



PRELIMINARY INFORMATION FOR FDA ADVISORY PANEL MEETING

January 28, 2000

Bethesda, Maryland

**WHO COLLABORATING CENTER FOR INFLUENZA
REFERENCE AND RESEARCH**

**Influenza Branch
Division of Viral and Rickettsial Diseases
National Center for Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30333**

HEMAGGLUTINATION INHIBITION REACTIONS OF INFLUENZA H1 VIRUSES

TESTED 01/14/2000

STRAIN DESIGNATION	REFERENCE FERRET ANTISERA				Date collected	ass
	A BJ/262	B N.CAL/20	C JO/82	D MOS/13		
REFERENCE ANTIGENS						
1. A/BEIJING/262/95*	640	320	20	20	01/09/95	EE4
2. A/NEW CALEDONIA/20/99*	320	640	5	20	06/09/99	EE1
3. A/JOHANNESBURG/82/96*	80	40	1280	2560	1996	EE2
4. A/MOSCOW/13/98	40	20	640	1280	02/18/98	EE3
TEST ANTIGENS						
5. A/HAWAII/10/99	320	640	10	20	11/29/99	MC1
6. A/TEXAS/85/99	320	320	10	20	12/27/99	MC1
7. A/VICTORIA/370/99	320	640	10	20	07/27/99	CKCC1
8. A/BANGKOK/165/99	320	640	10	20	06/17/99	X3CC1
9. A/KOBE/314/99	320	320	10	20	12/09/99	CC1
10. A/HONG KONG/2070/99	320	640	10	10	12/03/99	CC1
11. A/WISCONSIN/06/99	160	320	5	5	12/08/99	CC2
12. A/CANADA/659/99	160	320	10	10	11/23/99	CC1
13. A/CANADA/660/99*	80	320	5	5	11/27/99	CC1
14. A/SYDNEY/116/99	160	320	10	20	UNKN	MXCC1
15. A/SENDAI/140/99	160	320	5	10	11/08/99	CC1
16. A/SENDAIH/1544/99	160	320	5	5	11/18/99	CC1
17. A/OSAKA/E-1/99	160	320	5	10	12/08/99	CC1
18. A/CHIBA/1042/99	160	320	5	10	12/09/99	CC1
19. A/GUANGXI/153/99	80	20	640	1280	07/05/99	EE1

* Used in serology tests

HEMAGGLUTINATION INHIBITION REACTIONS OF INFLUENZA H1 VIRUSES

TESTED 12/09/99

STRAIN DESIGNATION	REFERENCE FERRET ANTISERA				Date collected	Passage
	A BJ/262	B N.CAL/20	C JO/82	D MOS/13		
REFERENCE ANTIGENS						
1. A/BEIJING/262/95*	<u>640</u>	320	20	40	01/09/95	E3/E4
2. A/NEW CALEDONIA/20/99*	160	<u>320</u>	5	5	06/09/99	E4/E1
3. A/JOHANNESBURG/82/96*	80	40	<u>1280</u>	1280	1996	E4/E2
4. A/MOSCOW/13/98	40	20	640	<u>1280</u>	02/18/98	E1/E3
TEST ANTIGENS						
5. A/TEXAS/64/99	320	160	20	40	10/22/99	I2/C1
6. A/NEW CALEDONIA/18/99	320	640	10	20	06/02/99	E3/E1
7. A/NEW CALEDONIA/12/99	320	640	10	20	05/25/99	C21/C1
8. A/PERU/1798/99*	320	160	10	10	04/24/99	IX/C1
9. A/PERU/1821/99	320	160	5	10	04/28/99	IX/C1
10. A/JAPAN/255/99	320	320	10	20	01/15/99	IX/C1
11. A/CALIFORNIA/28/99	160	640	5	5	02/26/99	X/C1
12. A/CALIFORNIA/27/99	160	320	5	5	03/03/99	X/C1
13. A/BANGKOK/71/99	160	640	10	10	UNKN	24/C1
14. A/SYDNEY/223/99	160	320	5	10	07/06/99	22/C1
15. A/AUCKLAND/176/99	160	320	5	5	07/05/99	E3/E1
16. A/PERU/1621/99	160	80	5	5	03/19/99	IX/C1
17. A/ARGENTINA/03/99	80	40	640	640	07/01/99	1/C1
18. A/BRAZIL/19/99	40	20	1280	1280	07/13/99	22/C2
19. A/BRAZIL/11/99	40	20	1280	1280	07/13/99	22/C2
20. A/BUENOS AIRES/2177/99	80	20	1280	2560	05/20/99	22/C1
21. A/BUENOS AIRES/344/99	80	20	1280	1280	05/14/99	21/C2

