

# Oscillococcinum® (*Anas barbariae* 200K) improves innate immunity *in vitro*

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## CONTEXT

In clinical practice, the homeopathic dilution *Anas barbariae* 200K is traditionally used both preventively and curatively to combat influenza symptoms: chills, body aches, fever, headaches<sup>(1,2,3)</sup>.

During a viral infection, innate immunity is the first body response.

It is an immediate inflammatory reaction which involves, among other factors, **phagocytosis** and **oxidative stress** at the cellular level.

## OBJECTIVE

Evaluating the effect of homeopathic dilution of *Anas barbariae* 200K on the oxidative stress and the phagocytosis in the microglia, a cellular model of brain macrophages *in vitro*.

## METHODS & RESULTS

### ANAS BARBARIAE 200K « BOOSTS » THE PHAGOCYTOSIS IN VITRO

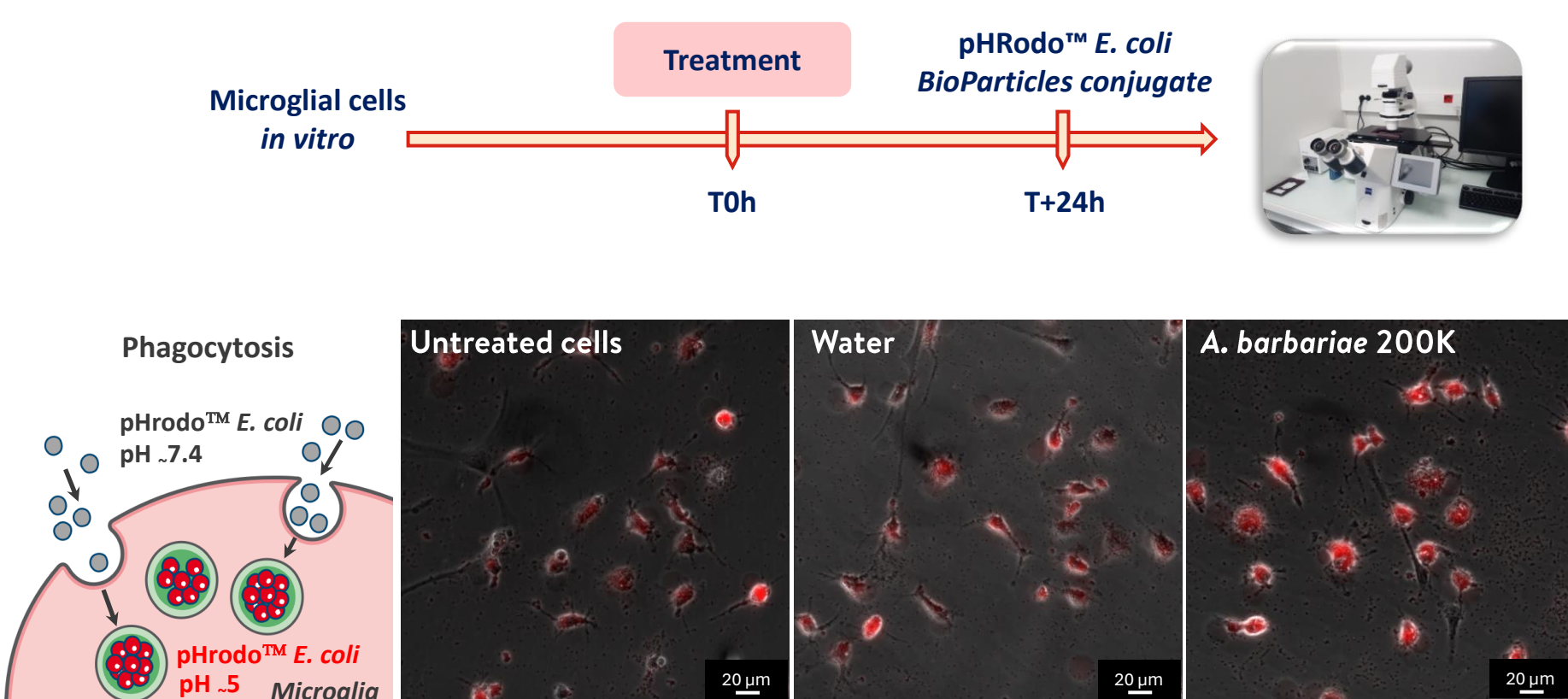
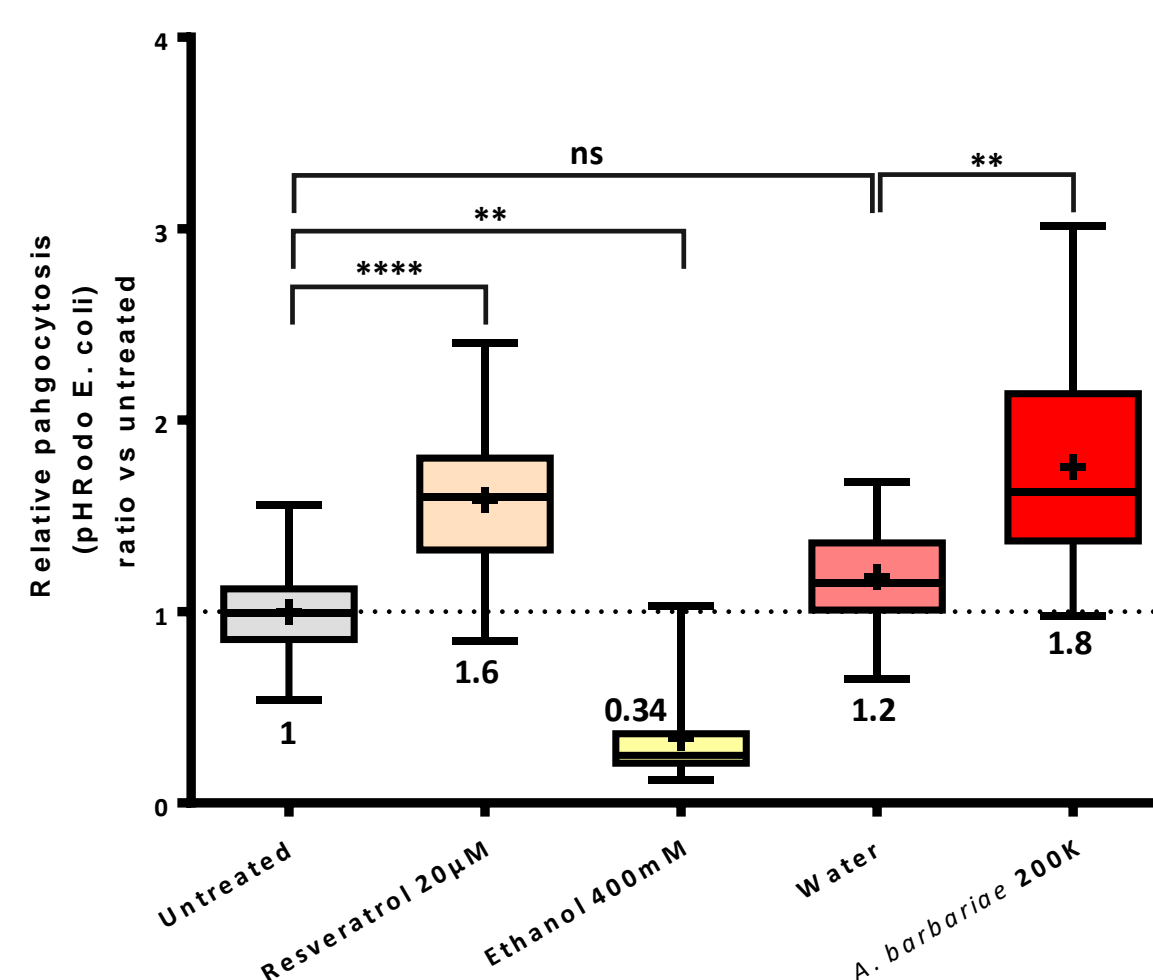


Diagram and representative images of fluorescent labelling with pHRedo™ *E. coli* red beads: At pH 7.4, pHRedo™ *E. coli* beads are not fluorescent. When the beads are phagocytosed by the cells, the lower pH 5 activates the fluorescence. More of the cells are taken up and the red fluorescence accumulates.

