

o P. ginseng 30. o R o P o R
 (HI), o o o o o o o o o o o o
 H3N2 fi
 R.

2. Materials and methods

2.1. Animals

F ICR
 A C (LAC) C o L . (C), L o o
 o o o o o o o o o o o o
 o o . F ad libitum. A o o
 o o o o o o o o o o o o
 A o C .

2.2. Antigen and adjuvant

fi A/R /411/2002 (H3N2)
 P o o C o D C o o
 G o R o 326 μ / o (HA).
 o H o G I C o L (J C). R
 o 98% o 947. R
 fi o (DM O),
 o o (1000 μ /)
 0.22 fi o o o o o o o o
 0.5 o o (E)/ o *Limulus*
 C (B o, A&C B o o L . ,

2.3. Immunization

F o ICR
 8 . E o (. .)
 3 200 o o o o o o
 o (1) 50 R; (2) 10 HA; (3) 100 HA; (4) 10 HA +
 25 R; (5) 10 HA + 50 o (6) 10 HA + 100 R . o
 HI o o o o o o o o o o
 I G o o o o o o o o o o
 o o o o IFN- γ IL-5.

2.4. Measurement of specific IgG and the IgG isotypes

o I G o o o HA- fi I G
 o . A o o 96- o o
 o 100 μ o 1 μ

(RPMI 1640 -PB 0.05 M 2-
 10% o, 100 I/ 100 μ / o
 FC). C .C
 95% Q9
 o o fi o B fl o
 o 96- fl o o (N -) 5.0 10⁶
 fi / 100 μ o 5 μ /), LP (fi o 7.5 μ /) o
 37 C o 200 μ .
 5% CO₂ o 2 . A
 M o .B fl ,50 μ o M o (2 / /)
 4 o o o
 (1400 g, 5) o M
 o (192 μ DM O 8 μ 1 N HC) 150 μ o DM O o
 o ELI A 570 -
 630 - 15 - (I)
 o o o : I = o o - o -

2.7. Measurement of IFN-γ and IL-5 produced by splenocytes

2.5 10⁶ / o o o o o
 o (N -), 100 μ o o o
 o Co-A o (fi o 5 μ /) .
 37 C - 5% CO₂ o o 48 .
 A , o o IFN-γ IL-5
 o ELI A (R & D I - , M o ,
 A). Co o o o o o

2.8. Statistical analysis

D .D. B o 3 o o o
 0.05 o o - fi Q9 . P- o o -

3. Results

3.1. Serum specific IgG and IgG isotypes

fi I G - I G
 ELI A o .F . I o 10 o HA
 fi o HA- fi I G (1:160) 100 o HA
 (1:1659) (P<0.05). Ho , I G o
 o HA (10 -) R (50 μ) 19 (1:3044)
 o o HA (10 -) I G
 (P<0.01) - I G
 100 o HA (P>0.05). ▼ I G
 10 o HA R o o 25 o
 100

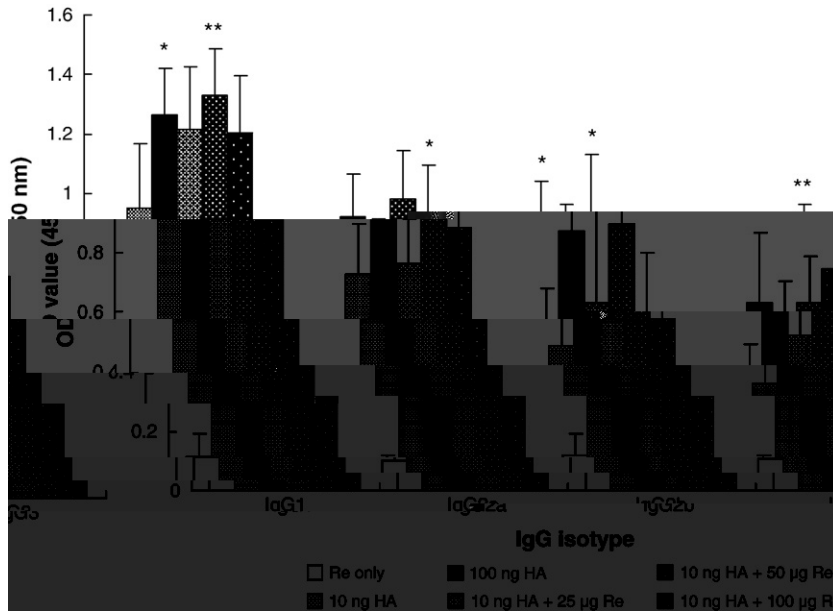


Fig. 2. Effect of HA concentration on the OI value of IgG1, IgG2a, and IgG2b isotypes. Mice were immunized with H3N2 HA (10, 100 ng) or H3N2 HA (10 ng) + IFA (25, 50, 100 µg). The OI value was measured 10 days after the final immunization. *n* = 8. **P* < 0.05, ***P* < 0.01.