* Used in serology tests

**Hemagglutination Inhibition Antibody Responses to the
A/Beijing/262/95* Component of the 1999-2000 Influenza Vaccine
ADULT POPULATIONS**

Population	N	Antigen	% Rise	Pre GMT	Post GMT	% with HI titer >	
						Pre Vaccine	Post Vaccine
Adult ¹							
	30	A/Beijing/262/95 X-127*	77	5	70	3	7
	30	A/Nanchang/16A/99	43	5	16	0	3
	30	A/Peru/1798/99	53	5	15	0	2
	30	A/New Caledonia/20/99	73	5	36	0	6
	30	A/Johannesburg/82/96 NIB-39	80	16	146	27	7
	30	A/Argentina/16/99	60	10	58	7	6
Adult ²							
	24	A/Beijing/262/95 X-127*	46	21	76	42	8
	24	A/Nanchang/16A/99	25	10	24	17	4
	24	A/Peru/1798/99	25	8	17	8	2
	24	A/New Caledonia/20/99	42	14	40	33	6
	24	A/Johannesburg/82/96 NIB-39	29	69	143	75	5
	24	A/Argentina/16/99	21	32	60	63	8
Adult ³							
	24	A/Beijing/262/95 X-127*	96	6	165	4	9
	24	A/Nanchang/16A/99	79	6	42	0	6
	24	A/Peru/1798/99	71	6	36	0	6
	24	A/New Caledonia/20/99	92	7	85	0	8
	24	A/Johannesburg/82/96 NIB-39	92	18	293	29	9
	24	A/Argentina/16/99	88	13	104	25	8

Preliminary Data 4/10/99

1. Sera were kindly provided by Alan Hampson, WHO Collaborating Center, Melbourne, Australia. The populations were vaccinated with 1999 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

2. Sera were kindly provided by Dr. Roland Levandowski, FDA, Bethesda, MD. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

3. Sera were kindly provided by Dr. John Wood, NIBSC, Hertfordshire, UK. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

* A/Beijing/262/95 is the H1N1 component of the vaccine.

**Hemagglutination Inhibition Antibody Responses to the
A/Beijing/262/95* Component of the 1999-2000 Influenza Vaccine
ELDERLY POPULATIONS**

Population	N	Antigen	% Rise	Pre GMT	Post GMT	% with HI titer ≥ 4	
						Pre Vaccine	Post Vaccine
Elderly ¹							
	30	A/Beijing/262/95 X-127*	50	7	26	10	3
	30	A/Nanchang/16A/99	30	6	14	0	2
	30	A/Peru/1798/99	20	6	10	0	1
	30	A/New Caledonia/20/99	40	7	17	3	3
	30	A/Johannesburg/82/96 NIB-39	40	36	113	53	8
	30	A/Argentina/16/99	27	21	49	47	6
Elderly ²							
	24	A/Beijing/262/95 X-127*	29	19	40	25	5
	24	A/Nanchang/16A/99	4	11	13	17	2
	24	A/Peru/1798/99	4	8	10	8	1
	24	A/New Caledonia/20/99	8	14	21	13	2
	24	A/Johannesburg/82/96 NIB-39	4	85	98	88	9
	24	A/Argentina/16/99	4	45	50	71	7
Elderly ³							
	24	A/Beijing/262/95 X-127*	75	6	50	0	6
	24	A/Nanchang/16A/99	42	6	14	0	2
	24	A/Peru/1798/99	38	5	14	0	2
	24	A/New Caledonia/20/99	75	7	31	0	5
	24	A/Johannesburg/82/96 NIB-39	63	15	60	42	7
	24	A/Argentina/16/99	50	12	29	21	5