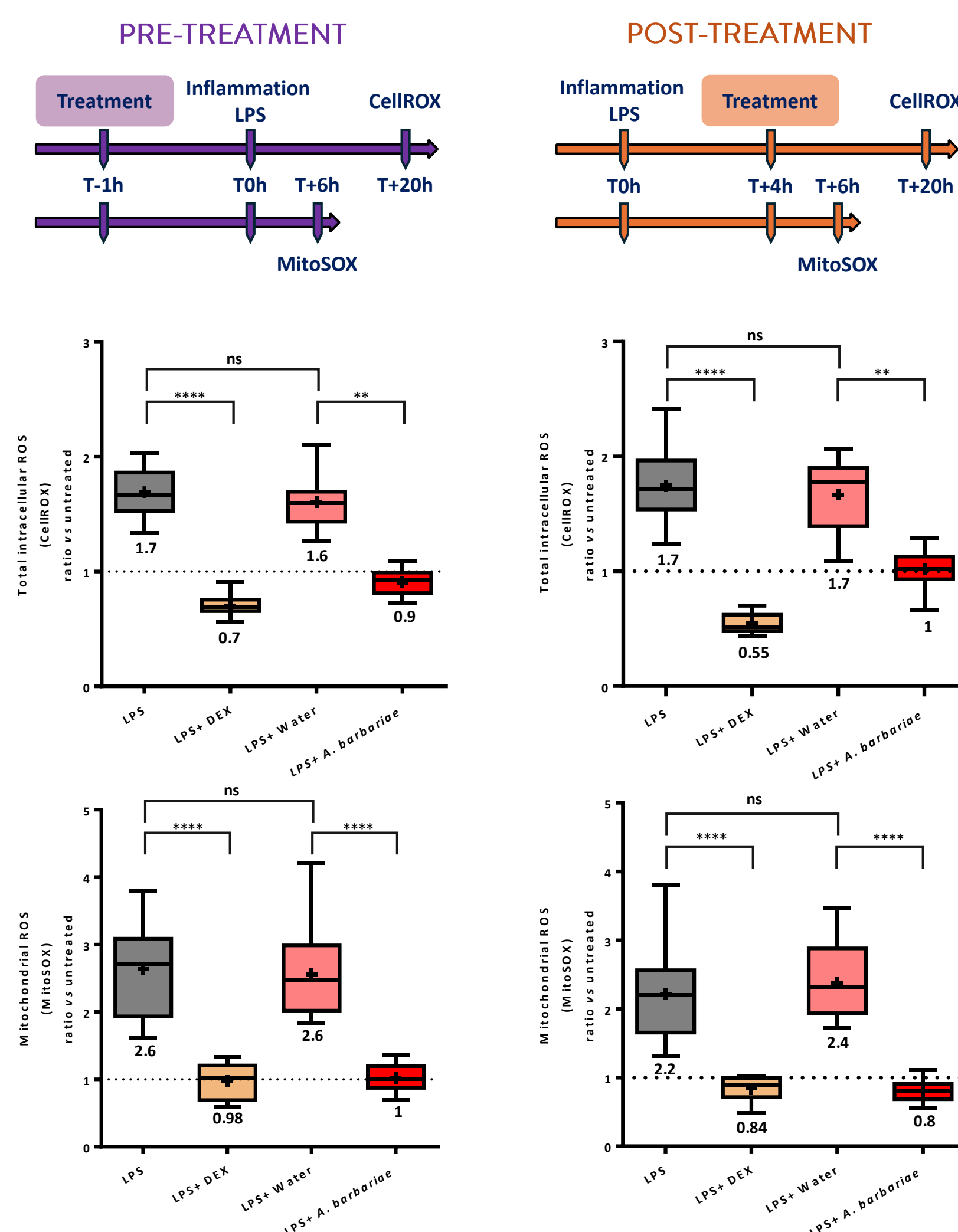


*Anas barbariae* 200K

- ✓ significantly increases by 1.5-fold the phagocytosis of the cells compared with water (placebo) in non-inflammatory condition.

ns: not significant; \*\*p<0.01; \*\*\*\*p<0.0001; N=6 independent experiments

### ANAS BARBARIAE 200K HAS AN ANTIOXIDANT EFFECT IN VITRO



ns: not significant; \*\*p<0.01; \*\*\*p<0.001; \*\*\*\*p<0.0001; N=3 independent experiments

