

Content

page

Abstract in Chinese	i
Abstract.....	ii
Acknowledement.....	iii
Content.....	v
Figure content.....	vi
Table content.....	viii
Abbreviation.....	ix
Chapter 1 Introduction.....	1
1.1 Biological functions of Haptoglobin (Hp).....	1
1.2 The structural arrangement of Hp.....	2
1.3 Clinical conception with Hp phenotypes.....	3
1.4 The purpose of this study.....	4
Chapter 2 Experimental procedures.....	6
2.1 Phenotyping.....	6
2.2 Purification of Hp1-1, 2-1, and 2-2.....	7
2.3 Preparation of monoclonal antibodies (mAb).....	7
2.4 Native and SDS-PAGE.....	8
2.5 Western blot analysis.....	9
2.6 Enzyme-linked immunosorbent assay.....	9
2.7 Competetive ELISA.....	10
2.8 Antigenic mapping (Peptide array).....	11
2.9 Expression of the recombinant Hp α 1 and α 2 subunits...	11
2.10 Site directed mutagenesis.....	13

2.11	CD Spectrum.....	14
2.12	Hemoglobin inhibition assay.....	14
Chapter 3	Results.....	16
3.1	MAB prepared against Hp 2-1 or 2-2.....	16
3.2	MAB specific to Hp α chain of Hp that reacted equally with Hp phenotypes.....	18
3.3	Immunoreactivity of mAb 3H8 against Hp phenotypes in solution.....	19
3.4	Determination of plasma levels of Hp in subject with Hp 1-1, 2-1, or 2-2 using α -chain specific mAb 3H8.....	19
3.5	Antigenic mapping for mAb 3H8.....	21
3.6	Immunoreactivity of mAb 3H8 for recombinant α 1 and 2 chains.....	22
3.7	Conformation of recombinant α 1 and 2 and Hp 2-1.....	23
Chapter 4	Discussion.....	24
Chapter 5	Reference.....	32