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Aggregate Formation of Peptic Globin Digest

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Peptic globin digest (PG) was prepared from porcine blood globin, and the peptides were characterized by separation processes such as gel filtration chromatography, hydrophobic chromatography and sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE). Aggregation of the peptides was indicated by high-performance liquid chromatography (HPLC). Two fractions (F1 and F2) were obtained from PG by gel filtration chromatography. Hydrophobic chromatography of fraction F1 was carried out, and a peak corresponding to the aggregate was found in fractions F1b-F1e. These fractions, which showed an aggregate peak by HPLC, were subjected to SDS-PAGE, and two major peptide bands with molecular weight of 5000 and 6000 were found. Amino acid sequence indicated the N-terminal amino acid of these peptides to be 42-47 (Phe-Asp) and 86-92 (Ala-Leu) of β-globin, respectively. Furthermore, it was predicted that the Mw 5000 and 6000 peptides may possibly be 42-85 (Mw 4749) and 86-141 (Mw 6117) of β-globin, respectively, based on the specificity of pepsin.

Keywords: globin, aggregation, gelation, pepsin digestion, hydrophobic chromatography

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