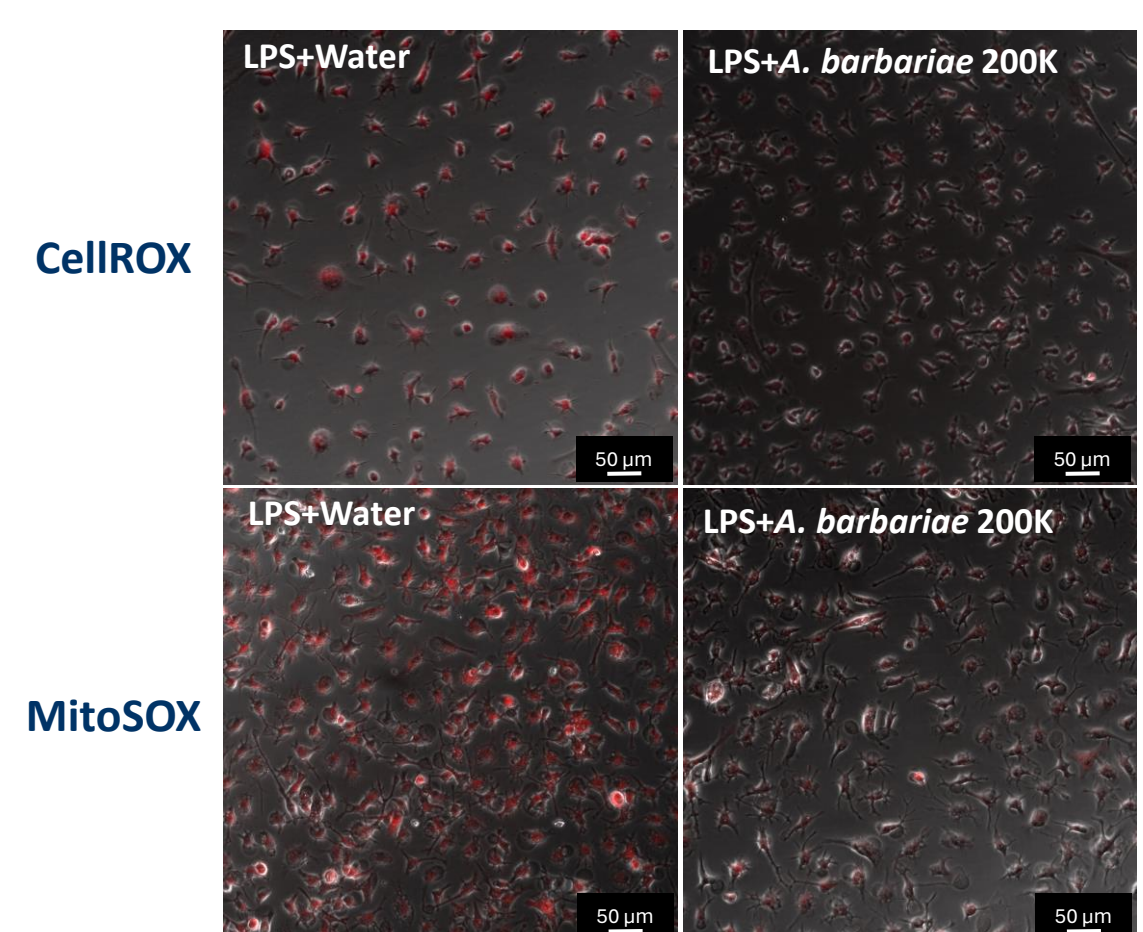


Diagram and representative images of fluorescent labelling with CellROX and MitoSOX probes: More the cells produce ROS, more the probes are oxidized and more the red fluorescence is increased.

*Anas barbariae* 200K

- ✓ significantly reduces the production of total intracellular ROS by 1.7-fold and mitochondrial ROS by 2.5-fold compared with water (placebo) in inflammatory condition (LPS).
- ✓ has a similar action in pre- and post-treatment.

*A. barbariae*: *Anas barbariae*; DEX: dexamethasone; LPS: lipopolysaccharide; ROS: Reactive Oxygen Species

## CONCLUSIONS

*Anas barbariae* 200K has a biological action in the microglial cells model *in vitro*:

- ➔ Stimulation of the phagocytosis
- ➔ Diminution of the oxidative stress in inflammatory condition

References : 1. Agence fédérale des médicaments et des produits de santé. Oscillococcinum gran. récip. unidose Banque de données des médicaments (fagg-afmps.be). 2022  
2. Papp R, Schuback G, Beck E, et al. Oscillococcinum in patients with influenza-like syndromes: a placebo-controlled, double-blind evaluation. *Br Homeopath J*. 1998;87:69-76  
3. Ferley JP, Zmirou D, D'Adhemar D, Balducci F. A controlled evaluation of a homeopathic preparation in the treatment of influenza-like syndromes. *Dr J Clin Pharmacol*. 1989;27:329-335

These data presented cannot be extrapolated under any circumstances for clinical use in humans.

