

## ABSTRACT

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A fusion protein containing an anti-TIGIT antibody and TGF- $\beta$ R, and a pharmaceutical composition and the use thereof. Specifically, disclosed is a fusion protein containing a first protein functional region for targeting TIGIT, and a second protein functional region having a TGF- $\beta$  binding activity, wherein the first protein functional region is an anti-TIGIT antibody or an antigen-binding fragment thereof; and the heavy chain variable region of the anti-TIGIT antibody contains HCDR1-HCDR3 with amino acid sequences as respectively shown in SEQ ID NOs: 3-5, and the light chain variable region thereof contains LCDR1-LCDR3 with amino acid sequences as respectively shown in SEQ ID NOs: 8-10. The fusion protein can simultaneously inhibit TIGIT and reduce the TGF- $\beta$  level, and has good potential for preparing an anti-tumor drug.

FIG. 7