

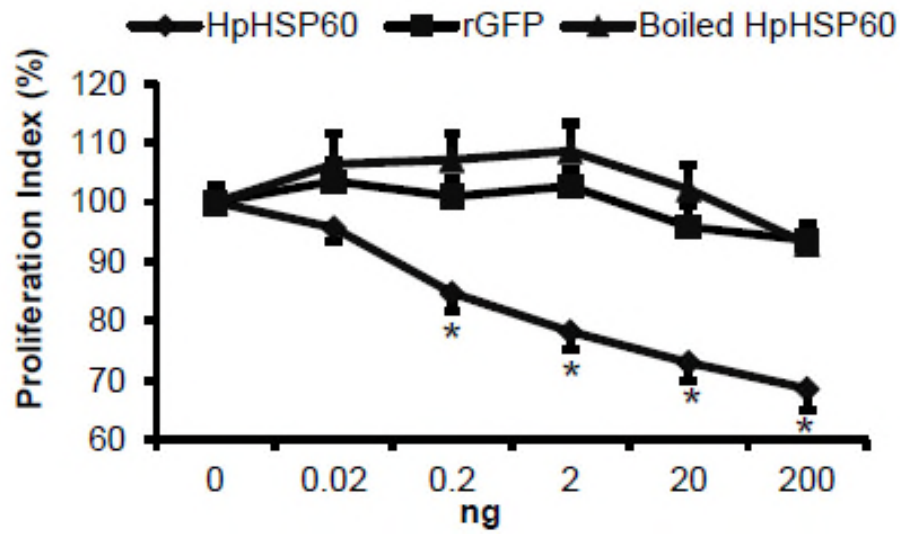


Fig. 1

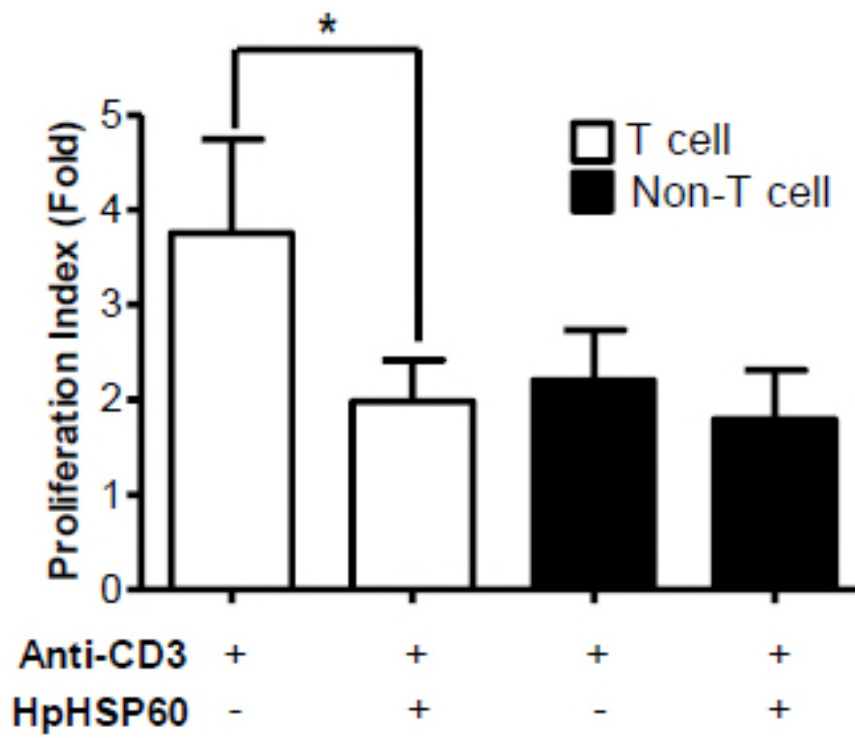


Fig. 2

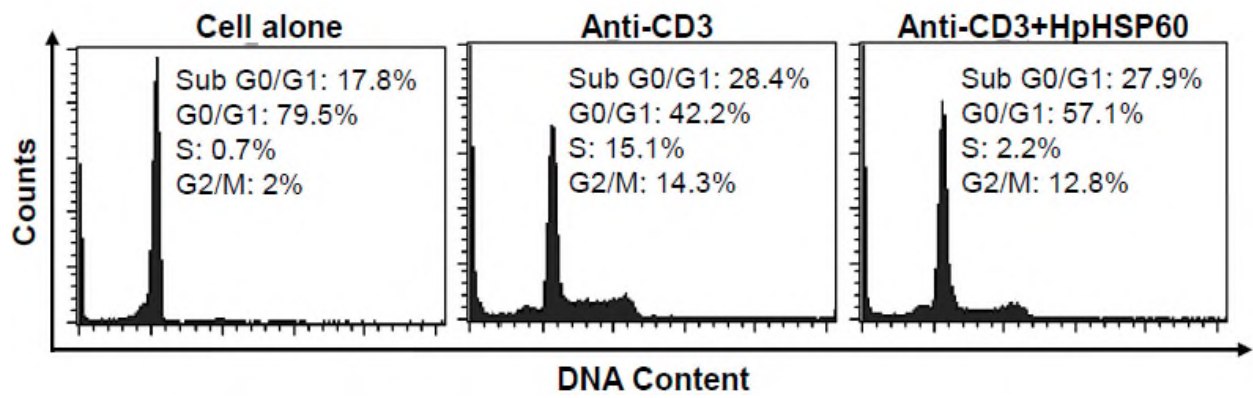


Fig. 3A

Fig. 3B

Fig. 3C

