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## Efficiency test of a live, attenuated *Mycoplasma hyorhinis* vaccine candidate strain

### Content

**Background:** *Mycoplasma* (M.) *hyorhinis* causes significant economic losses in swine. Prevention and treatment rely on antibiotics, as no vaccines are available in Europe. However, antibiotics cannot eliminate the bacteria. Applying an efficient vaccine would provide a long-term control method, reducing the economic losses.

**Materials and methods:** A temperature-sensitive M. *hyorhinis* strain was developed via 1-methyl-3-nitro-1-nitrosoguanidine treatment. The immunogenicity and efficacy of the adjuvanted, attenuated vaccine candidate were tested. Three-week-old piglets were immunized, and the vaccination site was monitored daily. At six weeks, the pigs were challenged on two subsequent days. Clinical exams were conducted daily, and blood and nasal swabs collected weekly for M. *hyorhinis* ELISA, real-time PCR, and isolation. Three weeks post-challenge, animals underwent gross and histopathological examinations. Body temperature was recorded daily, and body weight was measured at arrival, six, and nine weeks.

**Results:** Vaccination reduced clinical ( $p=0.001$ ), gross pathological ( $p<0.001$ ), and histopathological ( $p<0.001$ ) lesions. The vaccinated group showed earlier, higher M. *hyorhinis*-specific antibody levels post-challenge. However, vaccination did not prevent weight gain reduction.

**Discussion:** Overall, the adjuvanted, attenuated strain provided adequate protection. The attenuated strain was patented under number P2500036 at the Hungarian Intellectual Property Office.

### Keywords

*Mycoplasma hyorhinis*, porcine, vaccine

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### Professional Status of the submitter, who is also the speaker

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