

This invention belongs to the technical field of composite materials, and discloses a xylan-based dual network nanocomposite hydrogel, preparation method thereof and use therefor. The method comprises (1) adding graphite oxide powder to deionized water, dispersing by ultrasonication to obtain a GO aqueous dispersion; (2) adding xylan to deionized water, heating and stirring to obtain a xylan solution; (3) adding water-soluble calcium salt, reaction monomer and the xylan solution to the aqueous GO dispersion, and stirring until the mixture is dispersed uniformly under ice bath, then adding initiator, crosslinking agent and accelerator, stirring and mixing uniformly to obtain a mixed solution; 4) drying the mixed solution in step (3) to obtain a xylan-based dual network nanocomposite hydrogel. The composite hydrogel obtained by this invention has high mechanical properties, is biodegradable and biocompatible, and can be used in the field of biomedicine, such as tissue engineering, drug sustained release, cell culture scaffold and cartilage tissue, etc.