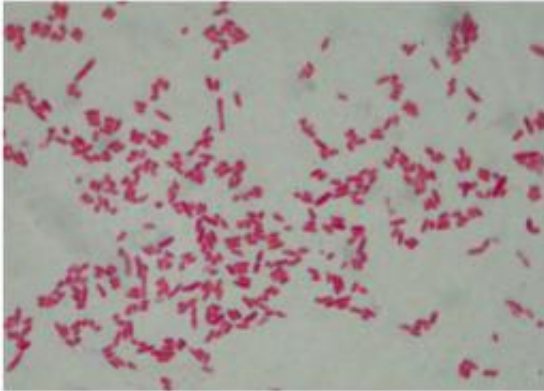


Lovastatin: a new weapon against plague?

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Yersinia pestis after Gram staining. © URMITE/ CNRS

An experimental study has revealed that lovastatin, a drug prescribed for the treatment of hypercholesterolemia, protects animals against the deadly effects of plague. This infectious disease is on the upsurge in parts of the world. These results obtained by French scientists at the Unite de Recherche have been published in the journal PLoS ONE.

Statins are a class of medicinal products administered to reduce cholesterol levels in people at risk of suffering [heart disease](#) because of their hypercholesterolemia. Of the six [statin](#) compounds available, [lovastatin](#) was the first to be introduced onto the market. Although studies have already demonstrated that this drug can prevent the mortality and morbidity associated with severe infections, no results concerning the [bacterium](#) that causes fatal plague, called Yersinia pestis, had been available until now.

After inoculating small rodents with the *Yersinia pestis* bacterium, the team led by Didier Raoult and Michel Drancourt showed that animals treated with lovastatin presented fewer and less severe infections.

Lovastatin therefore has preventive properties against plague mortality in an animal model. This experimental study also reveals that this statin has no direct antibiotic effect against *Yersinia pestis* but that it prevents the development of septicemia.

These findings suggest that people receiving statin-based treatment to reduce their cholesterol levels may be protected against the deadly effects of plague. The cause of severe epidemics over the last two thousand years, plague is now considered as a resurgent disease throughout the world. Nearly 50% of cases worldwide are reported in Madagascar, but [plague](#) is present in Africa (Democratic Republic of Congo, Malawi and Tanzania), Asia (Vietnam) and America, while a few very limited outbreaks have been observed in Europe on the shores of the Caspian Sea.

More information: Saravanan Ayyadurai, Hubert Lepidi, Claude Napez, Didier Raoult, Michel Drancourt, Lovastatin protects against experimental plague in Mice, PLoS ONE, June 2, 2010.

Provided by CNRS

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