Preliminary Data C10/99

1. Sera were kindly provided by Alan Hampson, WHO Collaborating Center, Melbourne, Australia. The populations were vaccinated with the 1999 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

2. Sera were kindly provided by Dr. Roland Levandowski, FDA, Bethesda, MD. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

3. Sera were kindly provided by Dr. John Wood, NIBSC, Hertfordshire, UK. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

* A/Beijing/262/95 is the H1N1 component of the vaccine.

Geographic Distribution of A/BEIJING/262/95-Like (H1N) Viruses (October 1998 - January 2000)



Oct 96-Sep 97 - 63 isolates were identified in China, Hong Kong, Japan, Singapore, Mongolia and Senegal

Oct 97-Aug 98 - 120 isolates were identified in China, Hong Kong, Singapore, Taiwan, South Africa, Russia, France and California

Oct 98-Jan 2000 - 52 isolates were identified in China, Hong Kong, Japan, Philippines, Thailand, Taiwan, Australia, New Zealand, New Caledonia, Russia, Canada and Peru

HEMAGGLUTINATION INHIBITION REACTIONS OF INFLUENZA TYPE B VIRUSES

TESTED 11/09/99

STRAIN DESIGNATION	REFERENCE FERRET ANTISERA				Date collected	Pas.
	A YAM/166	B BJ/184	C HAR/07	D SHA/07		
1. B/YAMANASHI/166/98*	<u>320</u>	80	320	5	02/21/98	E2:1
2. B/BEIJING/184/93	80	<u>160</u>	160	5	11/09/93	E2:3
3. B/HARBIN/07/94	160	80	<u>320</u>	5	03/18/94	E3:4
4. B/SHANGDONG/07/97*	5	5	5	<u>160</u>	11/03/97	E4:3
TEST ANTIGENS						
5. B/TENNESSEE/04/99*	320	160	160	5	10/06/99	X2:1
6. B/TENNESSEE/03/99	320	160	160	5	10/06/99	X2:1
7. B/TENNESSEE/02/99	160	160	160	5	10/06/99	X2:1
8. B/BRAZIL/88/99	160	80	40	5	10/04/99	C2:2
9. B/OHIO/06/99	80	80	80	5	UNKN	X:1

