

CHINA VACCINE PRODUCERS

Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Harbin Veterinary Research Institute		Harbin, Heilongjiang province	A/Turkey/England/N-28/73 Subtype H5N2 Low pathogenicity	Inactivated monovalent	8log ₂ reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003	www.hvri.ac.cn	
Harbin Veterinary Research Institute		Harbin, Heilongjiang province	A/Goose/Guangdong/1996 Subtype H5N1 Low pathogenicity	Inactivated monovalent				Used for ducks and other waterfowl in Vietnam
Harbin Veterinary Research Institute		Harbin, Heilongjiang province	A recombinant virus from A/Goose/Guangdong/1996 and human influenza vaccine virus H5N1	Inactivated recombinant	9log ₂ reached by the third week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 25 weeks	Jan. 2005	www.hvri.ac.cn	High specificity, antibody level and long maintain time, vaccinated water fowl do not shed virus and are resistant against infection proved by the laboratory results
Harbin Veterinary Research Institute		Harbin, Heilongjiang province	A recombinant avian pox virus expressed H5 from A/Goose/Guangdong/1996	Live recombinant avian pox virus vectored H5	7log ₂ reached by the second week after vaccination protective antibody titers maintained for 26 weeks	Jan. 2005	www.hvri.ac.cn	Induced only antibody against specific protein, helpful in differentiation of the immune and the infection. The immune efficiency is less than the other two vaccines, and price is higher. Only for chicken
Zhengzhou Biopharm Co. Ltd	China Animal Husbandry Group	Zhengzhou City, Shandong province	A/Turkey/England/N-28/73 subtype H5N2	Inactivated monovalent	8log ₂ reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003		

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Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Qingdao Yebio Bioengineering Co. Ltd	National Animal Quarantine Institute of the Ministry of Agriculture	Qingdao City, Shandong province	A/Turkey/England/N-28/73 Subtype H5N2	Inactivated monovalent	8log2 reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003	www.yebio.com.cn	
Qingdao Yebio Bioengineering Co. Ltd	National Animal Quarantine Institute of the Ministry of Agriculture	Qingdao City, Shandong province	H9	Inactivated bivalent			www.yebio.com.cn	
Qingdao Yebio Bioengineering Co. Ltd	National Animal Quarantine Institute of the Ministry of Agriculture	Qingdao City, Shandong province	H5N2/H9	Inactivated monovalent	8log2 reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003	www.yebio.com.cn	
Guangdong Yongshun Bio-pharm Co.Ltd		Guangdong province	A/Turkey/England/N-28/73 Subtype H5N2	Inactivated monovalent	8log2 reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003		
Zhaoqing Dahua agriculture Bio-pharm Co.Ltd	Veterinary College of Southern China Agriculture University	Zhaoqing City, Guangdong	A/Turkey/England/N-28/73 Subtype H5N2	Inactivated monovalent	8log2 reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003	http://www.un-pur.org/gongyingshang-mulu/yiyao/zhaoqing/zhaoqing.htm	
Liaoning Yikang Bioengineering Co.Ltd		Liaoyang City, Liaoning Province	A/Turkey/England/N-28/73 Subtype H5N2	Inactivated monovalent	8log2 reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003		
Nanjing Merial Animal Products Co., Ltd	China Animal Husbandry Group	Nanjing City, Jiangsu province	A/Turkey/England/N-28/73 Subtype H5N2	Inactivated monovalent	8log2 reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003		
Qilu Animal Health Products Factory		Ji'nan City, Shandong province	A/Turkey/England/N-28/73 Subtype H5N2	Inactivated monovalent	8log2 reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003	www.qiludb.com	
Chengdu Jianghua Bioproducts Co.Ltd	Jianghua Group	Ziyang City, Sichuan province	A/Turkey/England/N-28/73 Subtype H5N2	Inactivated monovalent	8log2 reached by the fifth week after vaccination and maintained for 4 weeks, protective antibody titers maintained for 23 weeks	Dec. 2003	http://www.jing-huagroup.net/main.asp	
Merial International Trading Company	Merial (France)		H5N2	Inactivated monovalent				Commercial name: FLU H5N2 Formalin inactivated. Mineral oil adjuvant

FRANCE VACCINE PRODUCERS

Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Merial			H9N2 or H7N1 (Some H7N3) strains as separate vaccines	Inactivated monovalent				
Merial			A/chicken/Italy/1067/99 (H7N1) and A/chicken/Italy/22A/98 (H5N9)	Inactivated bivalent			www.merial.com	Commercial name: BioFlu H7N1 and H5N9. For chicken
Merial			H5 from A/Turkey/Ireland/83 recombinant Fowlpox vector	Recombinant live			www.merial.com	Commercial name: Trovac AIV H5. Protection after day old vaccination birds up until 20 weeks of age. The vaccine is produced in USA
Laprovét S.A.S		Tours, Cedex 2, France	H5N2	Inactivated monovalent				Commercial name: ITA-FLU. Formalin inactivated. Mineral oil adjuvant. The vaccine is produced in Mexico
Ceva Santé Animale SA		Libourne, France	A/Chicken/Mexico/232/94/CPA (H5N2) Oil emulsified	Inactivated monovalent	8Log 2 Four weeks after vaccination at 10 days/Subcutaneous	Approved 2004	www.ceva.com	Commercial name: FLU-KEM. Binary ethyleneimine (BEI) inactivated. Mineral oil adjuvant. The vaccine is produced in Mexico through CEVA de MEXICO

