

Papel de las nuevas vacunas antigripales

Carlos Rodrigo Gonzalo-de-Liria

Servicio de Pediatría. Hospital Universitario Germans Trias i Pujol
Universidad Autónoma de Barcelona
Consejo asesor en vacunaciones de la Generalitat de Cataluña

Nuevas vacunas inactivadas de la gripe

- Adyuvadas
- Tetravalentes
- Intradérmicas
- Preparadas en cultivos celulares
- Basadas en genética inversa
- Basadas en ADN

Adjuvants used and others under investigation in the context of influenza vaccines

Adjuvant category	Types
Oil-in-water emulsions	<ul style="list-style-type: none"> • MF59* • AS03* • AF03** • CoVaccine HT**
Saponins and glycolipids	<ul style="list-style-type: none"> • QS-21*** • ISCOMATRIX** • Alpha-GalCer (alpha-galactosylceramide)**
Liposomes	<ul style="list-style-type: none"> • Virosomes* • CCS (ceramide carbamoyl-spermine)** • CAF01 (cationic liposomes and synthetic mycobacterial cord factor)** • Vaxfectin**

*in clinical use; **investigated in animal model; ***in clinical development

Adjuvant category	Types
Bacterial toxins/ components	<ul style="list-style-type: none"> • CT (Cholera toxin)** • LT (<i>Escherichia coli</i> labile enterotoxin)*** • Chitosan** • Salmonella and <i>Escherichia coli</i> flagellins**
Cytokines	<ul style="list-style-type: none"> • IL-12, IL-23, IL-28B** • GM-CSF (Granulocyte-Macrophage Colony Stimulating Factor)** • Type 1 IFN (IFNalpha)**
TLR agonists/ immunomodulators	<ul style="list-style-type: none"> • Synthetic lipid A adjuvant (TLR-4)** • Bacterial flagellines (TLR-5)** • CpG (oligodeoxynucleotide) (TLR-9)*** • PolyI:polyC12U [(synthetic double-stranded RNA (dsRNA))] (TLR-3)** • IC31 (oligodeoxynucleotide) (TLR-9)** • sLAG-3 (IMP321) (ligand for MHC class II)***

ORIGINAL ARTICLE

Oil-in-Water Emulsion Adjuvant with Influenza Vaccine in Young Children

Timo Vesikari, M.D., Markus Knuf, M.D., Peter Wutzler, M.D.,
Aino Karvonen, M.D., Dorothee Kieninger-Baum, M.D.,
Heinz-Josef Schmitt, M.D., Frank Baehner, M.D., Astrid Borkowski, M.D.,
Theodore F. Tsai, M.D., and Ralf Clemens, M.D.