* Used in serology tests

HEMAGGLUTINATION INHIBITION REACTIONS OF INFLUENZA TYPE B VIRUSES

TESTED 01/07/2000

STRAIN DESIGNATION	REFERENCE FERRET ANTISERA					Date collected	Passage
	A YAM/166	B BJ/184	C HAR/07	D JOH/05	E SHA/07		
REFERENCE ANTIGENS							
1. B/YAMANASHI/166/98*	160	80	160	80	5	02/21/98	2/E1
2. B/BEIJING/184/93	80	80	160	80	5	11/09/93	2/E3
3. B/HARBIN/07/94	80	80	320	80	5	03/18/94	3/E4
4. B/JOHANNESBURG/5/99*	160	80	160	160	5	04/16/99	6/E1
5. B/SHANGDONG/07/97*	5	5	5	5	160	11/03/97	4/E3
TEST ANTIGENS							
6. B/ZAGREB/3578/99	320	320	160	640	5	UNKN	X/C1
7. B/NEW CALEDONIA/1/99	160	160	80	160	5	07/28/99	CX1/C1
8. B/VIETNAM/155/99	160	160	80	320	5	10/11/99	3/C1
9. B/CANADA/548/99	80	80	20	80	5	10/08/99	2/C1
10. B/JAPAN/3594/99	80	80	40	80	5	12/06/99	1/C1
11. B/STHAUST/17/99	80	80	40	160	5	10/01/99	X11/C1
12. B/TASMANIA/1/99	80	80	80	160	5	12/01/99	1/C1
13. B/VICTORIA/510/99	80	80	40	160	5	09/30/99	CK1/C1
14. B/WAIKATO/5/99	80	80	40	160	5	UNKN	CX1/C1
15. B/BRISBANE/18/99	80	80	40	160	5	08/19/99	CK1/C1
16. B/SHANGHAI/166/99	80	40	80	80	5	08/27/99	2/E1
17. B/WUHAN/245/99	80	80	160	160	5	08/04/99	2/E3
18. B/VIETNAM/41/99	40	40	20	80	5	08/23/99	3/C2
19. B/VIETNAM/44/99	40	40	20	80	5	08/23/99	3/C2
20. B/VIETNAM/148/99	20	40	20	80	5	09/27/99	3/C2
21. B/SHENZHEN/638/99	40	40	80	80	5	08/13/99	2/E1
22. B/SHENZHEN/654/99*	10	20	10	40	5	08/17/99	2/E3

* Used in serology tests

Geographic Distribution of B/VICTORIA/02/87-Like Viuses

(October 1998 - January 2000)



**Hemagglutination Inhibition Antibody Responses to the
B/Yamanashi/166/98* Component of the 1999-2000 Influenza Vaccine
ADULT POPULATIONS**

Population	N	Antigen	% Rise	Pre GMT	Post GMT	% with HI titer > 4	
						Pre Vaccine	Post Vaccine
Adult ¹							
	30	B/Yamanashi/166/98* ET	73	12	123	23	9%
	30	B/Tennessee/04/99 ET	80	14	156	23	9%
	30	B/Johannesburg/05/99 ET	77	15	153	23	9%
	30	B/Shanghai/180/99 ET	73	10	88	13	8%
	30	B/Shenzhen/654/99 ET	57	7	30	3	5%
	30	B/Shangdong/07/97 ET	57	13	55	23	8%
Adult ²							
	24	B/Yamanashi/166/98* ET	35	31	107	52	9%
	24	B/Tennessee/04/99 ET	33	30	98	54	9%
	24	B/Johannesburg/05/99 ET	35	30	107	52	9%
	24	B/Shanghai/180/99 ET	35	27	82	52	9%
	24	B/Shenzhen/654/99 ET	29	9	19	17	3%
	24	B/Shangdong/07/97 ET	13	14	20	25	3%
Adult ³							
	24	B/Yamanashi/166/98* ET	92	9	165	8	10
	24	B/Tennessee/04/99 ET	88	15	214	17	10
	24	B/Johannesburg/05/99 ET	88	12	196	21	10
	24	B/Shangdong/07/97 ET	58	11	45	17	6%
	24	B/Shenzhen/654/99 ET	71	6	30	0	5%
	24	B/Shanghai/180/99 ET	92	8	131	8	9%

Preliminary Data 012/2000

1. Sera were kindly provided by Alan Hampson, WHO Collaborating Center, Melbourne, Australia. The populations were vaccinated with the 1999 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

*B/Beijing/184/93-like component of the southern hemisphere vaccine.

2. Sera were kindly provided by Dr. Roland Levandowski, FDA, Bethesda, MD. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

3. Sera were kindly provided by Dr. John Wood, NIBSC, Hertfordshire, UK. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

* B/Yamanashi/166/98 is the B/Beijing/184/93-like component of the northern hemisphere vaccine.