NETHERLANDS VACCINE PRODUCERS

Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Intervet International b.v.		Boxmeer, Netherlands	A/Chicken/Mexico/232/94/CPA (H5N2 or H5N6)	Inactivated			www.intervet.com	Commercial name: Nobilis Influenza H5N2 or Nobilis Influenza H5N6. Formalin or beta-propiolactone inactivated. Mineral oil adjuvant. The vaccine is produced in Mexico and Spain.
Intervet			A/CK/Italy/473/99 (H7N1)	Inactivated			www.intervet.com	Commercial name: Nobilis Influenza H7N1. Oil adjuvant
Intervet			A/duck/Potsdam/15/80 (H7N7)	Inactivated			www.intervet.com	Commercial name: Nobilis Influenza H7N7

PAKISTAN VACCINE PRODUCERS

Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Sindh Vaccine Production Centre		Karachi, Pakistan	H7N3 and H9N2 strains, separate or combined products					
Biolab (pvt) Ltd		Rawalpindi, Pakistan	H7N3 and H9N2 strains for both separate and combined products					
Avicina Laboratories		Lahore, Pakistan	H7N3 and H9N2 strains for both separate and combined products					
Otoman Pharma		Lahore, Pakistan	H7N3 and H9N2 strains for both separate and combined products					

MEXICO VACCINE PRODUCERS

Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Intervet		Mexico City	A/Chicken/Mexico/232/94/CPA (H5N2)Oil emusified	Inactivated monovalent	8log 2. Four weeks after vaccination at 10 days of age/Subcutaneous	Approved 2004	www.intervet.com.mx	
Intervet Mexico	Intervet (Netherlands)	Huixquilucan	H5N2 or H5N6	Inactivated monovalent				Commercial name: Nobilis influenza H5. Mineral oil adjuvant. The same vaccine is supplied by Intervet international b.v. in Netherlands
Boehring Ingelheim Vetmedica, S.A. de C.V.		Guadalajara Jalisco	A/Chicken/Mexico/232/94/CPA (H5N2) Oil emusified	Inactivated monovalent	8Log 2.Four weeks after vaccination at 10 days/ Subcutaneous	Approved 2004	www.lineavolvac.com	Mineral oil adjuvant. This same vaccine produced in Mexico is supplied in Germany through Boehringer Ongelheim Vetmedica GmbH
Avimex laboratories		Mexico City	A/Chicken/Mexico/232/94/CPA (H5N2) Oil emusified	Inactivated monovalent	8Log 2.Four weeks after vaccination at 10 days/ Subcutaneous	Approved 2004	www.avimex.com.mx	
Investigación Aplicada S.S. (IASA)		Tehuacan Puebla	A/Chicken/Mexico/232/94/CPA (H5N2) Oil emusified	Inactivated monovalent	8Log 2.Four weeks after vaccination at 10 days/ Subcutaneous	Approved 2004	www.iasa.com.mx	
Ceva de Mexico	Ceva Santé Animale SA (France)	Mexico City	A/Chicken/Mexico/232/94/CPA (H5N2) Oil emusified	Inactivated monovalent	8Log 2.Four weeks after vaccination at 10 days/ Subcutaneous	Approved 2004	www.ceva.com	Commercial name: FLU-KEM. Mineral oil adjuvant This vaccine is supplied in France through CEVA Santé Animale
			A/Chicken/Mexico/232/94 (H5N2 + La Sota NDV)	Inactivated Bivalent				Commercial name: NEW-FLU-KEM AI and Newcatle disease vaccine

USA VACCINE PRODUCERS

Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Biomune vaccines	Ceva Santé Animale SA	Lenexa - Kansas, USA	A/Turkey/Wisconsin/68 (H5N9)	Inactivated				Commercial name: Layermune AIV H5N9. Beta-propiolactone inactivated. Mineral oil adjuvant.
			A/Chicken/New York/273874/03 (H7N2)	Inactivated				Commercial name: Layermune AIV H7N2
			A/Turkey/Utah/24721-10/95 (H7N3)	Inactivated				Commercial name: Layermune AIV H7N3
Fort Dodge Animal Health		Overland Park, USA	H5N3	Inactivated				Commercial name: Poulvac Flu Fend I H5N3 RG Formalin inactivated. Water in oil adjuvant.
Fort Dodge Animal Health		Overland Park, USA	H5N3	Inactivated				Commercial name: Inactivated AIV type A, H5N2, H5N9, H7N2, H7N3 Formalin inactivated. Water in oil adjuvant.

ITALY VACCINE PRODUCERS

Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Merial Italy Spa	Merial (France)	Italy	H5N9	Inactivated monovalent	Minimum HI antibody response of 1:32 in vaccinated birds			Commercial name: Gallimune Flu H5N9. Beta-propiolactone inactivated. Mineral oil adjuvant.

GERMANY VACCINE PRODUCERS

Laboratory	Affiliation	Location	Strain	Type	Antibody Levels	Established Production	Website	Comments
Boehringer Ingelheim Vetmedica, GmbH		Ingelheim am Rhein, Germany	A/Chicken/Mexico/232/94/CPA (H5N2) Oil emulsified	Inactivated monovalent	8Log 2. Four weeks after vaccination at 10 days/Subcutaneous.			Mineral oil adjuvant. The vaccine is produced in Mexico by Boehringer Ingelheim Vetmedica S.A. de C.V.