

**TITLE OF INVENTION: RECOMBINANT SMALL-MOLECULE
COLLAGEN, EXPRESSION SYSTEM THEREOF, AND PREPARATION
METHOD THEREOF**

ABSTRACT

The present disclosure provides a recombinant small-molecule collagen, an expression system thereof and a preparation method thereof, and belongs to the fields of synthetic biology, genetic engineering, and biotechnology. The present disclosure provides a recombinant small-molecule collagen derived from a plurality of sources of type-III and type-XVII collagens, and successfully expresses the recombinant small-molecule collagen. The present disclosure establishes one expression system of a small-molecule collagen and a preparation method of the small-molecule collagen, and includes an engineered exclusive chassis cell, a designed tandem repeat sequence of the small-molecule collagen, and a recombinant vector. The expression system or method of the present disclosure significantly enhances the yield of the small-molecule collagen. The present disclosure avoids the cost caused by in vitro protease digestion and the risk of exogenous protein residues, while also reducing the time and cost of a subsequent purification process.

FIG. 16