Vaccin(s) contre l'hépatite E

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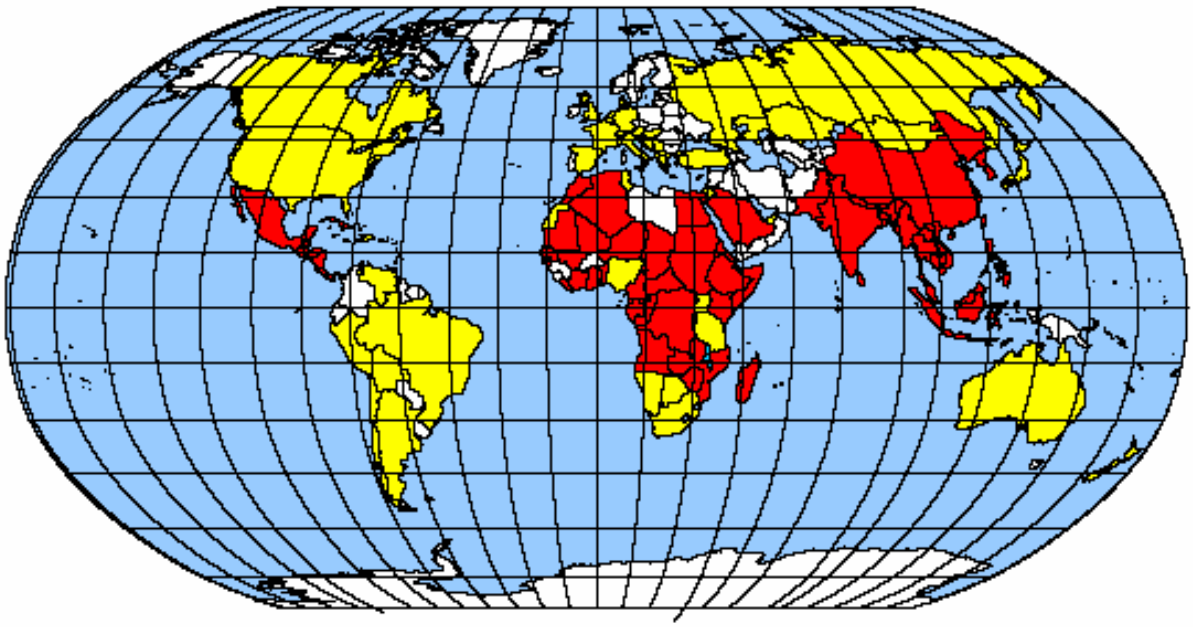
CEMI 15 – 17 et 18 mai 2010 Institut Pasteur Paris