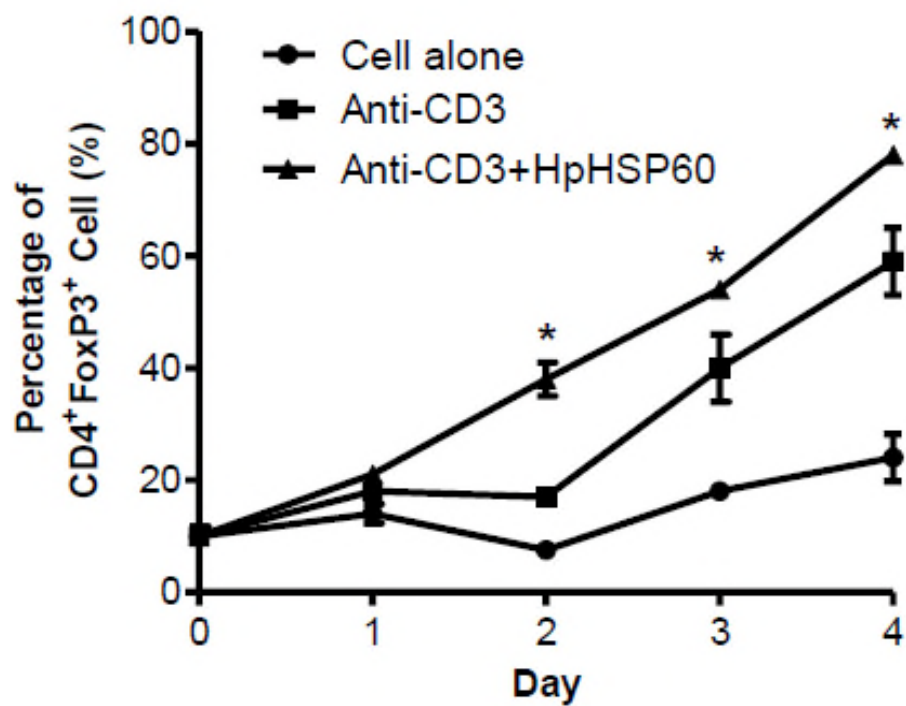


Fig. 4

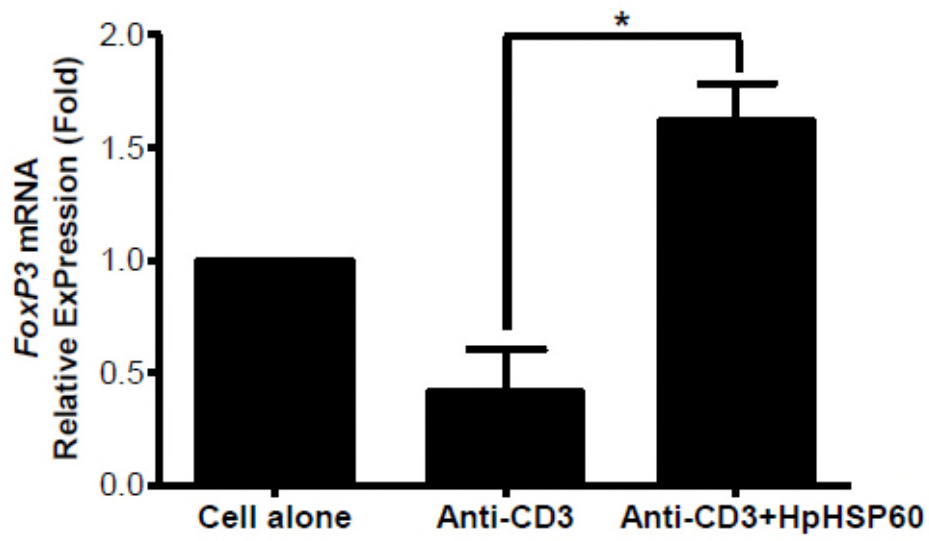


Fig. 5

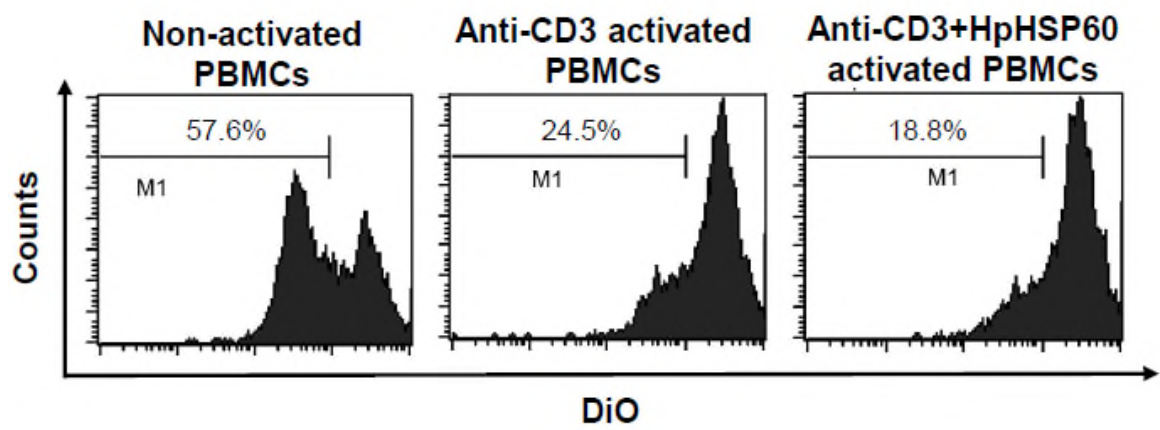


Fig. 6

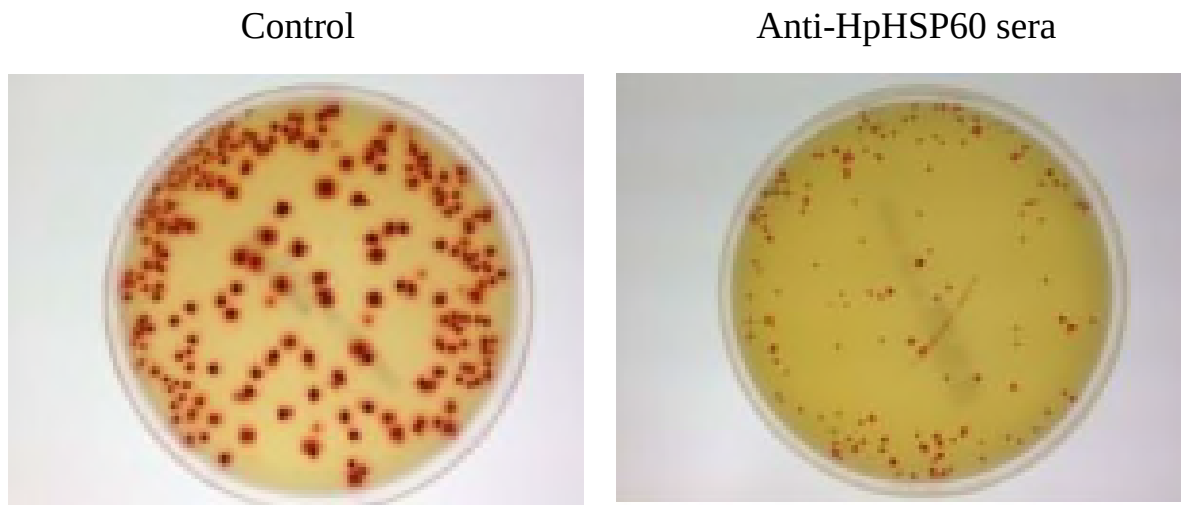


