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Molecular Weight Distribution of Protein Hydrolysate by the Enzymic Hydrolysis of Weakly Acid-Treated Wheat Gluten

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For the production of highly soluble HVP (hydrolysed vegetable protein) by enzymic hydrolysis, wheat gluten suspension (6% w/w, protein) was pretreated with weak acid (0.1 N HCl) at 95°C for 1 h to overcome insolubility of the suspension. After treating it for 3 h with alcalase, flavourzyme was added to the wheat gluten hydrolysate and hydrolysis continued for a further 21 h at 50°C. α -Amino nitrogen content (AN, mg/ml) and nitrogen solubility index (NSI, %) of the resulting wheat gluten hydrolysate product was 2.87 mg/ml and 94.9%, respectively. The wheat gluten hydrolysate product contained peptides and free amino acids with molecular weights below 300 dalton. Non-acid treated SPI (soy protein isolate) was also adopted as a protein substrate. The AN and NSI of the resulting SPI hydrolysate were 2.02 mg/ml and 70.4%, respectively. SPI hydrolysate contained proteins and peptides with molecular weights above 80 Dalton and below 7300 Dalton.

Keywords: [protein hydrolysate](#), [wheat gluten](#), [SPI](#), [enzymic hydrolysis](#)

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