**Hemagglutination Inhibition Antibody Responses to the
B/Yamanashi/166/98* Component of the 1999-2000 Influenza Vaccine
ELDERLY POPULATIONS**

Population	N	Antigen	% Rise	Pre GMT	Post GMT	% with HI titer ≥ 4	
						Pre Vaccine	Post Vaccine
Elderly ¹							
	30	B/Yamanashi/166/98 ET	13	26	47	43	70
	30	B/Tennessee/04/99 ET	17	31	52	48	73
	30	B/Johannesburg/05/99 ET	17	28	45	50	67
	30	B/Shanghai/180/99 ET	13	20	37	37	57
	30	B/Shenzhen/654/99 ET	27	11	20	17	43
	30	B/Shangdong/07/97 ET	10	19	26	33	40
Elderly ²							
	24	B/Yamanashi/166/98* ET	17	24	40	48	67
	24	B/Tennessee/04/99 ET	17	28	48	54	71
	24	B/Johannesburg/05/99 ET	8	29	46	50	75
	24	B/Shanghai/180/99 ET	13	24	35	46	54
	24	B/Shenzhen/654/99 ET	13	10	14	17	25
	24	B/Shangdong/07/97 ET	0	19	22	42	50
Elderly ³							
	24	B/Yamanashi/166/98* ET	71	12	65	29	75
	24	B/Tennessee/04/99 ET	71	15	90	29	75
	24	B/Johannesburg/05/99 ET	71	13	85	29	83
	24	B/Shanghai/180/99 ET	63	10	46	13	67
	24	B/Shenzhen/654/99 ET	58	8	26	13	50
	24	B/Shangdong/07/97 ET	42	10	25	13	38

Preliminary Data 01/2/2000

1. Sera were kindly provided by Alan Hampson, WHO Collaborating Center, Melbourne, Australia. The populations were vaccinated with the 1999 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

* B/Harbin/07/94 was the B/Beijing/184/93-like component of the southern hemisphere vaccine.

2. Sera were kindly provided by Dr. Roland Levandowski, FDA, Bethesda, MD. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

3. Sera were kindly provided by Dr. John Wood, NIBSC, Hertfordshire, UK. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

* B/Yamanashi/166/98 is the B/Beijing/184/93-like component of the northern hemisphere vaccine.

HEMAGGLUTINATION INHIBITION REACTIONS OF INFLUENZA H3 VIRUSES

TESTED 1/13/2000

STRAIN DESIGNATION	REFERENCE FERRET ANTISERA							Date collected	Fssage
	A SYD/5	B MOS/10	C PN/2007	D NIB-41	E NIB-42	F AK/37	G SHA/42		
1. A/SYDNEY/05/97*	640	320	640	640	320	320	320	06/23/97	CKE2/E1
2. A/MOSCOW/10/99*	320	640	320	640	320	320	320	01/15/99	E2/E3
3. A/PANAMA/2007/99*	160	320	640	320	160	320	160	07/12/99	E4
4. A/PAN/2007/99 NIB-41	320	640	640	1280	640	640	320	07/12/99	E4/E1
5. A/PAN/2007/99 NIB-42	160	640	640	1280	640	1280	320	07/12/99	E4/E1
6. A/ALASKA/37/99*	160	160	640	320	320	320	160	09/09/99	11/C2
7. A/SHANGHAI/42/99*	160	160	160	80	80	160	640	03/18/99	E1/E3
TEST ANTIGENS									
8. A/ARIZONA/16/99	640	640	640	640	320	640	640	12/14/99	11/C1
9. A/NEW MEXICO/03/99	320	640	640	640	320	640	640	11/02/99	14/C2
10. A/S. CAROLINA/05/99	320	320	640	640	320	320	320	12/09/99	12/C1
11. A/FLORIDA/13/99	320	320	320	160	160	320	320	10/30/99	10/C1
12. A/FLORIDA/16/99*	160	160	320	160	160	640	160	12/25/99	10/C1
13. A/FLORIDA/15/99	80	160	160	80	80	160	160	12/27/99	10/C1
14. A/MISSOURI/01/99	160	320	320	320	160	320	160	11/29/99	12/C1
15. A/MISSOURI/09/99	160	320	640	320	160	160	320	11/22/99	12/C1
16. A/TENNESSEE/08/99	160	160	320	160	160	160	160	12/01/99	11/C1
17. A/TENNESSEE/09/99	160	160	320	160	160	160	160	12/02/99	11/C1
18. A/KOREA/3616/99	1280	1280	1280	640	640	1280	640	12/07/99	11/C1
19. A/GERMANY/3651/99	640	1280	1280	1280	640	1280	640	12/06/99	12/C1
20. A/CANADA/599/99	640	640	640	1280	640	640	640	10/29/99	10/C1
21. A/CANADA/561/99	320	320	320	640	320	320	320	10/10/99	10/C1
22. A/SHIGA/82/99	640	1280	1280	1280	1280	2560	320	11/19/99	11/C1
23. A/SAPPORO/304/99	320	640	640	1280	640	640	320	11/29/99	11/C1
24. A/SHENZHEN/453/99	320	320	640	320	160	320	320	08/03/99	10/C1
25. A/ENGLAND/635/99	320	640	640	640	320	640	320	UNKN	10/C1
26. A/HONG KONG/2019/99	320	320	640	160	320	320	320	11/19/99	11/C1
27. A/HONG KONG/1881/99	160	320	320	160	320	640	320	09/30/99	10/C1
28. A/KOREA/3611/99	160	160	160	160	80	160	160	12/07/99	11/C1

