

Bioactive wound dressings are incorporated with antimicrobials and growth factors for accelerated wound dressings. They are used for the treatment of chronic wounds such as pressure ulcers and diabetic foot ulcers. They can overcome microbial infections and promote healing. Examples of bioactive dressings are hydrocolloids, collagens, alginates, hydrofibers, and chitosan. [25,29]. Examples of antibiotics incorporated into wound dressings are shown in Fig. 3A and B. Polymer-based wound dressings have been designed and incorporated with antimicrobials agents (Fig. 3C).

3.1. Hydrogels

Hydrogels are cross-linked polymeric networks prepared by the reaction of monomers (Fig. 4). They exhibit a good capability to swell and sustain a significant amount of water within their network but they do not dissolve in water. They are characterized by good flexibility which is similar to natural tissue. Their ability to absorb water is attributed to the presence of hydrophilic functional groups in the polymeric backbone and their inability to dissolve in water is due to the cross-linking between network chains [31]. Factors that affect the

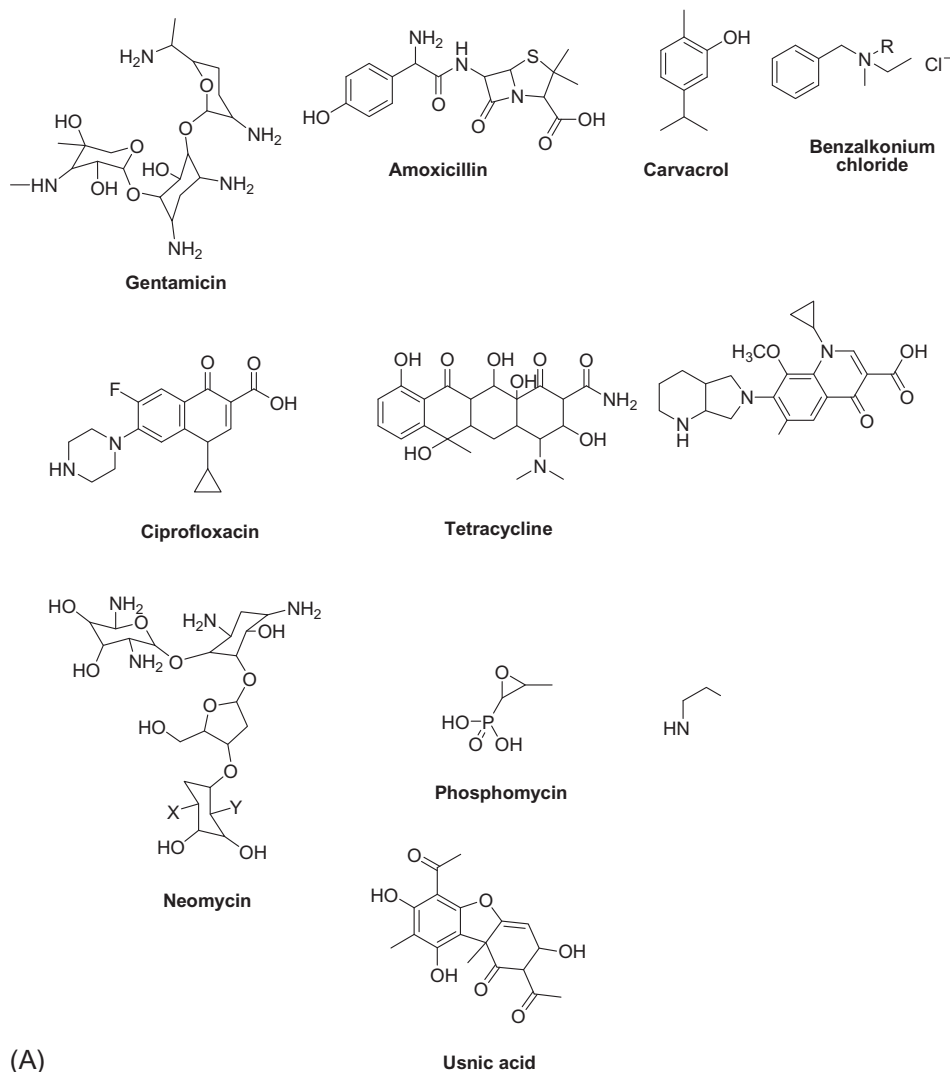


FIG. 3 (A) Structure of some antibiotics loaded to polymer-based wound dressings.

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