



Development of a small scale facility to evaluate the efficiency of commercially available masks and respirators against an aerosol of Influenza A virus.

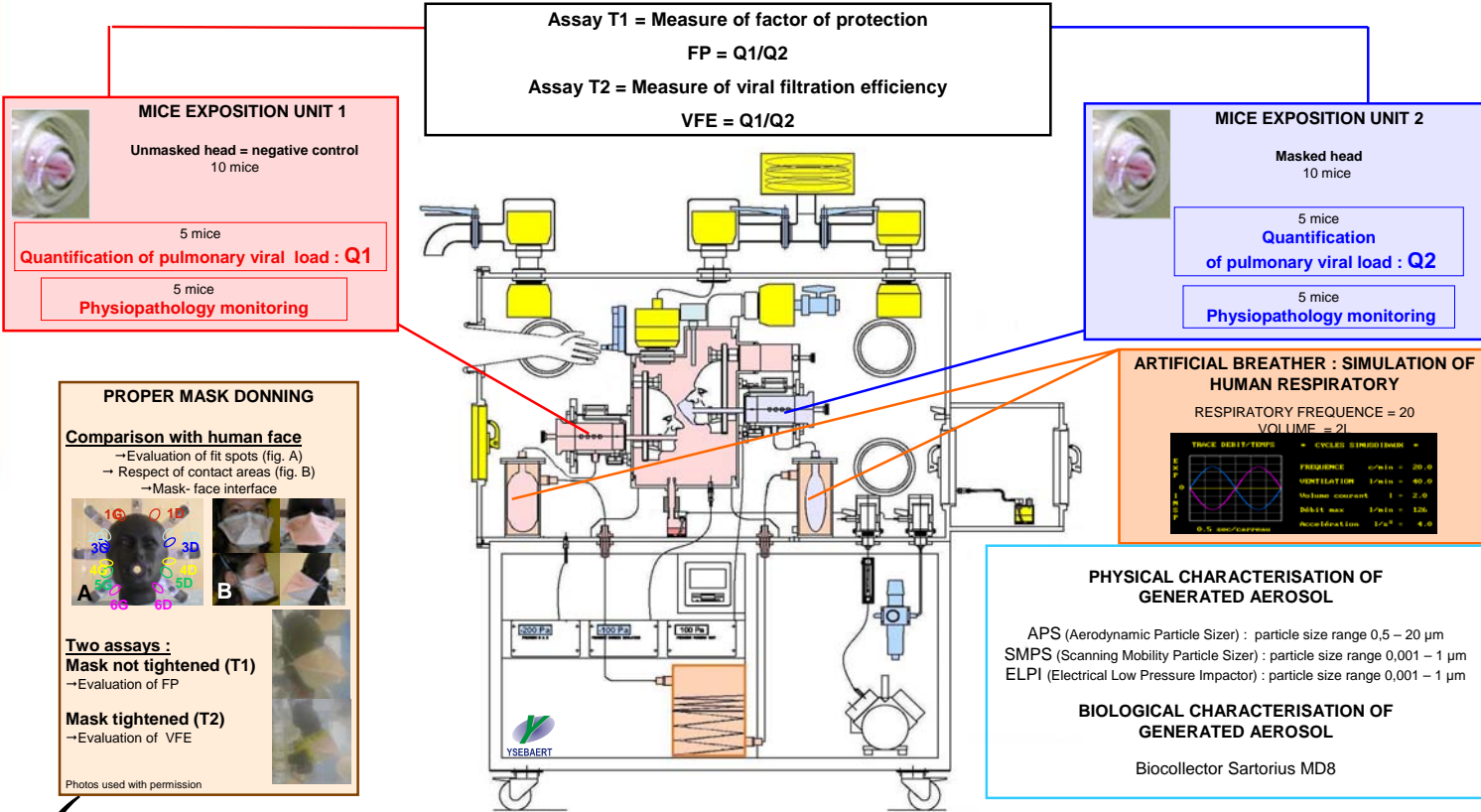
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QUESTION :

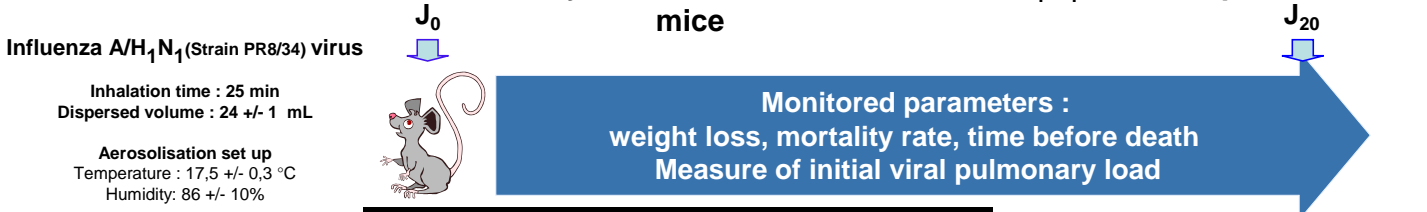
Are available masks and respirators efficient against airborne viruses?

✓ **Optimisation of a previously described* nose-only apparatus enabling the measure of viral filtration efficiency (VFE) of the filter material used in these types of masks and their factor of protection (FP).**

(*) Louveau C et al. A nose only-apparatus for airborne delivery of *Mycobacterium tuberculosis* to mice: calibration of biological parameters. *Microbes and Infection* 2005;7(3):457-66.



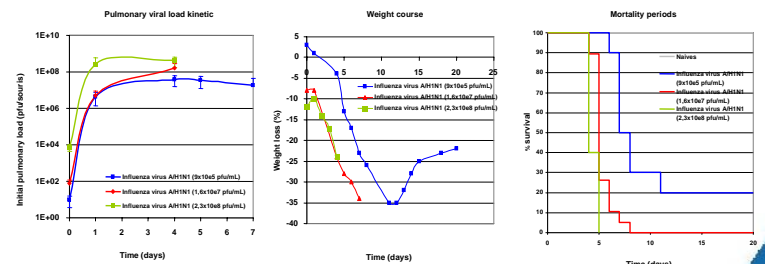
✓ **Establishment of an infection model by aerosolisation of influenza A/H₁N₁ virus adapted to Balb/c mice**



Effect of initial pulmonary load on physiopathology of infection *in vivo*

Inoculum concentration (pfu/mL)	IVL* pfu/mouse at J0	Mortality time	mortality period	% max weight loss
Naive	0			0
9 x 10 ⁵	10	J11	J6-J11	35
1,8 x 10 ⁶	132	J7	J5-J7	27
1,6 x 10 ⁷	629	J6	J4-J6	25
2,3 x 10 ⁸	8 785	J5	J4-J5	17

*IVL : Initial viral load determined by plaque assay



Conclusions :

- ✓ viral survival during aerosolisation
- ✓ generation of infectious particles
- ✓ efficiency of infection aerosol procedure

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Perspective : determination of granulometry of viral loaded particles