Fig. 7

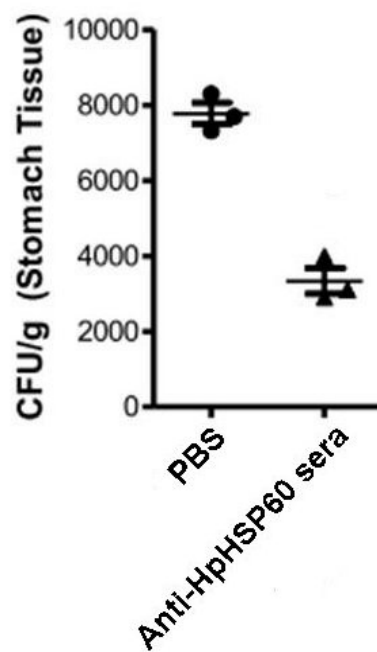


Fig. 8

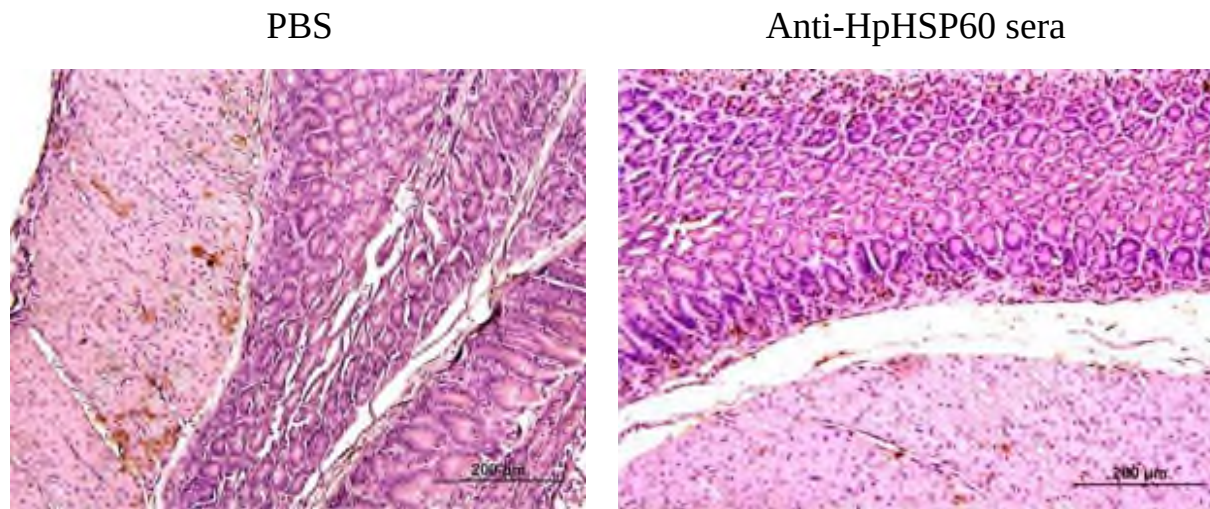


Fig. 9

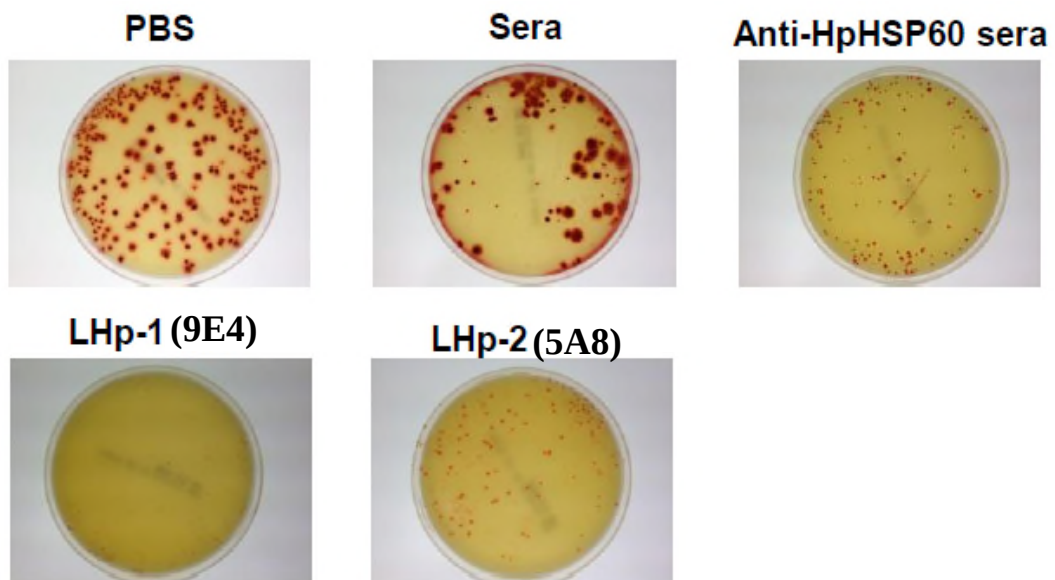


Fig.10