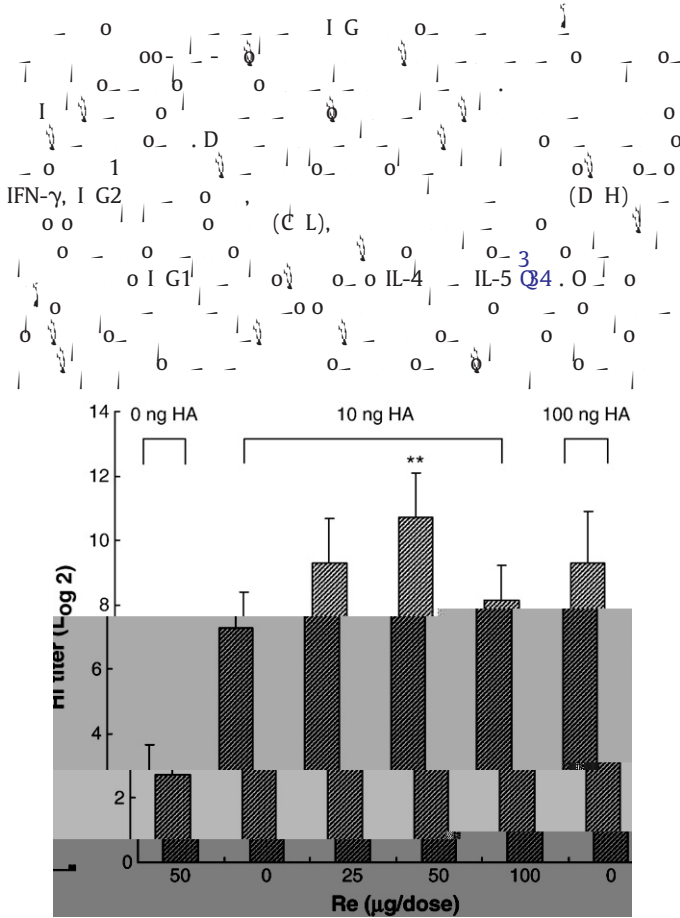


Fig. 3. Effect of HA concentration on the MI titer. Mice were immunized with H3N2 HA (10, 100 ng) or H3N2 HA (10 ng) + IFA (25, 50, 100 µg). The MI titer was measured 10 days after the final immunization. *n* = 8. **P* < 0.05, ***P* < 0.01.

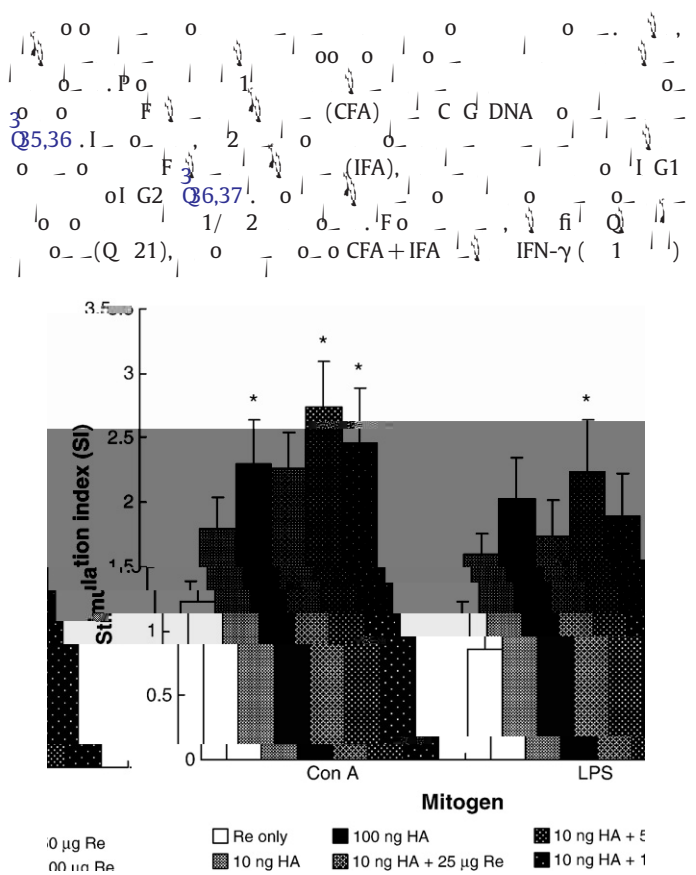


Fig. 4. Effect of HA concentration on the Stimulation index (SI) for Con A and LPS. Mice were immunized with H3N2 HA (10, 100 ng) or H3N2 HA (10 ng) + IFA (25, 50, 100 µg). The SI was measured 10 days after the final immunization. *n* = 8. **P* < 0.05, ***P* < 0.01.

I G1/I G2 o
 o IL-5 IFN-γ F .5,
 o 1 2 o o 1 2
 o R o o o o
 . Bo Co-A- LP - b o o
 R . E o o oLP B
 3
 Q3.
 I o o R
 H3N2 fi I G I G o HI
 o o IL-5 IFN-γ o
 Co 1 2 o
 G o R o o
 R 1/ 2 o

Acknowledgements

C (30771592) M N o fi F o o o
 C (2008BADB4B06-2).

References

3
 Q ▼ PF, N G, K o .O o o I :K- DM, Ho PM,
 G fi _DE, M L, MA, R RA, Ro _B, o .F o o 5
 P L - o -R ; 2007. !1691-N 280./F11 7-54-1.3123.0383G

IL-4 (2) o 3
 Q7, o o o o o
 o o (G L)/o
 1/ 2 (o I G1 - I G2)
 3
 Q8. o o fi
 : o o 3
 Q .A o o
 o o
 3
 Q9, b HA -C
 70-90% fi
 o HA o o
 o o o
 o C I 3
 Q10,41 .A o o
 o o B 3
 Q12, 1 o o
 o o R fi b o
 HA -o o I G1 ol G2 o