N Engl J Med 2011;365:1406-16

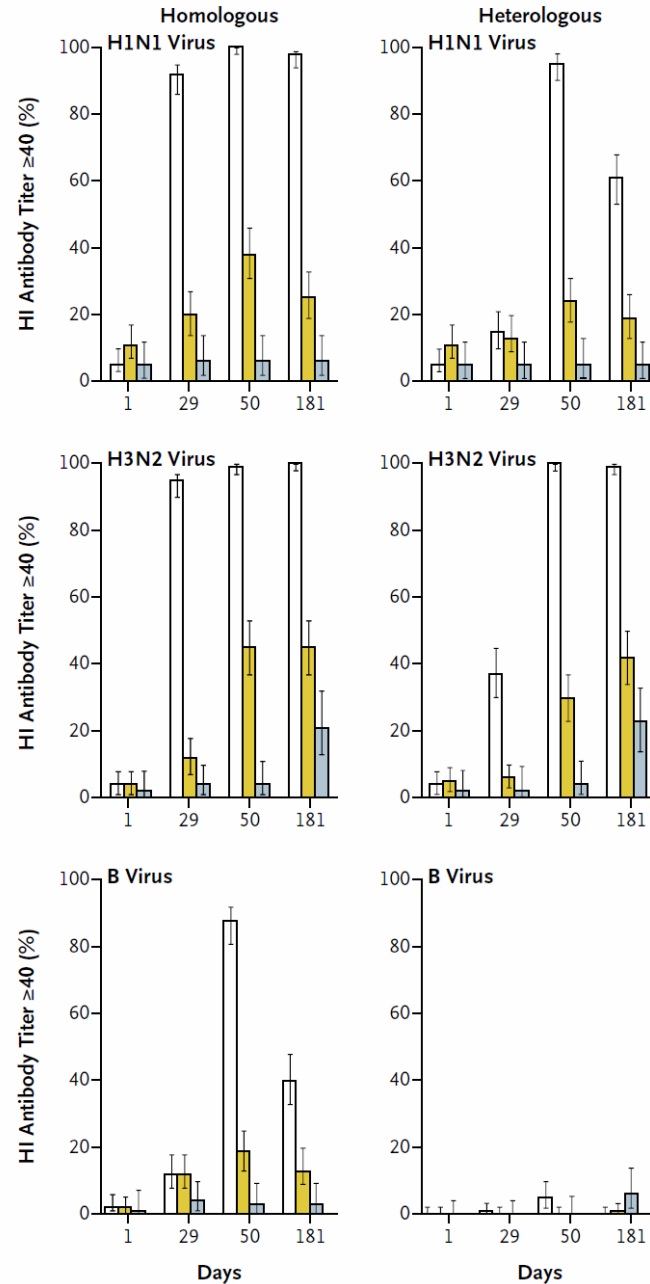
OCTOBER 13, 2011

Age Group and Vaccine	Confirmed Cases of Influenza	Relative Efficacy (95% CI) [†]
	<i>no. of children/total no.</i>	<i>percent</i>
Efficacy against vaccine-matched strains		
6 to <72 mo		
ATIV vs. control	9/1937 vs. 41/993	89 (78 to 95)
TIV vs. control	44/1772 vs. 41/993	45 (16 to 64)
ATIV vs. TIV	9/1937 vs. 44/1772	80 (59 to 90)
36 to <72 mo		
ATIV vs. control	2/834 vs. 22/427	96 (81 to 99)
TIV vs. control	22/777 vs. 22/427	48 (8 to 71)
ATIV vs. TIV	2/834 vs. 22/777	91 (63 to 98)
6 to <36 mo		
ATIV vs. control	7/1103 vs. 19/566	81 (49 to 93)
TIV vs. control	22/995 vs. 19/566	41 (−9 to 68)
ATIV vs. TIV [‡]	7/1103 vs. 22/995	68 (27 to 86)
6 to <24 mo		
ATIV vs. control [‡]	4/820 vs. 8/401	75 (20 to 92)
TIV vs. control [‡]	15/706 vs. 8/401	2 (−129 to 58)
ATIV vs. TIV [‡]	4/820 vs. 15/706	75 (25 to 91)

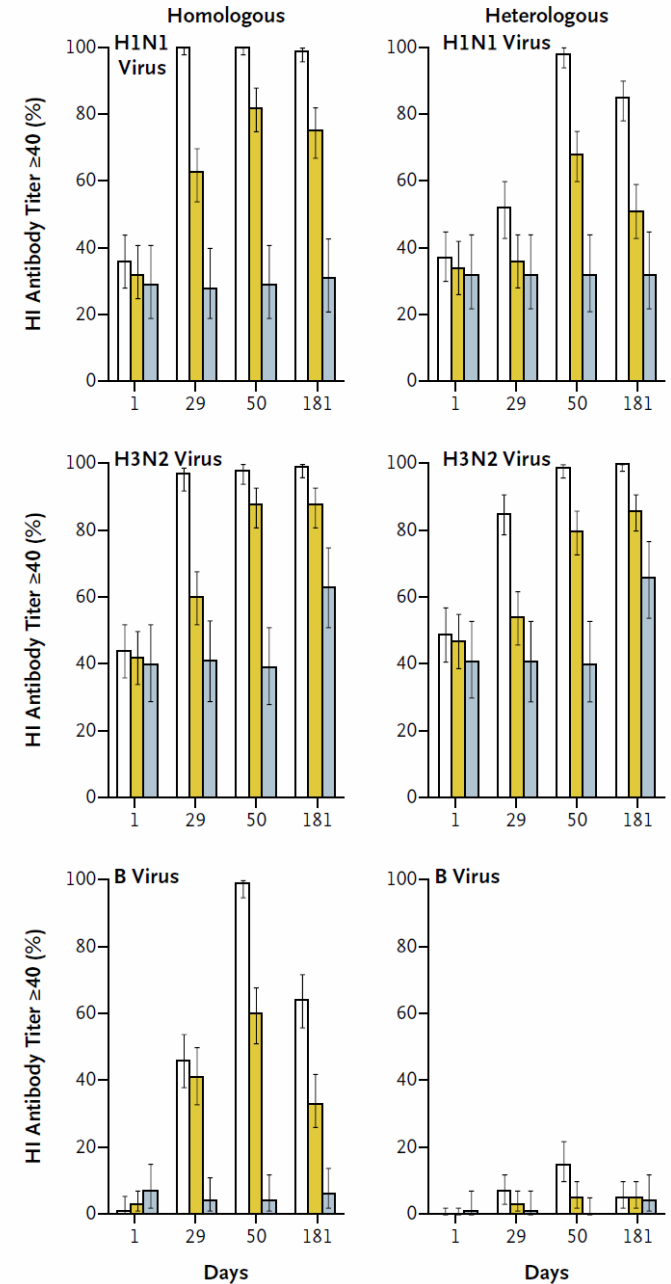
Seroprotective HI antibody titers, according to age group, vaccine group, and virus strain