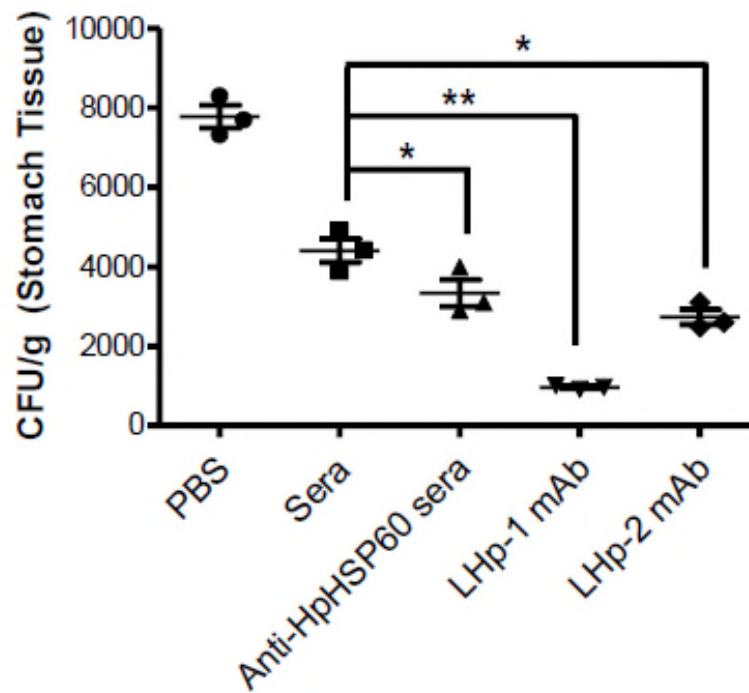


Fig. 11

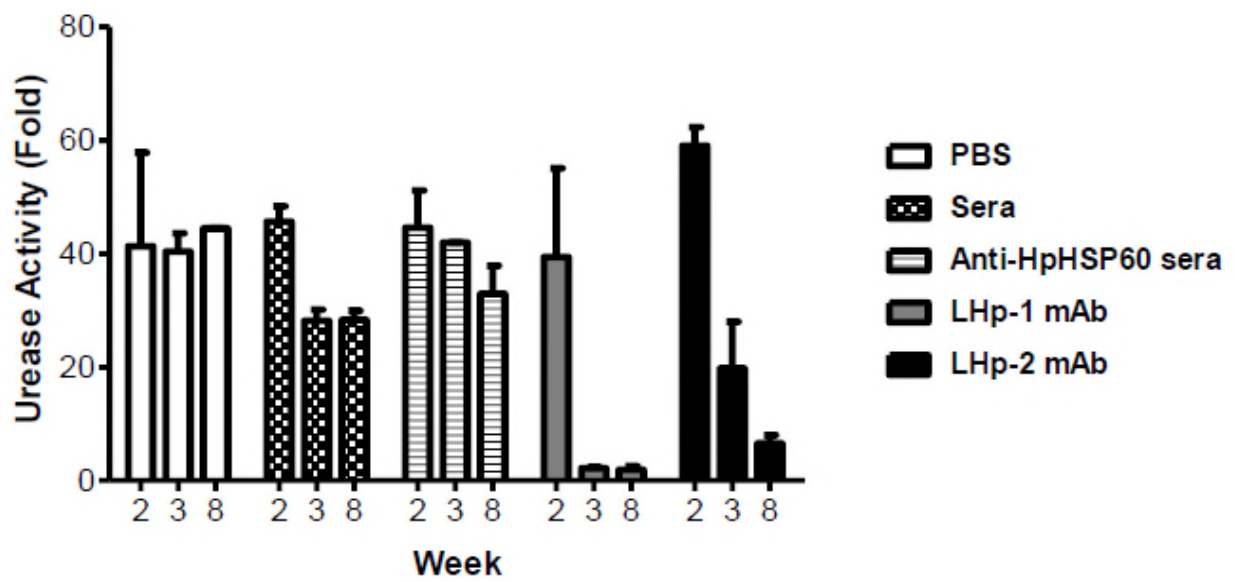
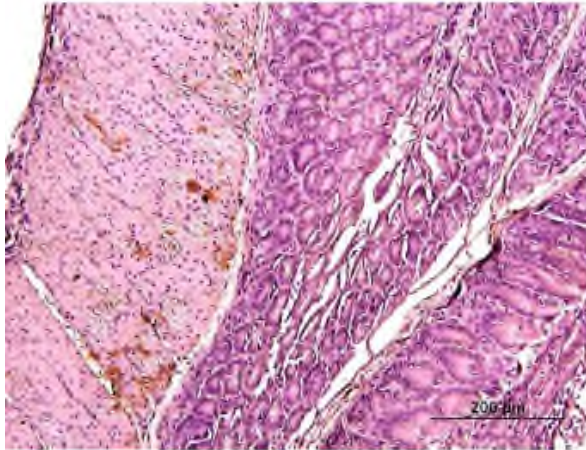
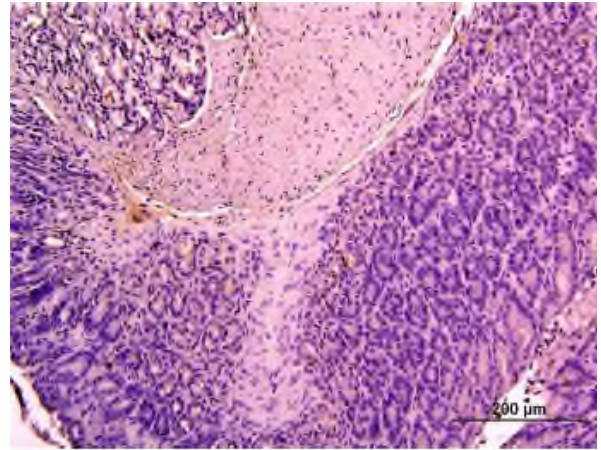


