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Nanodevices for delivery of therapeutics to cystic fibrosis patients

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 $P_{(CF)}$, *Pseudomonas aeruginosa* is a pathogen commonly present in the lungs of patients with chronic airway infection in cystic fibrosis (CF). Pseudomonas aeruginosa produces proteins called proteases that are associated with virulence and disease progression. These proteases were recently shown to recognize and specifically cleave peptides comprising three glycines (3xGly). We believe that this feature can be used to facilitate the specific site-specific delivery of theraupetic agents to the lungs of CF patients. More specifically, nanoparticles capped with 3xGly peptides will release the loaded content only upon proteolytic activity of P. aeruginosa present in the lungs thus providing site specific release of the drug. Furthermore, we have studied the potential of nanoparticles for delivery of antibacterials to gram-negatives to eradicate P. aeruginosa infection in in vitro models for host-pathogen interactions in the lungs.

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