CLAIMS

Claim 1. A preparation method of a salamander skin secretion hydrolysate, comprising the following steps:

S1 mixing a disulfide bond reducing agent and a first solvent to obtain a second solvent;

S2 mixing a lyophilized powder of salamander skin secretion and the second solvent to obtain a first mixed solution;

S3 fully hydrolyzing the first mixed solution to obtain a second mixed solution;

S4 centrifuging the second mixed solution and collecting a supernatant;

S5 transferring the supernatant into a dialysis bag with a molecular weight cut-off ≤ 1000 and placing the dialysis bag in the first solvent for full dialysis to obtain the salamander skin secretion hydrolysate;

wherein the disulfide bond reducing agent comprises a specific disulfide bond reducing agent, the specific disulfide bond reducing agent is Tris(2-carboxyethyl)phosphine hydrochloride (TCEP-HCl), and the first solvent comprises one or more of ultrapure water, deionized water, water for injection, and pure water.

Claim 2. The method according to claim 1, wherein a mass ratio of the first solvent to the lyophilized powder of salamander skin secretion is at least 4:1.

Claim 3. The method according to claim 1, wherein a mass ratio of the lyophilized powder of salamander skin secretion to the disulfide bond reducing agent is at least 3:1.

Claim 4. The method according to claim 1, wherein hydrolysis time for the hydrolyzing comprises 2 - 168 hours, optionally 12 - 48 hours.

Claim 5. The method according to claim 1, wherein temperature condition for the S3, the S4 and the S5 comprises 0 - 8°C.

Claim 6. The method according to claim 1, wherein the S3 is carried out in a vacuum reactor, and a vacuum degree of the vacuum reactor is ⟨ 5 kPa.

Claim 7. The method according to claim 1, wherein the disulfide bond reducing agent further comprises vitamin C.

Claim 8. The method according to claim 1, wherein dialysis time for the dialysis comprises 48 hours.

Claim 9. The method according to claim 1, wherein a concentration of the salamander skin secretion hydrolysate obtained comprises 3% - 7%.

Claim 10. The method according to any one of claims 1-9, wherein the method further comprises S6 concentrating the salamander skin secretion hydrolysate to obtain a concentrated salamander skin secretion hydrolysate.

Claim 11. The method according to claim 10, wherein a method for the concentrating comprises centrifuging the salamander skin secretion hydrolysate loaded into a concentrated centrifuge tube with a molecular weight cut-off ≤ 3K or evaporating and concentrating the salamander skin secretion hydrolysate.

Claim 12. Use of a salamander skin secretion hydrolysate in the preparation of a bioadhesive, wherein the salamander skin secretion hydrolysate is prepared by the method according to any one of claims 1-9.

Claim 13. The use according to claim 12, wherein a concentration of the salamander skin secretion hydrolysate comprises 5% - 7%.

Claim 14. Use of a salamander skin secretion hydrolysate in the preparation of a wound dressing, wherein the salamander skin secretion hydrolysate is prepared by the method according to any one of claims 1-11.

Claim 15. Use of a salamander skin secretion hydrolysate in the preparation of a photosensitive hydrogel, wherein the photosensitive hydrogel comprises a concentrated salamander skin secretion hydrolysate and a photoinitiator; under exposure to visible light, the concentrated salamander skin secretion hydrolysate is cured to form the photosensitive hydrogel; the concentrated salamander skin secretion hydrolysate is prepared by the method according to claim 10, and the photoinitiator comprises Ru/SPS system.