

ABSTRACT

BIO-INK AND PREPARATION METHOD AND APPLICATION THEREOF

The present invention provides a bio-ink, which include an artificially synthesized degradable polymer, a natural polymer and a solvent as components thereof. The bio-ink of the present invention may further include a fluorescently modified natural polymer. The invention also provides a scaffold for tissue engineering printed by the bio-ink. The composite bio-ink formed by blending according to the present invention has combined advantages of both the synthetic polymer and the natural polymer, whereby allowing a 3D-printed scaffold thereof to possess sufficient mechanical strength, controllable cell affinity, and degradability. The variation of fluorescence intensity in such a scaffold with a fluorescent property can also be used to assess the extent of scaffold degradation in real time. The invention also provides a method for preparing a fluorescently labeled protein, and a bio-ink containing the fluorescently labeled protein produced according to the method.

(Fig. 7)