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## Synthesis of antimicrobial peptide-grafted graphene oxide nanosheets with high antimicrobial efficacy

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### Abstract

Graphene nanomaterials have rapidly developed in recent years. However, its antimicrobial activity does not achieve satisfactory effect. During the past years, it has been found that antimicrobial peptides (AMP) have a good inhibitory effect on pathogenic microbes. In this study, we synthesized AMP-grafted graphene oxide (GO) nanosheets, i.e., D28@GO, against the pathogens such as *Candida albicans* and *Escherichia coli*. Growth inhibition assays showed that D28@GO had strong inhibitory effect against the pathogens and this toxicity contributes to cell membrane damage caused by interaction between D28@GO and macromolecules. *In vivo* experiments further showed that D28@GO severely suppressed systemic infections of pathogens. This study provides novel light on development of GO-based antimicrobial materials.

### Keywords

Graphene oxide; Antimicrobial peptides; Nanosheet; Adsorption.

### 1. Introduction

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