Fig. 12

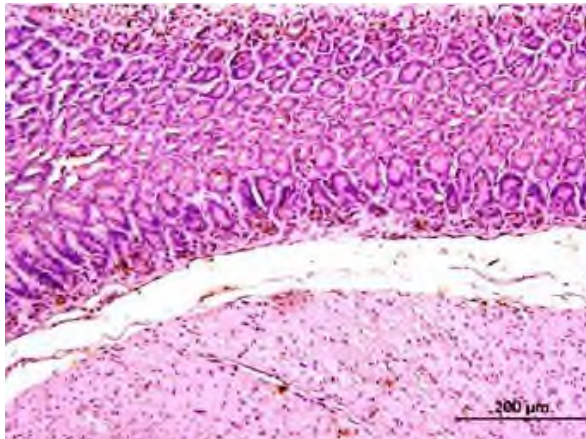
PBS



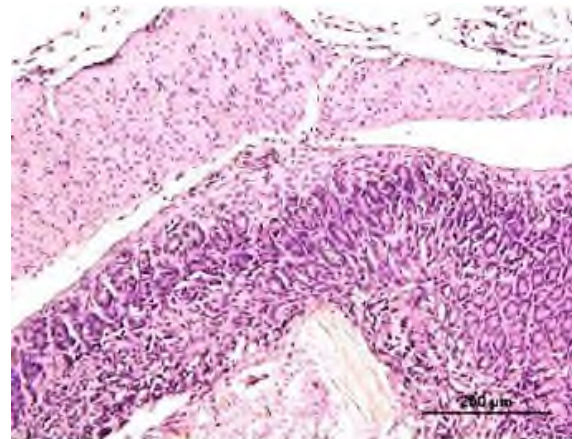
sera



Anti-HpHSP60 sera



LHp-1 (9E4)



LHp-2 (5A8)

