

ANTI-CYANOBACTERIA RECOMBINANT ANTIBODY POLYPEPTIDE, GENE  
THEREOF, AND PREPARATION METHOD THEREOF

**Abstract**

Provided are a hybridoma cell CGMCC No.4783 that secretes a monoclonal antibody of an anti-cyanobacteria cell surface antigen, and the secreted monoclonal antibody thereof. Also provided are an anti-cyanobacteria recombinant antibody polypeptide, encoding gene, preparation method and use thereof. The anti-cyanobacteria recombinant antibody polypeptide is composed of an anti-cyanobacteria antibody mimetic polypeptide operably linearly connecting to the carboxyl terminal of an Escherichia coli polypeptide. The anti-cyanobacteria antibody mimetic polypeptide is a polypeptide with cyanobacteria identifying and binding capability designed based on an antigen binding fragment of the monoclonal antibody secreted by the CGMCC No.4783 hybridoma cell. The anti-cyanobacteria recombinant antibody polypeptide directly form an ion channel on the cell membrane of a cyanobacteria to kill the cyanobacteria, targeted killing the cyanobacteria (prokaryote) without killing other beneficial eukaryotic cell algae.

(No figure to accompany abstract)