* Used in serology tests

HEMAGGLUTINATION INHIBITION REACTIONS OF INFLUENZA H3 VIRUSES

TESTED 12/15/99

REFERENCE ANTIGENS	REFERENCE FERRET ANTISERA						Dat collecte	Passage
	A SYD/5	B MOS/10PN/2007	C NIB-41	D NIB-41	E NIB-42	F SHA/42		
1. A/SYDNEY/05/97*	<u>640</u>	320	320	640	320	320	06/23/9	CK2E2/E1
2. A/MOSCOW/10/99*	640	<u>2560</u>	1280	2560	1280	1280	01/15/9	E2/E3
3. A/PANAMA/2007/99*	160	320	<u>640</u>	320	320	160	07/12/9	E4
4. A/PAN/2007/99 NIB-41	640	640	640	<u>1280</u>	1280	320	07/12/9	E4/E1
5. A/PAN/2007/99 NIB-42	320	640	640	1280	<u>640</u>	320	07/12/9	E4/E1
6. A/SHANGHAI/42/99*	160	160	160	80	80	<u>640</u>	03/18/9	E1/E3
TEST ANTIGENS								
7. A/ARIZONA/12/99	1280	2560	1280	1280	640	1280	10/28/9	M1/C2
8. A/COLORADO/06/99	1280	1280	1280	1280	640	640	11/09/9	X2/C2
9. A/COLORADO/08/99	640	1280	640	1280	640	640	11/22/9	X2/C2
10. A/WASHINGTON/20/99	640	1280	1280	2560	1280	640	11/01/9	M2/C2
11. A/WASHINGTON/21/99	640	640	1280	1280	640	320	11/04/9	M1/C2
12. A/MASS/09/99	640	640	640	640	320	640	10/19/9	X1/C2
13. A/HONG KONG/1180/99	1280	1280	1280	1280	640	640	04/24/9	C4
14. A/HONG KONG/1182/99	1280	1280	1280	1280	640	640	04/23/9	C4
15. A/SHENZHEN/469/99	1280	1280	1280	1280	640	640	09/20/9	C2/C1
16. A/SHENZHEN/636/99	640	1280	640	640	320	640	09/20/9	C2/C1
17. A/SHENZHEN/527/99	640	640	640	640	320	320	09/20/9	C2/C1
18. A/SHENZHEN/476/99	320	320	640	640	320	160	07/12/9	C3/C1

