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**Optimization of the Preparation Process of Angelica Polysaccharide Iron by Orthogonal Design**

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**Abstract:**

**Background/Objective:** To study the preparation process of Angelica polysaccharide iron complex.

**Methods:** The experiment utilized a hot water extraction method to prepare Angelica polysaccharides, and formed the Angelica polysaccharide iron through a complexation reaction between the polysaccharide and FeCl3. The iron content in the complex was determined using ortho-phenanthroline UV spectrophotometry. Single-factor experiments were conducted on the mass ratio of Angelica polysaccharides to trisodium citrate, the temperature of water bath heating, and the reaction time. The optimal preparation conditions were determined based on orthogonal design experiments.

**Results:** The results showed that the optimal preparation conditions for the Angelica polysaccharide iron complex are a mass ratio of Angelica polysaccharides to trisodium citrate of 2:1, a reaction temperature of 70°C, and a water bath heating time of 60 minutes. Under these conditions, the iron content in the Angelica polysaccharide iron complex reached 18.66%.

**Conclusion:** The Angelica polysaccharide iron complex can be used as a new type of iron supplement, and this study contributes to the development of new Chinese veterinary drugs and feed additives.

**Keywords:** Angelica polysaccharides; Polysaccharide iron; Preparation process; Orthogonal experiments