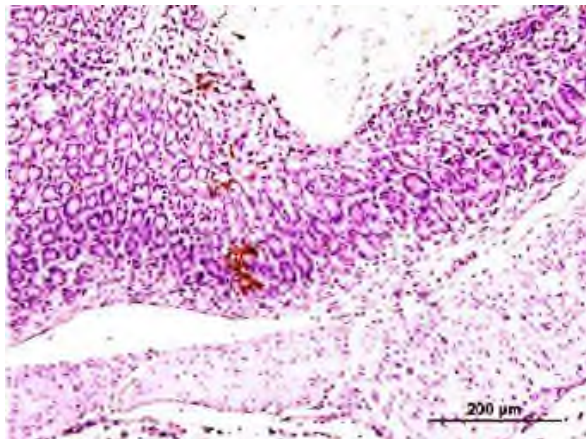


Fig. 13

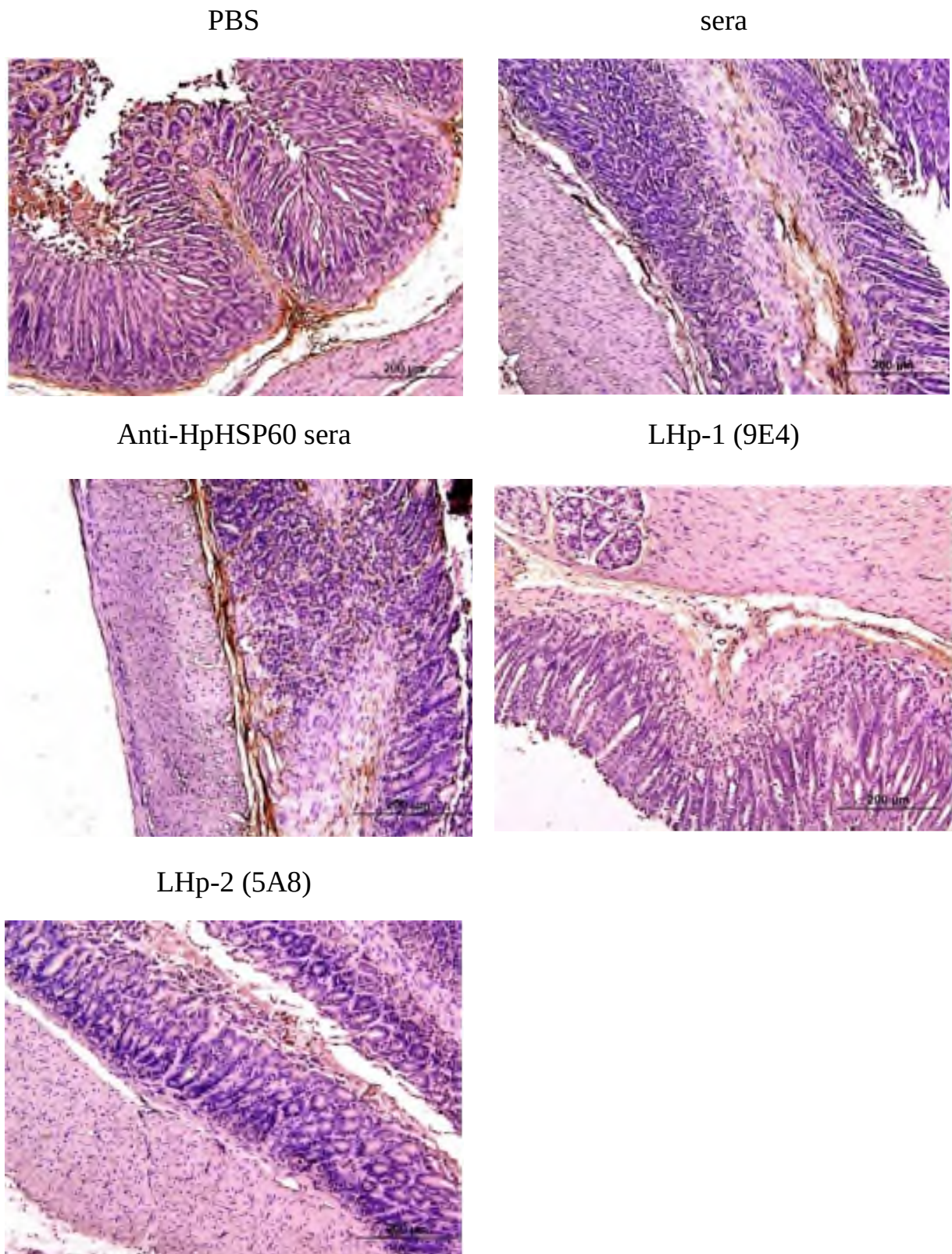


Fig. 14

LHp-1 (9E4)

