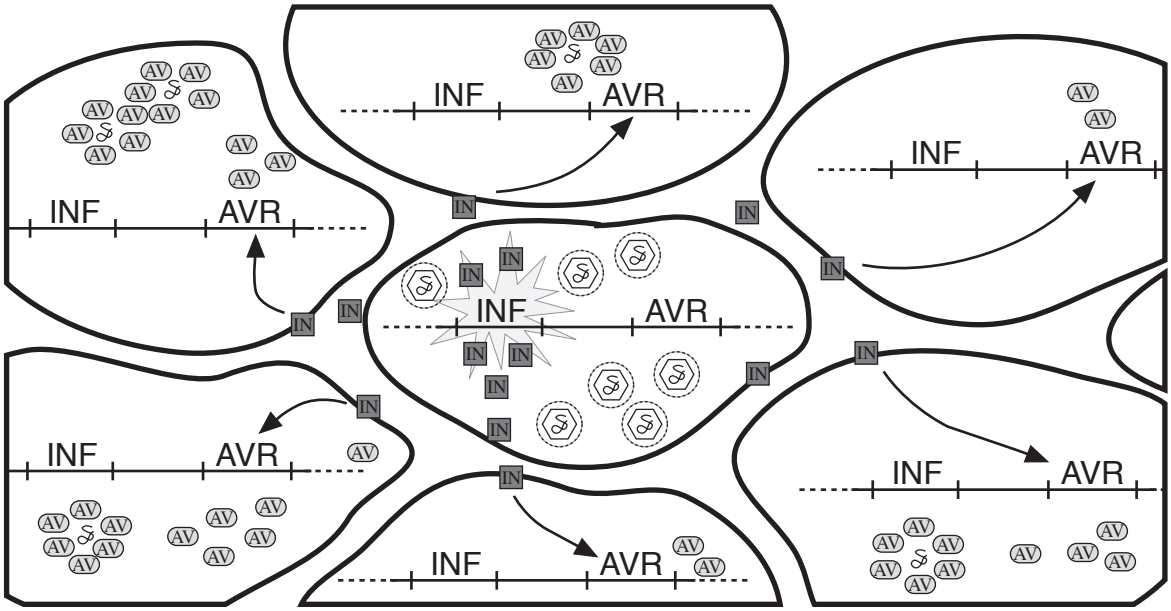
INTERFERON



INF — Interferon Gene

AVR — Anti Viral Replication Protein Gene

IN — Interferon

AV — Anti Viral Replication Proteins

Mature Viral Particles

Viral Genetic Material

Viral Genetic Material activity disrupted by Anti Viral Replication Proteins

Above, one notes a number of body cells, all of which have two genes that work together to stop viral infections from progressing within the host. The first gene is the "INF" gene, or interferon gene; and the second is the "AVR" gene, or anti-viral replication protein gene. The "INF" gene is expressed when a cell is virally infected. Although the infected cell will likely die as a result of the infection, the doomed cell will produce interferon (INF) which will leave the cell and bind to receptors on the surface of neighboring cells. The neighboring cells then respond by producing anti-viral replication proteins. The presence of these proteins within uninfected cells will interfere with viral replication should a viral particle penetrate it. Therefore, the spread of the virus within the body is halted.

Eventually, the initially infected cell bursts, releasing hundreds of mature viral particles. When these particles infect the neighboring cells, and the genetic material of the viral particles is released into the cells, the anti-viral replication proteins interfere with the viral life cycle by inhibiting RNA synthesis.

Interestingly, once someone has had a viral infection, there is a "window of time" where they can not be virally infected. This is actually where the name "interferon" originally came from: when it was noted that a viral infection interfered with new potential infections. Obviously, there is much interest in exploiting interferon for medicinal purpose. Unfortunately, the utility of using interferon for medicinal or prophylactic purposes is limited; although use against inhibiting one form of leukemia, genital warts, and hepatitis B has proven effective. Research continues!