□ ATIV ■ TIV ■ Control vaccine

A 6 to <36 Mo Old



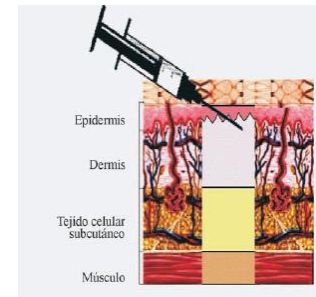
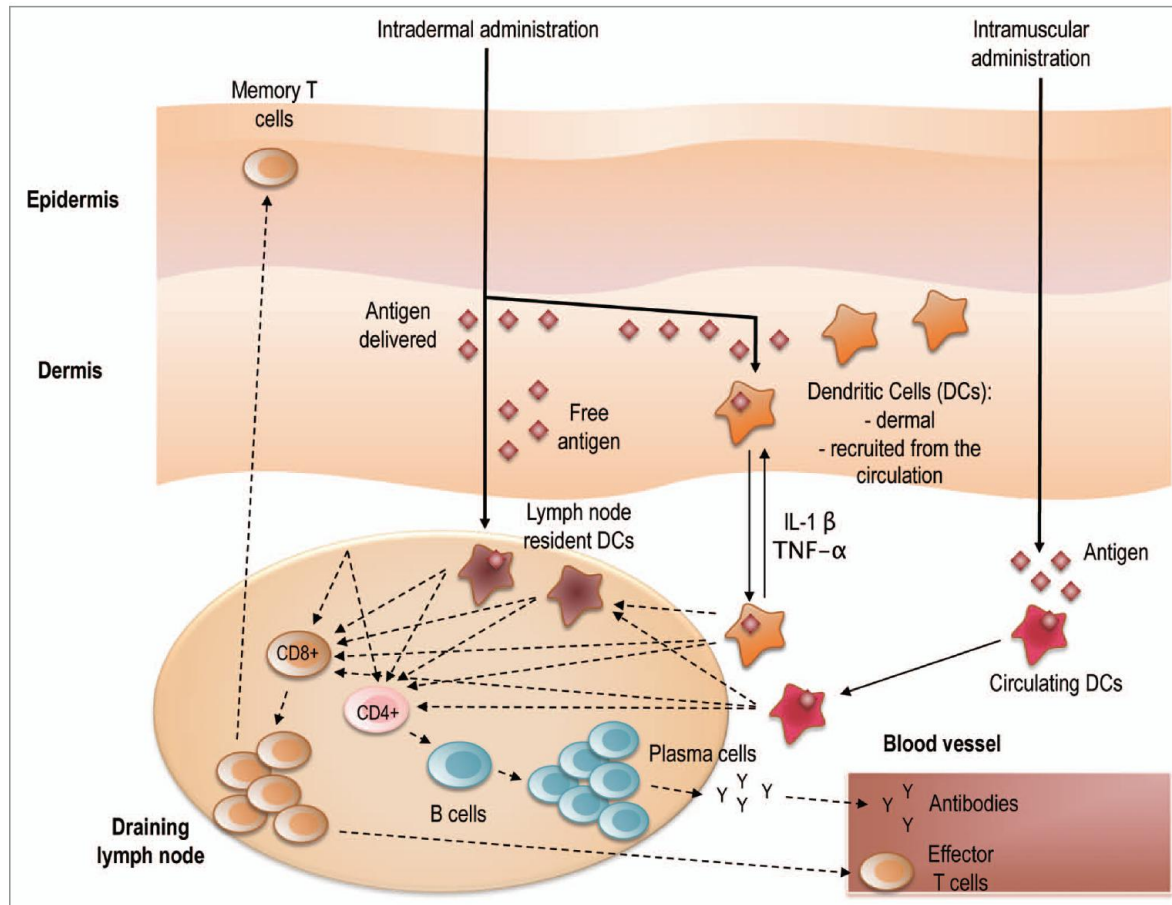
B 36 to <72 Mo Old



