



Lec ٥- Relationships of microorganisms with the host

- Host defenses in the mouth:
 - Epithelial cells:
 - ✦ Barrier function;
 - ✦ Innate immunity - sensors (Toll-like receptors);
 - Inflammatory mediators, antimicrobial peptides;
 - Salivary antimicrobial factors - DENT ٥٣٠٢;
 - Mucosal antibodies (secretory IgA);
 - Cell-mediated immunity (T-cells);
- In most cases, host defenses tolerate oral bacteria
 - The predominant relationships are commensal.

Host defense mechanisms

- Removing the microorganisms through stimulation of salivary flow;
- Specific protection:
 - SIg A;
- Nonspecific protection:
 - Mucin;
 - Antimicrobial factors:
 - ✦ Lysozyme;
 - ✦ Lactoferrin;
 - ✦ Salivary peroxidase;
 - ✦ Histatine-rich peptides;
 - ✦ Cistatin;
 - ✦ Leukocytes;
 - ✦ Complement.



Removing of the microorganisms

- The majority of microorganisms in the mouth is removed by washing action of saliva;
- Salivary flow is stimulated by muscle activity of lips and tongue.

Specific protection - Secretory IgA system

- SIgA-antibodies reduce microbial adhesion to enamel epithelium and through:
 - Neutralizing enzymes microorganisms;
 - Neutralize toxins and viruses;
 - Synergy with other antibacterial agents such as lysozyme, lactoferrin, peroxidase and mucin;
- Protects the mucosa of penetration of antigens;
- Helps complement activation.

Mucin

- Provides a protective coating of enamel and mucosa;
- Catches microorganisms and antigens like in a trap;
- Limits microorganisms penetration into tissues;
- Eliminates microorganisms with continuous updating of mucin layer combined with washing action of saliva flow;
- As part of pellicula protects teeth from demineralization.

