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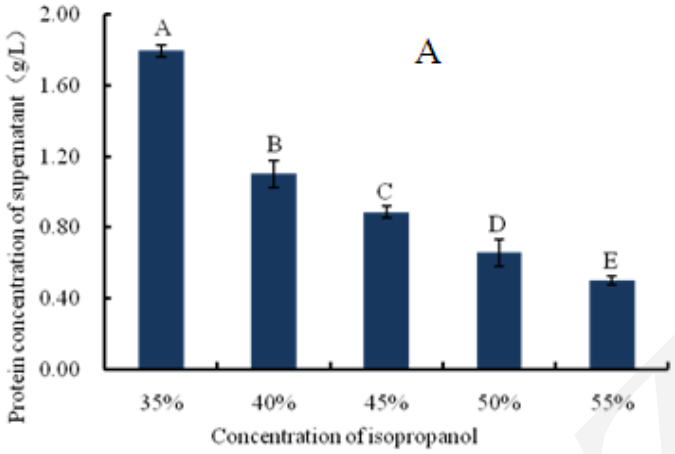
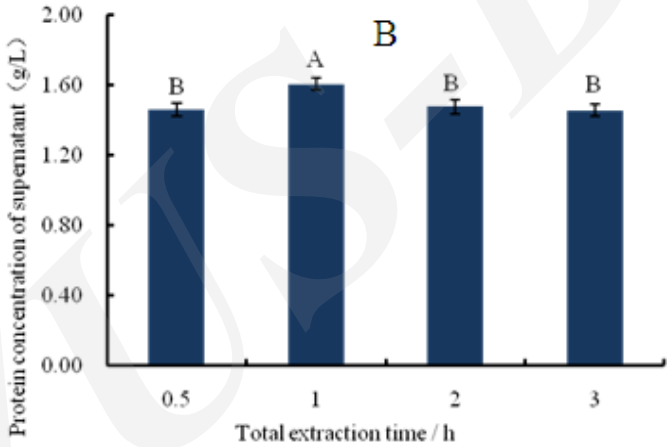
Optimization of low-abundance protein extraction and abundant protein removal from defatted soybean meal

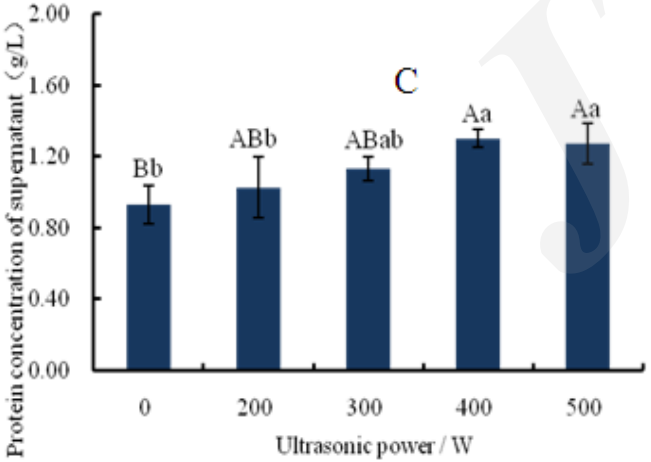
Key words: Protein extraction, Abundant proteins, Low-abundance proteins, Defatted soybean meal, MALDI-TOF-MS

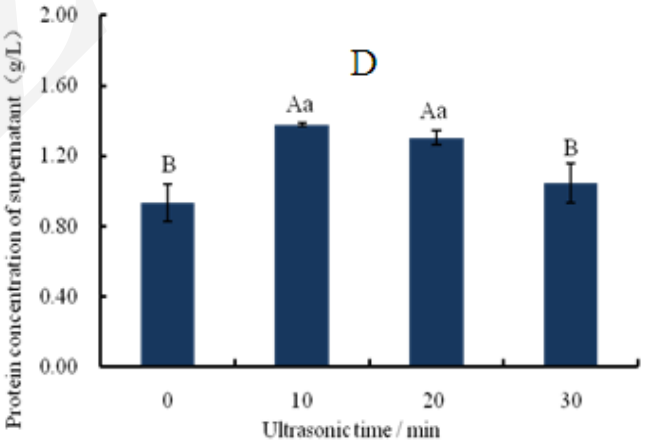
Research Summary

This study mainly focused on the optimization of low-abundance protein extraction and abundant protein removal from defatted soybean meal. The results are as follows:









- **isopropanol contributed to the removal of APs, ultrasonic treatment and total extraction time played an important role in enriching the LAPs of soybean**

