**Protective Antigen**

1. This term has several meanings.

2. One example is the anthrax toxin. It is composed of three parts that each play a role in destroying the cell (PA or protective is the first). The antigen is called protective because it is protected from immune destruction once inside the cell membrane.

3. Some antigens are called protective because they are not recognized as foreign by the body and thus confer protection for the organsim.

**Adhesion Antigen**

1. Many organisms have surface molecules (antigens) which help the organism adhere to surfaces without the aid of fimbriae. Several Streptococcus which are responsible for dental carries are known to or believed to possess these antigens.

2. Malarial infected red cells acquire antigens on their surface produced by the organism which allow the red cell to adhere to cell surfaces.

3. Many of these antigens attach to sugar residues on the surface of endothelial cells.

4. Secretor saliva and purified ABO antigens reduced the level of yeast adhesion to Buccal cells to almost 50% compared with non-secretor saliva.

**Iron Uptake Systems**

**Organisms require iron but have a hard time obtaining it in forms they can utilize. Organisms that have developed mechanisms which deal with this problem tend to be more pathogenic for man. Both Yersinia pestis and Neisseria meningitides have evolved systems.**