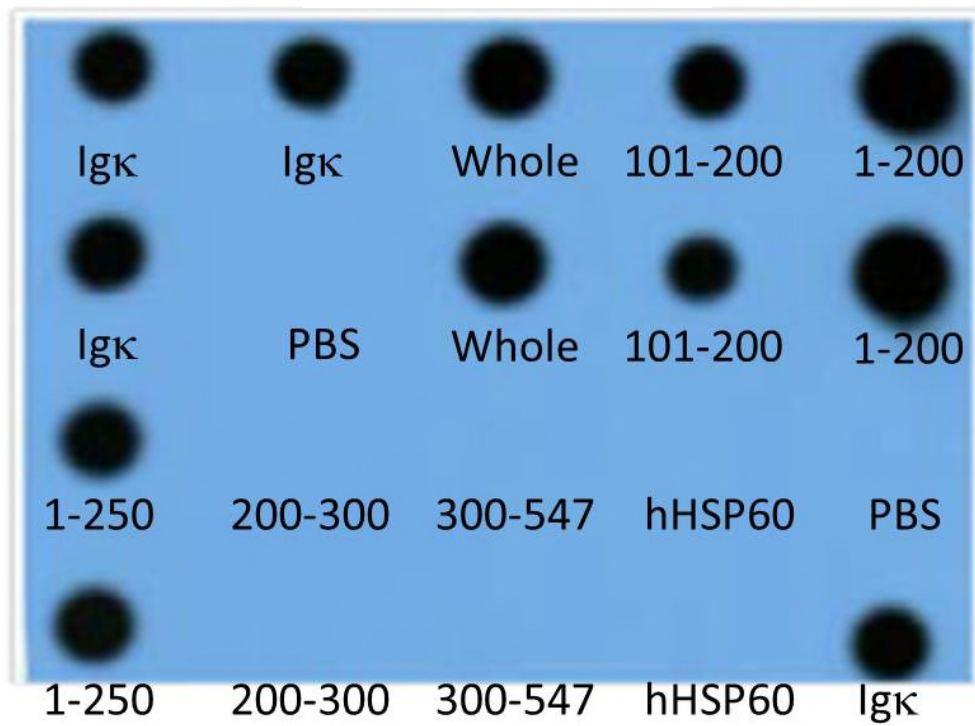


Fig. 15

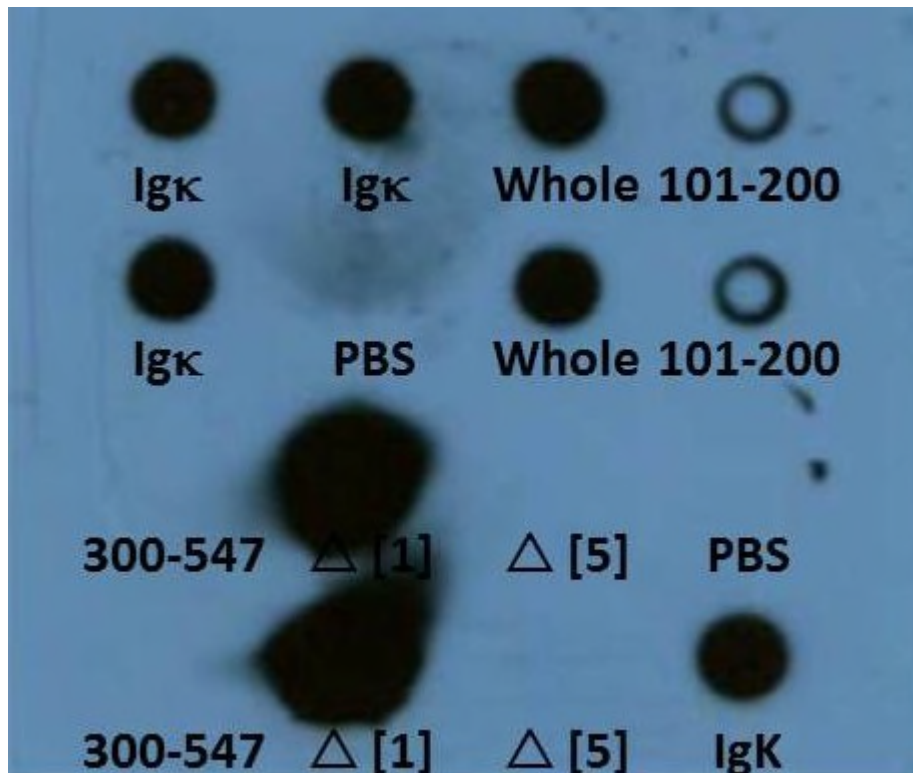


Fig. 16

Sequence listing

<110> Sagabio Co., Ltd.

<120> A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragment thereof, and hybridomas producing such antibody

<130> SB3302P-EP

<160> 13

<210> 1

<211> 13

<212> PRT

<213> mice

<400> 1

Met Glu Lys Val Gly Lys Asp Gly Val Ile Thr Val Glu
1 5 10

<210> 2

<211> 13

<212> PRT

<213> mice

<400> 2

Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Val Phe Leu
1 5 10

<210> 3

<211> 5

<212> PRT

<213> mice

<400> 3

Tyr Ala Ala Ser Asn
1 5

<210> 4

<211> 8

<212> PRT

<213> mice

<400> 4

Gln Ser Asn Glu Val Phe Trp Thr
1 5

<210> 5

<211> 111

<212> PRT

<213> mice

<400> 5

Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
1 5 10 15
Gln Arg Ala Thr Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30
Gly Asp Val Phe Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45
Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser Gly Ile Pro Ala
50 55 60
Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asn Ile His
65 70 75 80
Pro Val Glu Glu Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Ser Asn
85 90 95
Glu Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 6

<211> 131

<212> PRT

<213> mice

<400> 6

Met Glu Thr Asp Thr Ile Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15
Gly Ser Thr Gly Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala
20 25 30
Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Lys Ala Ser Gln Ser

13218418_1.txt

```

      35      40      45
Val Asp Tyr Asp Gly Asp Val Phe Leu Asn Trp Tyr Gln Gln Lys Pro
      50      55      60
Gly Gln Pro Pro Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser
      65      70      75      80
Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
      85      90      95
Leu Asn Ile His Pro Val Glu Glu Asp Ala Ala Thr Tyr Tyr Cys
      100      105      110
Gln Gln Ser Asn Glu Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu
      115      120      125
Glu Ile Lys
      130

```

```

<210> 7
<211> 9
<212> PRT
<213> mice
<400> 7
Ser Gly Phe Thr Phe Ser Ser Phe Gly
      1      5

```

```

<210> 8
<211> 6
<212> PRT
<213> mice
<400> 8
Ile Ser Asn Gly Gly Ser
      1      5

```

```

<210> 9
<211> 11
<212> PRT
<213> mice
<400> 9
Gln Gly Leu Arg Arg Arg Gly Ala Met Asp Tyr
      1      5      10

```

```

<210> 10
<211> 120
<212> PRT
<213> mice
<400> 10
Glu Val His Leu Val Glu Ser Gly Gly Asp Leu Val Lys Pro Gly Gly
      1      5      10      15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
      20      25
Gly Met Ser Trp Val Arg Gln Thr Pro Asp Lys Arg Leu Glu Trp Val
      30      35      40      45
Ala Thr Ile Ser Asn Gly Gly Ser Tyr Thr Tyr Tyr Pro Asp Ser Val
      50      55      60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
      65      70      75      80
Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys
      85      90      95
Thr Arg Gln Gly Leu Arg Arg Arg Gly Ala Met Asp Tyr Trp Gly Gln
      100      105      110
Gly Thr Ser Val Thr Val Ser Ser
      115      120

```

```

<210> 11
<211> 463
<212> PRT
<213> mice
<400> 11
Met Asn Phe Gly Leu Ser Leu Ile Phe Leu Ala Leu Ile Leu Lys Gly
      1      5      10      15
Val Gln Cys Glu Val His Leu Val Glu Ser Gly Gly Asp Leu Val Lys

