

ABSTRACT

RECOMBINANT COLLAGEN AND PREPARATION METHOD AND USE THEREOF

The present disclosure relates to a recombinant collagen and a preparation method and use thereof, and in particular to a full-length collagen $\alpha 1$ chain produced through recombinant expression, and a preparation method and use thereof. The present disclosure belongs to the technical field of collagen expression. When a variant (which is denoted as $\alpha 1$ (I) M1) of a human type I collagen $\alpha 1$ chain ($\alpha 1$ (I) chain) and a variant (which is denoted as $\alpha 1$ (II) M6) of a human type II collagen $\alpha 1$ chain ($\alpha 1$ (II) chain) constructed in the present disclosure are produced through recombinant expression in *Pichia pastoris*, a main degradation product (a main degradation band) in substantially the same proportion as a target product (a target band) of a full-length $\alpha 1$ chain occurring during the recombinant expression of native full-length $\alpha 1$ (I) chain and $\alpha 1$ (II) chain is eliminated, and a yield of the target product is improved. The variants of the present disclosure have physical and chemical characteristics and biological activities similar to those of native full-length collagen $\alpha 1$ (I) chain and $\alpha 1$ (II) chain produced through recombinant expression in *Pichia pastoris*, and thus both have application values in the field of biomedical materials.

Figure 5