“The use of TIV with the MF59 adjuvant, which we studied, is a potentially effective option for children 6 to less than 72 months of age, with the additional potential advantages of increased heterovariant coverage, a longer duration of protection, and, for some strains, protection after a single dose.”

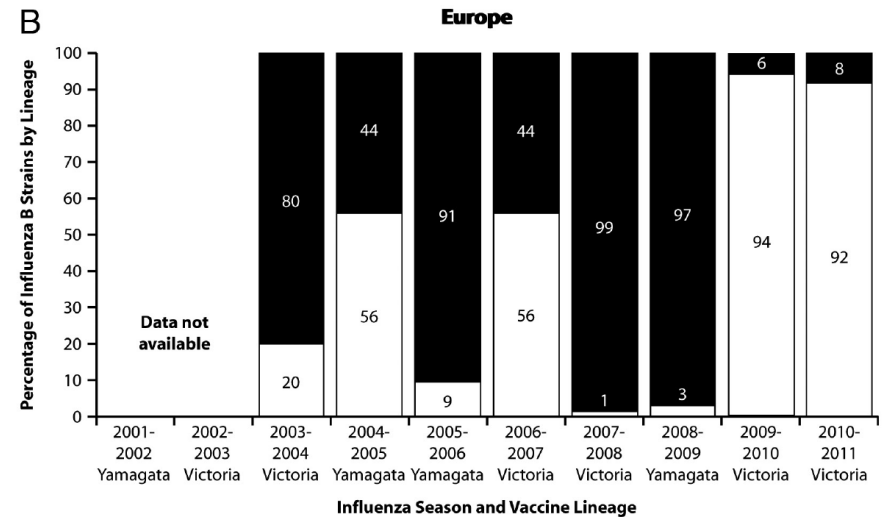
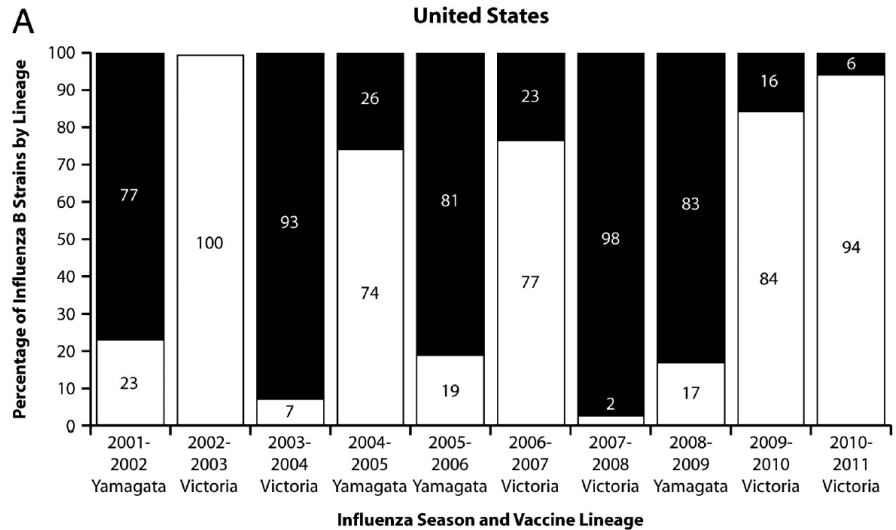
Vacunas antigripales intradérmicas

Mechanisms and cells involved in the innate and adaptive immune response following administration of a vaccine antigen using the **intradermal** and intramuscular route



Vacunas antigripales inactivadas tetravalentes

Influenza B circulation by lineage: US and Europe data for 2001 to 2011



■ Opposite-Lineage Influenza B

□ Recommended-Lineage Influenza B