

Nunthawan Nowwarote 2006: Studies of Types and Biochemical Properties of Swamp Buffalo Hemoglobin by Chromatography Electrophoresis and Spectrometry Techniques. Master of Science (Animal Physiology), Major Field: Animal Physiology, Department of Physiology. Thesis Advisor: Associate Professor Apassara Choothesa, Dr. rer. nat. 79 pages.
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Cellulose acetate electrophoresis was used to study the phenotypes of swamp buffalo hemoglobin. Two phenotypes of swamp buffalo hemoglobin, called Hb BB and Hb AB were found. Two electrophoretic different Hbs were classified as Hb slow and Hb fast. Hb BB and Hb AB were the result of a combination of Hb fast and Hb slow at a ratio of 2 : 1 and 5 : 1, respectively. The molecular weights of hemoglobin were 46,209 daltons (trimer) and 60,942.79 (tetramer) daltons by gel filtration chromatography and MALDI – TOF mass spectrometry, respectively. The subunit molecular weight of hemoglobin by SDS – PAGE was 13,227 daltons. By using MALDI – TOF mass spectrometry, the molecular weights of hemoglobin monomer, dimer and trimer were 15359.67, 30894.40 and 45912.42 daltons, respectively.

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