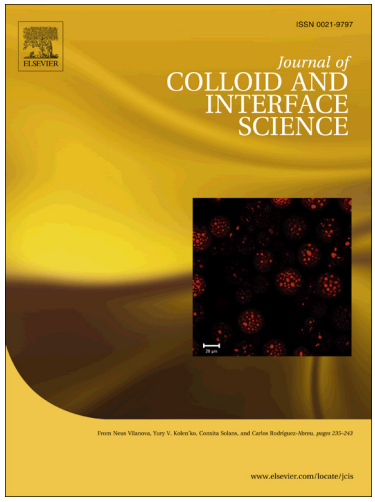

Regular Article

Antifouling zwitterionic hydrogel coating improves hemocompatibility of activated carbon hemoadsorbent

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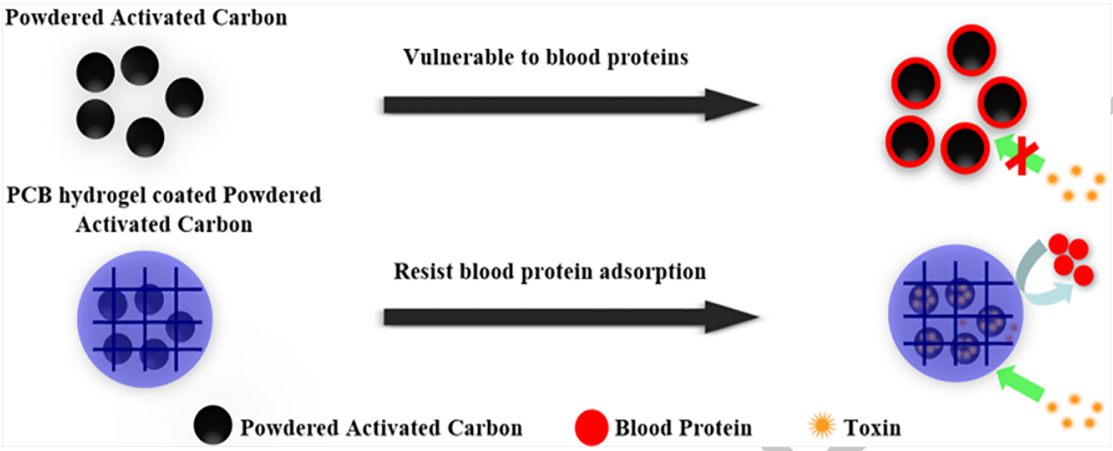
Graphical abstract



Antifouling zwitterionic hydrogel coating improves hemocompatibility of activated carbon hemoadsorbent

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Abstract

Activated carbon has been widely used in hemoperfusion treatments. However, its performance has been significantly compromised by their poor hemocompatibility. In this work, we developed a novel antifouling adsorbent based on zwitterionic poly-carboxybetaine (PCB) hydrogel and powdered activated carbon (PAC) to improve hemocompatibility. We found this new adsorbent (PCB-PAC) was highly stable with negligible leakage of activated carbon debris. It could efficiently resist protein adsorption and avoid any hemolysis effect. The adsorption performance of PCB-PAC for methylene blue was not influenced in a single protein solution or even in 100%