

CONCEPT: LIQUID CHEMICALS: ALCOHOLS, ALDEHYDES, & BIGUANIDES

Alcohols

- _____: organic compound that has at least one *hydroxyl* (-____) bound to a hydrogen-saturated carbon atom.
 - Used as a *disinfectant* for treating surfaces & an *antiseptic* for cleaning skin before a surgery.
 - _____ proteins & damages cytoplasmic lipid membranes of microorganisms.
 - More effective when _____ to a concentration of **60-80%** in water.
 - **Tinctures**: a medicine or chemical disinfectant (ex. iodine) dissolved in an _____-based solution.

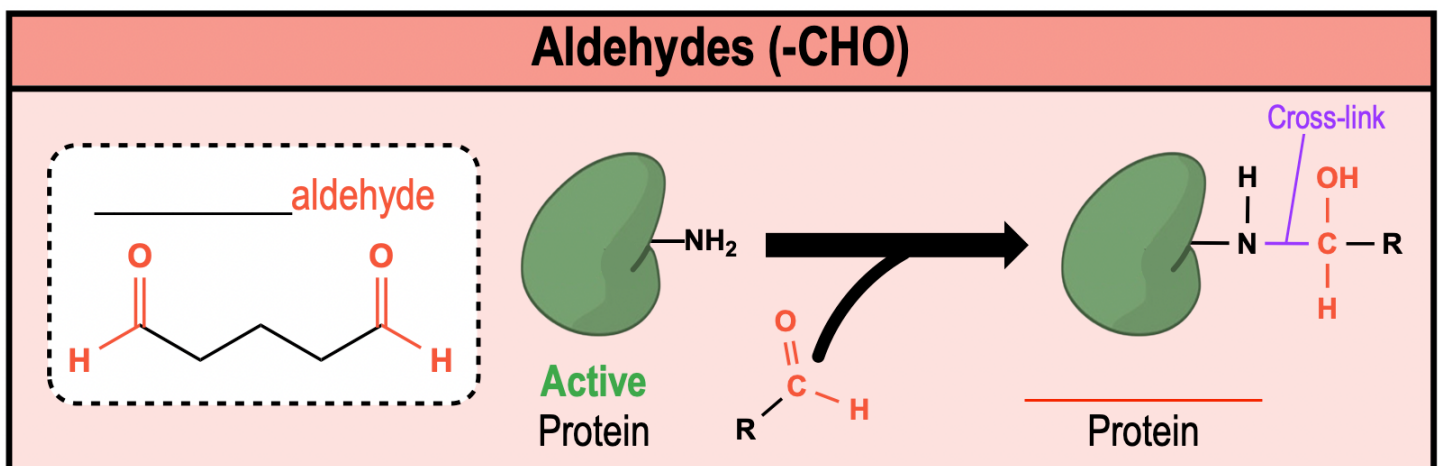


PRACTICE: Alcohols are not reliably effective at destroying:

- | | | |
|-------------------------|---------------------------|-----------|
| a) Vegetative bacteria. | c) Endospores. | e) C & D. |
| b) Enveloped viruses. | d) Non-enveloped viruses. | f) A & B. |

Aldehydes

- **Aldehydes**: any organic compound that has at least one *aldehyde* (-CHO) functional group.
 - *Sterilant* that diffuse across membranes & forms _____-cross-links with amino acids to *inactivate* proteins.
 - Requires _____ treatment time (up to 12 hours) for endospores but *short* time (10 minutes) for vegetative cells.
 - Many aldehydes such as *Glutaraldehyde* & *Formaldehyde* (gas) must be _____ before use.



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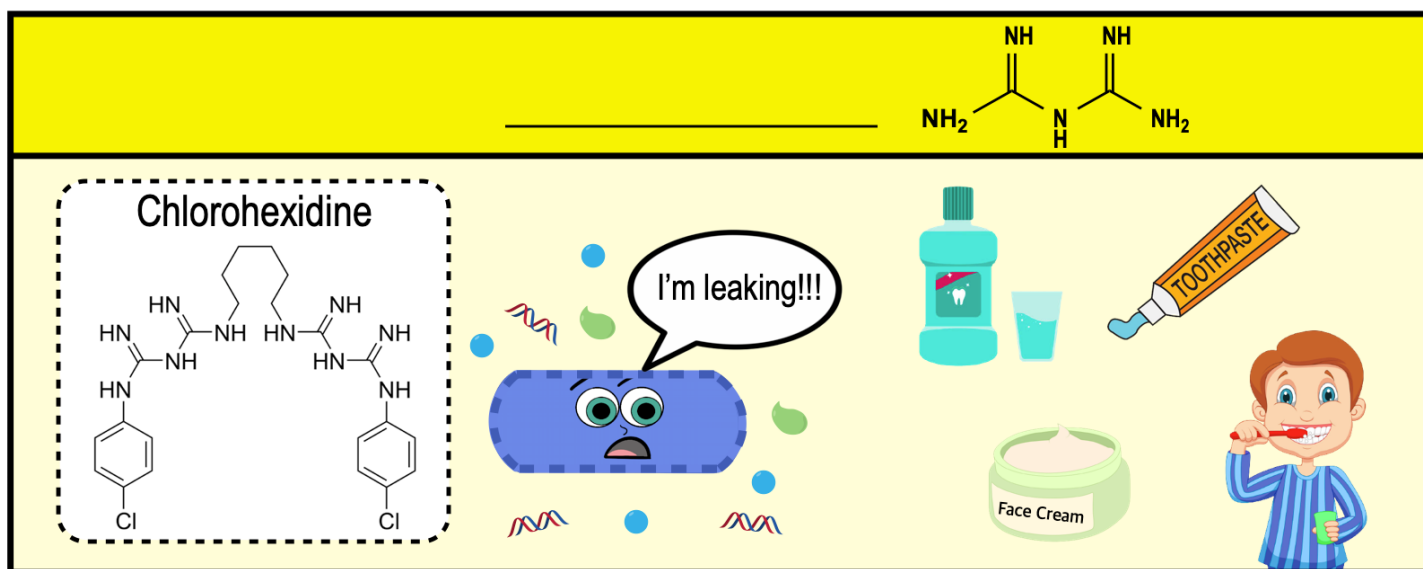
PRACTICE: Glutaraldehyde:

- a) Is, if given enough time, able to destroy all forms of microbial life.
- b) Forms cross-links with active proteins rendering them inactive.
- c) Disrupts and damages lipid membranes.
- d) Is able to destroy one of the hardest types of microbes to kill, endospores.
- e) All of the above.

Biguanides

● **Biguanides:** group of chemicals derived from the molecule _____ ($C_2H_7N_5$).

- ☐ Primarily affect membranes of _____ cells causing them to *leak* small molecules & proteins.
- ☐ The most common chemical in this group used as an *antiseptic* is _____.
- ☐ **Chlorohexidine** is commonly used to treat infections on the _____ or mucous membrane.
- ☐ Also used in prescription mouthwashes, toothpastes & antiseptic creams.



PRACTICE: Chlorohexidine:

- a) Is a member of the biguanides group.
- b) Is extensively used as an antiseptic.
- c) Is ineffective against vegetative cells.
- d) Is limited in use due to its high toxicity.
- e) A and B.
- f) C and D.