Research Summary

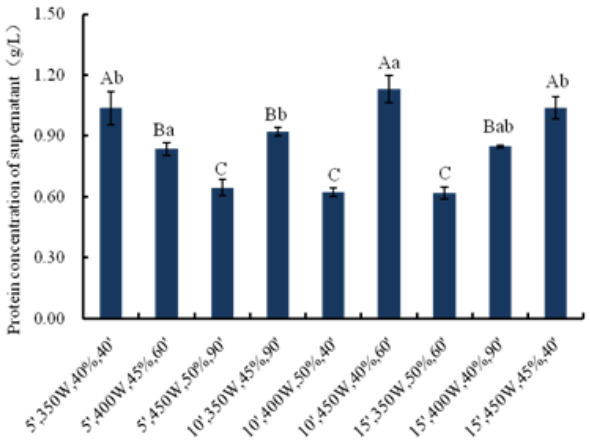
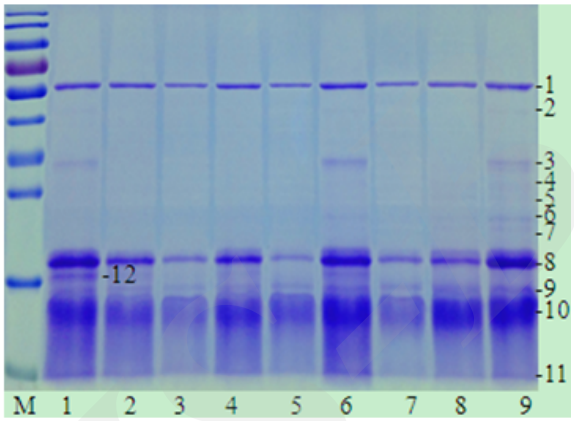


Fig. 2 Effects of different conditions on the soybean protein concentration of isopropanol extracts



M: Marker,indicate 170,130,100,70,55,40,35,25,15, 10 (KD); Lane 1-9 were the conditions as shown in Fig. 2

Fig. 3 1-D electrophoretogram of isopropanol extracts under different conditions

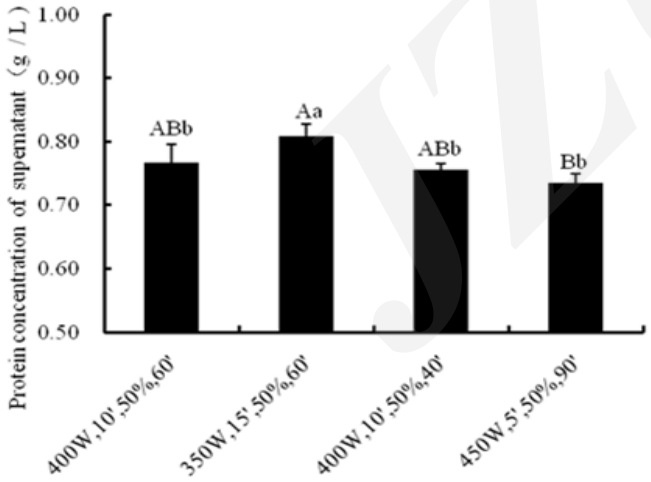
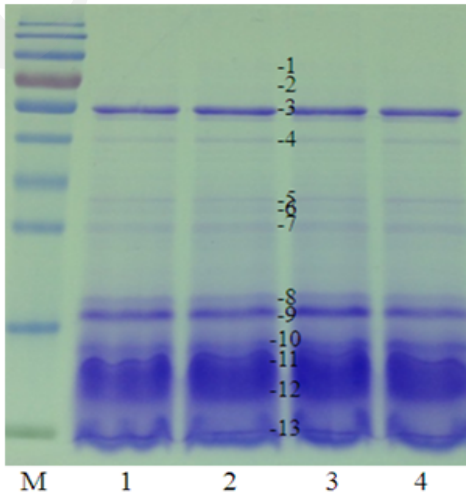


Fig. 4 *Effects of various conditions on the soybean protein concentration of extracts*



Lane 1-4 were the conditions as Fig. 4

Fig. 5 1-D electrophoretogram of cold acetone precipitation under four different conditions

- **the optimal conditions were 50% isopropanol, ultrasonic treatment for 15 min at 350 W for a total extraction time of 1 h .**

Innovation points

- **It was the first time to study the extraction of LAPs from defatted soybean meal by isopropanol with the ultrasonic-assisted.**

- **The establishment of a method for the removal of abundant proteins (APs) and enrichment of low-abundance proteins (LAPs) might contribute to further studies on the physiological functions of LAPs on animals and humans without the influence of Aps.**

Figure 4