Répartition mondiale de l 'hépatite E

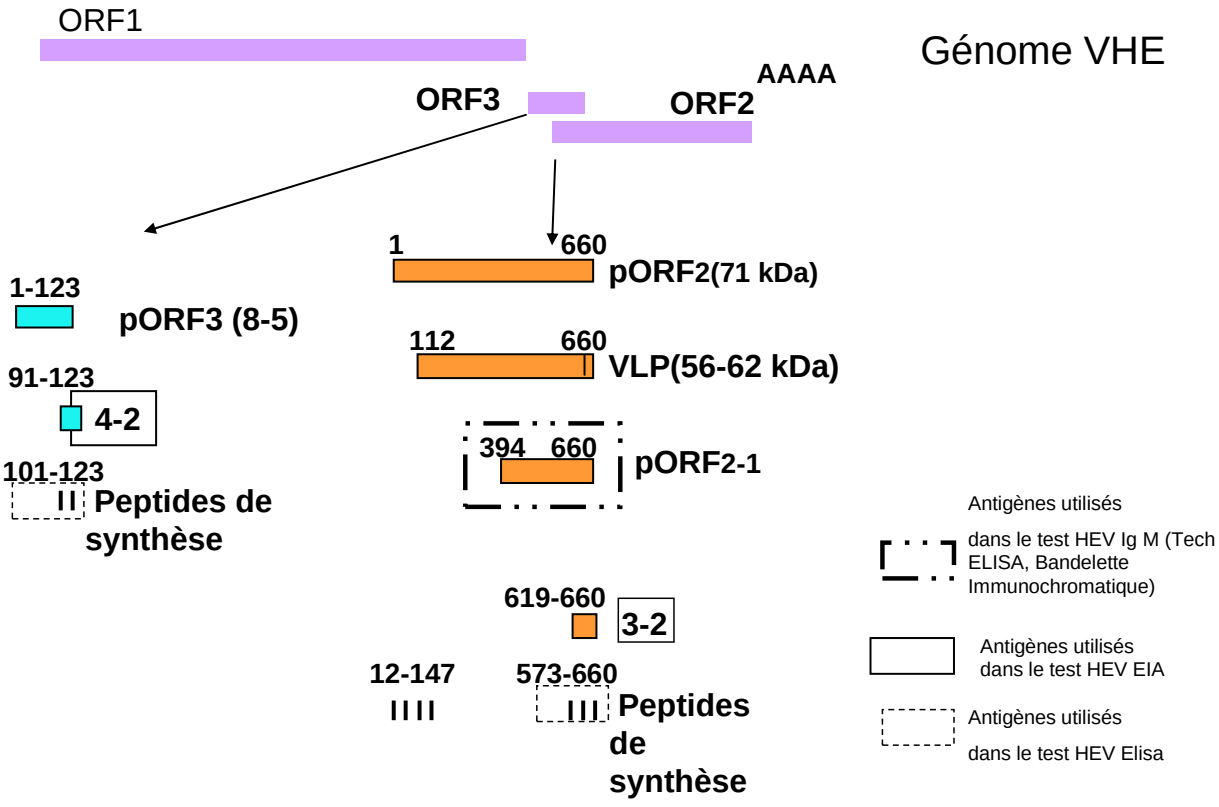


épidémies

Cas sporadiques

Virus de l'Hépatite E

Cibles antigéniques du virus de l'hépatite E



Structure 3D VHE -VLP

S: AA 118-313

P1 : AA 314-453

P2: AA 454-606

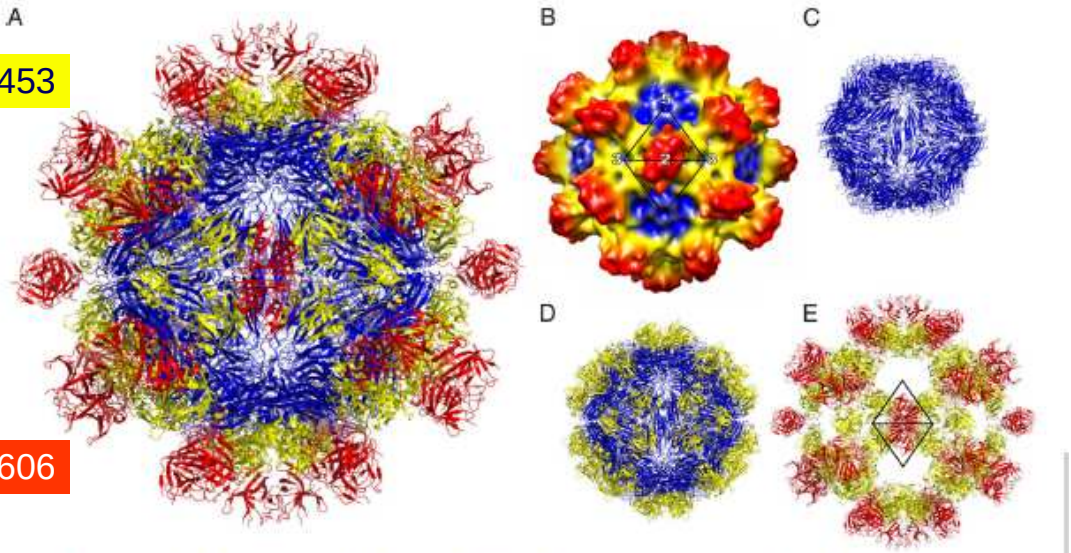
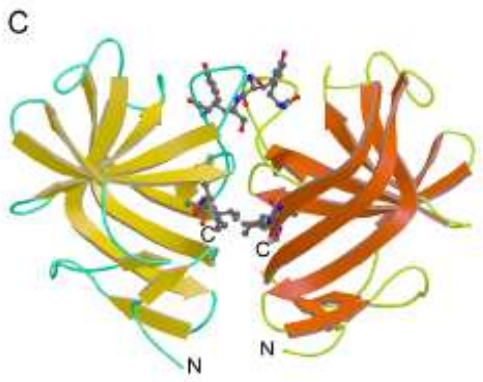


