CO-releasing polymers exert antimicrobial activity

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Infectious diseases still remain one of the leading causes of death worldwide despite tremendous efforts that have devoted to the design and development of antimicrobial agents. However, the decrease in the effectiveness of some currently used antimicrobial agents, especially antibiotics, often associated with the development of drug resistance by pathogen, leads to an urgent need for the development of new classes of therapeutic approach that avoid the development of drug resistance. Recently, there is evidence that the biological signaling molecule carbon monoxide (CO) has promising effects on bacteria. Herein, we report the design and synthesis of a new class of water–soluble CO-releasing polymers that showing great efficiency in preventing biofilm formation and decreasing the viability of P. aeruginosa. This study paves the way for the potential use of CO-releasing polymers as novel antimicrobial agents.