* Used in serology tests

**Hemagglutination Inhibition Antibody Responses to the
A/Sydney/05/97(H3N2) Component of the 1999-2000 Influenza Vaccine
ADULT POPULATIONS**

Population	N	Antigen	% Rise	Pre GMT	Post GMT	% with HI titer ≥ 4	
						Pre Vaccine	Post Vaccine
Adult ¹							
	30	A/Sydney/05/97 Resvir-13*	73	7	58	10	61
	30	A/Moscow/10/99	63	6	30	3	51
	30	A/Brazil/30/99	60	6	42	3	61
	30	A/Hong Kong/1221/99	70	7	50	10	61
	30	A/Shanghai/42/99	47	5	16	0	31
Adult ²							
	24	A/Sydney/05/97 Resvir-13*	29	25	67	58	71
	24	A/Moscow/10/99	29	14	31	17	51
	24	A/Brazil/30/99	46	17	53	33	71
	24	A/Hong Kong/1221/99	50	23	71	50	71
	24	A/Shanghai/42/99	25	9	16	8	21
Adult ³							
	24	A/Sydney/05/97 Resvir-13*	92	8	147	13	10
	24	A/Moscow/10/99	88	7	53	0	81
	24	A/Brazil/30/99	92	7	107	13	91
	24	A/Hong Kong/1221/99	96	7	101	8	91
	24	A/Shanghai/42/99	67	5	23	0	41

Preliminary Data 008/99

1. Sera were kindly provided by Aian Hampson, WHO Collaborating Center, Melbourne, Australia. The populations were vaccinated with the 1999 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.
2. Sera were kindly provided by Dr. Roland Levandowski, FDA, Bethesda, MD. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.
3. Sera were kindly provided by Dr. John Wood, NIBSC, Hertfordshire, UK. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15 μ g each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

* A/Sydney/05/97 is the H3N2 component of the vaccine.

**Hemagglutination Inhibition Antibody Responses to the
A/Sydney/05/97(H3N2)* Component of the 1999-2000 Influenza Vaccine
ELDERLY POPULATIONS**

Population	N	Antigen	% Rise	Pre GMT	Post GMT	% with HI titer > 40	
						Pre Vaccine	Post Vaccine
Adult ¹							
	30	A/Sydney/05/97 Resvir-13*	47	11	41	13	47
	30	A/Moscow/10/99	40	8	22	3	30
	30	A/Brazil/30/99	60	7	31	7	33
	30	A/Hong Kong/1221/99	53	9	36	10	40
	30	A/Shanghai/42/99	23	6	12	0	23
Adult ²							
	24	A/Sydney/05/97 Resvir-13*	38	13	39	25	58
	24	A/Moscow/10/99	21	10	20	17	38
	24	A/Brazil/30/99	54	11	37	21	54
	24	A/Hong Kong/1221/99	54	13	48	25	75
	24	A/Shanghai/42/99	13	10	17	25	33
Adult ³							
	24	A/Sydney/05/97 Resvir-13*	83	12	127	25	88
	24	A/Moscow/10/99	75	9	60	17	79
	24	A/Brazil/30/99	79	11	87	25	83
	24	A/Hong Kong/1221/99	83	12	98	29	92
	24	A/Shanghai/42/99	54	7	24	8	46

Preliminary Data 098/99

1. Sera were kindly provided by Alan Hampson, WHO Collaborating Center, Melbourne, Australia. The populations were vaccinated with the 99 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.
2. Sera were kindly provided by Dr. Roland Levandowski, FDA, Bethesda, MD. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.
3. Sera were kindly provided by Dr. John Wood, NIBSC, Hertfordshire, UK. The populations were vaccinated with the 1999-2000 trivalent influenza vaccine containing 15µg each of A/Sydney/05/97(H3N2)-like, A/Beijing/262/95(H1N1)-like, and B/Beijing/184/93-like hemagglutinin.

* A/Sydney/05/97 is the H3N2 component of the vaccine.