Fig. 1. Structure of the hepatitis E virus-like particle (VLP) (T = 1). (*A*) Crystal structure of HEV VLP. The 3 domains, S, P1, and P2 are colored blue, yellow, and red, respectively. The VLP is positioned in a standard orientation with the 3 2-fold icosahedral symmetry axes aligned along the vertical, horizontal, and viewing directions, respectively. (*B*) Cryo-EM reconstruction at 14 Å resolution. The surface is colored by radial depth cue from blue, yellow, to red. (*C*) HEV VLP with only the S domain. (*D*) VLP with S and P1 domains. (*E*) VLP with P1 and P2 domains.

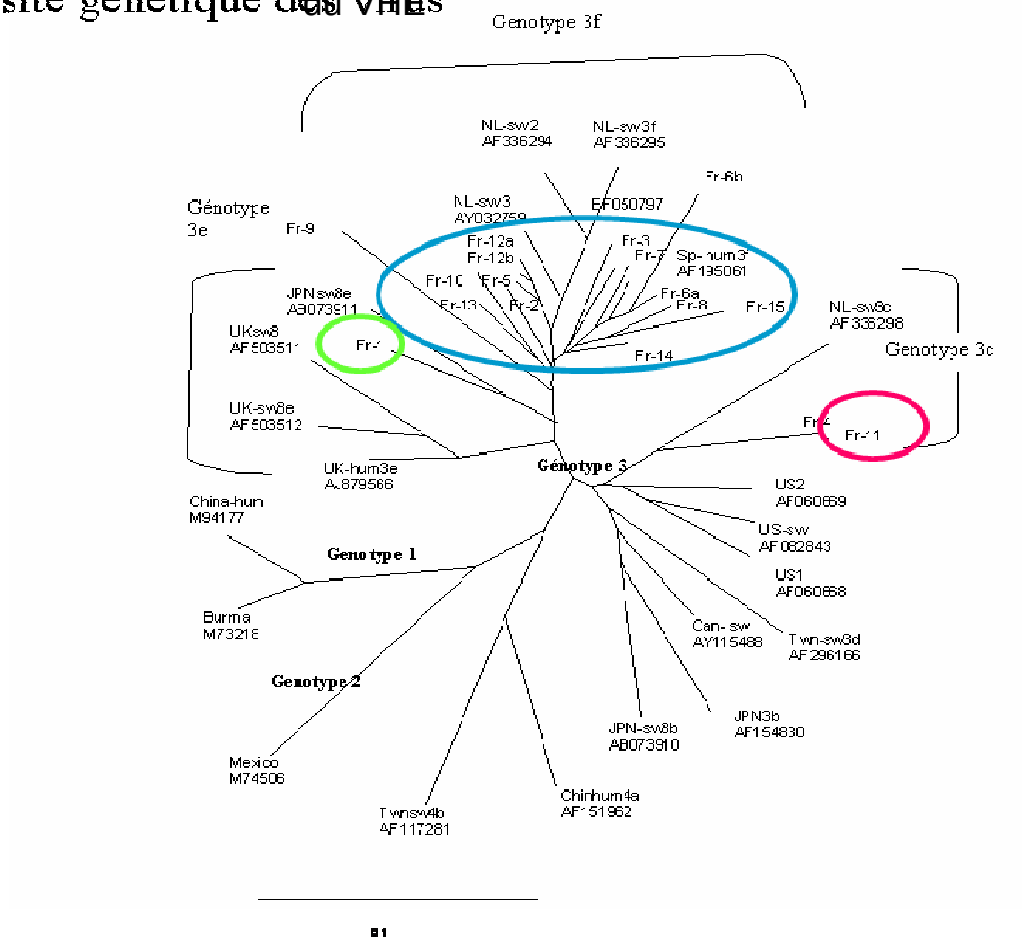
Guu et al., PNAS 2009

Structure 3D VHE domain E2 (aa 394-606



Li et al., PLOS 2009

Diversité génétique des virus



Passage de barrière d'espèce des virus de l'hépatite E

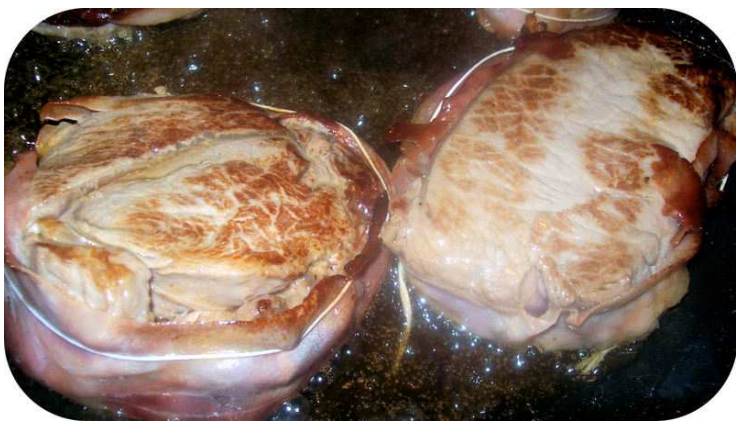
Génotype	Hôte naturel	Modèle expérimental	Infection
1 et 2	Homme	Macaque	+
		Porc	-
		Rat	+
3	Homme	Macaque	+
		Porc	+
3	Porc	Macaque	+
		Porc	+
		Homme	ND
		Rat	ND

Pavio et al., Virologie 2006, N°5

Prévention de l'infection à VHE

- Prévention spécifique: vaccination

Prévention non spécifique:



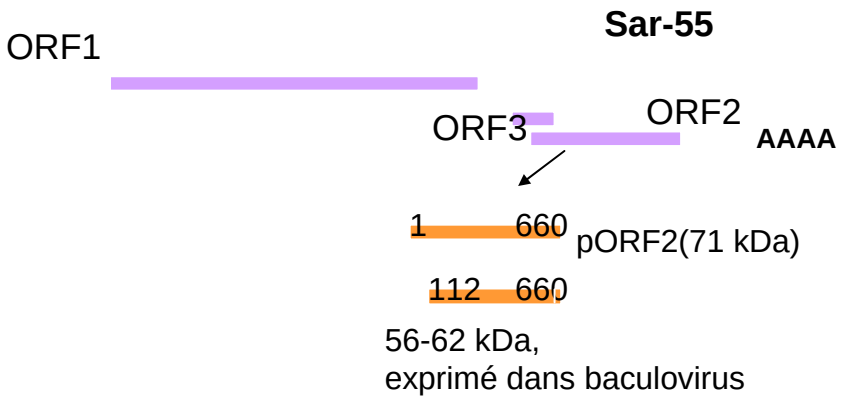
Alertes sanitaires,
Ministère de santé

Prévention de l'hépatite E - Recommandations aux consommateurs

19 mai 2009

- hépatopathies chroniques sous jacentes
- sujets ID
- femmes enceintes

