

SINGLE-DOMAIN ANTIBODY SPECIFICALLY BINDING TO CLL1 PROTEIN AND USE THEREOF

ABSTRACT

The application discloses single-domain antibodies binding to the CLL1 protein and their uses. Specifically, it discloses a single-domain antibody with the amino acid sequence of SEQ ID No.1. This single-domain antibody exhibits high affinity and can effectively and specifically target CLL1-positive cells. It can efficiently promote the secretion of IFN γ by NK cells, activate the effector functions of NK cells, and significantly induce the cytotoxic effects of NK cells, thereby demonstrating a strong capacity for specifically killing CLL1-positive cells. The single-domain antibody of the present disclosure can be formulated into drugs for the clinical prevention or treatment of diseases related to the CLL1 target. It can also be used for the preparation of CAR cells targeting CLL1 or detection kits for the CLL1 protein. The single-domain antibody drug of the present disclosure features stable structure, small molecular size, ease of recombinant expression, and low production costs. It can be used alone or serve as a drug delivery system to carry relevant drugs, holding great promise and significant importance in fields such as pharmaceutical uses and clinical diagnosis.

Fig. 1