```

13218418_1.txt

			20					25				30			
Pro	Gly	Gly	Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe
		35					40					45			
Ser	Ser	Phe	Gly	Met	Ser	Trp	Val	Arg	Gln	Thr	Pro	Asp	Lys	Arg	Leu
	50					55					60				
Glu	Trp	Val	Ala	Thr	Ile	Ser	Asn	Gly	Gly	Ser	Tyr	Thr	Tyr	Tyr	Pro
	65				70					75					80
Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn
				85					90					95	
Thr	Leu	Tyr	Leu	Gln	Met	Ser	Ser	Leu	Lys	Ser	Glu	Asp	Thr	Ala	Met
			100					105					110		
Tyr	Tyr	Cys	Thr	Arg	Gln	Gly	Leu	Arg	Arg	Arg	Gly	Ala	Met	Asp	Tyr
		115					120					125			
Trp	Gly	Gln	Gly	Thr	Ser	Val	Thr	Val	Ser	Ser	Ala	Lys	Thr	Thr	Pro
	130					135					140				
Pro	Ser	Val	Tyr	Pro	Leu	Ala	Pro	Gly	Ser	Ala	Ala	Gln	Thr	Asn	Ser
	145				150					155					160
Met	Val	Thr	Leu	Gly	Cys	Leu	Val	Lys	Gly	Tyr	Phe	Pro	Glu	Pro	Val
				165					170					175	
Thr	Val	Thr	Trp	Asn	Ser	Gly	Ser	Leu	Ser	Ser	Gly	Val	His	Thr	Phe
			180					185					190		
Pro	Ala	Val	Leu	Gln	Ser	Asp	Leu	Tyr	Thr	Leu	Ser	Ser	Ser	Val	Thr
		195					200					205			
Val	Pro	Ser	Ser	Thr	Trp	Pro	Ser	Glu	Thr	Val	Thr	Cys	Asn	Val	Ala
	210					215					220				
His	Pro	Ala	Ser	Ser	Thr	Lys	Val	Asp	Lys	Lys	Ile	Val	Pro	Arg	Asp
	225				230					235					240
Cys	Gly	Cys	Lys	Pro	Cys	Ile	Cys	Thr	Val	Pro	Glu	Val	Ser	Ser	Val
				245					250					255	
Phe	Ile	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Val	Leu	Thr	Ile	Thr	Leu	Thr
			260					265					270		
Pro	Lys	Val	Thr	Cys	Val	Val	Val	Asp	Ile	Ser	Lys	Asp	Asp	Pro	Glu
		275					280					285			
Val	Gln	Phe	Ser	Trp	Phe	Val	Asp	Asp	Val	Glu	Val	His	Thr	Ala	Gln
	290				295					300					
Thr	Gln	Pro	Arg	Glu	Glu	Gln	Phe	Asn	Ser	Thr	Phe	Arg	Ser	Val	Ser
	305				310					315					320
Glu	Leu	Pro	Ile	Met	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Phe	Lys
				325					330					335	
Cys	Arg	Val	Asn	Ser	Ala	Ala	Phe	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile
			340					345					350		
Ser	Lys	Thr	Lys	Gly	Arg	Pro	Lys	Ala	Pro	Gln	Val	Tyr	Thr	Ile	Pro
		355					360					365			
Pro	Pro	Lys	Glu	Gln	Met	Ala	Lys	Asp	Lys	Val	Ser	Leu	Thr	Cys	Met
	370					375					380				
Ile	Thr	Asp	Phe	Phe	Pro	Glu	Asp	Ile	Thr	Val	Glu	Trp	Gln	Trp	Asn
	385				390					395					400
Gly	Gln	Pro	Ala	Glu	Asn	Tyr	Lys	Asn	Thr	Gln	Pro	Ile	Met	Asp	Thr
				405					410					415	
Asp	Gly	Ser	Tyr	Phe	Val	Tyr	Ser	Lys	Leu	Asn	Val	Gln	Lys	Ser	Asn
			420					425					430		
Trp	Glu	Ala	Gly	Asn	Thr	Phe	Thr	Cys	Ser	Val	Leu	His	Glu	Gly	Leu
		435					440					445			
His	Asn	His	His	Thr	Glu	Lys	Ser	Leu	Ser	His	Ser	Pro	Gly	Lys	
	450					455					460				

<210> 12

<211> 100

<212> PRT

<213> Helicobacter pylori

<400> 12

Glu	Gly	Leu	Arg	Asn	Ile	Thr	Ala	Gly	Ala	Asn	Pro	Ile	Glu	Val	Lys
	1			5					10					15	
Arg	Gly	Met	Asp	Lys	Ala	Ala	Glu	Ala	Ile	Ile	Asn	Glu	Leu	Lys	Lys
			20					25					30		
Ala	Ser	Lys	Lys	Val	Gly	Gly	Lys	Glu	Glu	Ile	Thr	Gln	Val	Ala	Thr
		35					40					45			
Ile	Ser	Ala	Asn	Ser	Asp	His	Asn	Ile	Gly	Lys	Leu	Ile	Ala	Asp	Ala

13218418_1.txt

50 55 60
 Met Glu Lys Val Gly Lys Asp Gly Val Ile Thr Val Glu Glu Ala Lys
 65 70 75 80
 Gly Ile Glu Asp Glu Leu Asp Val Val Glu Gly Met Gln Phe Asp Arg
 85 90 95
 Gly Tyr Leu Ser
 100

<210> 13

<211> 31

<212> PRT

<213> Helicobacter pylori

<400> 13

Lys Asp Gly Val Ile Thr Val Glu Glu Ala Lys Gly Ile Glu Asp Glu
 1 5 10 15
 Leu Asp Val Val Glu Gly Met Gln Phe Asp Arg Gly Tyr Leu Ser
 20 25 30