Essais vaccinaux



2006: Essai phase2, double aveugle

- N= 2000 (1000 vaccinés contre le VHE, 1000 placebo)
- Protocole: 3 doses (M0, M1, M6)

Candidats vaccins

Firme	Ag	Production	Adjuvant
GSK Belgique	Capside recombinante	Expression baculovirus	Al
Wantai (Chine)	Capside recombinante	E coli	Al

Table 1. Efficacy of the rHEV Vaccine against HEV.

Period of Observation	Subjects with HEV Infection		Vaccine Efficacy*
	Vaccine	Placebo	
	no./total no.		*% (95% CI)*
From 14 days after dose 3 until end of study (a priori primary end point)	3/898	66/896	95.5 (85.6 to 98.6)
From 14 days after dose 2 until dose 3 (a priori secondary end point)	1/960	7/961	85.7 (−16.0 to 98.2)
From 14 days after dose 2 until 14 days after dose 3 (a posteriori secondary end point)	1/960	8/961†	87.5 (0.1 to 98.4)
From dose 1 until end of study (exploratory end point)	9/1000	78/1000	88.5 (77.1 to 94.2)

* Efficacy was estimated as 1 minus the relative risk, with the 95% CI based on the Mantel–Haenszel CI for the relative risk.
† One additional case occurred 6 days after the administration of dose 3, before the surveillance period for the a priori primary end point.

N Engl J Med 2007; 356

Perspectives vaccinales

- Candidat vaccin: efficacité clinique
- Réaction croisée quelque soit le génotype?
  - G4 (Huang et al. Arch Virol 2009)
- Indications vaccinales ?