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[home](#) [page](#) [about us](#) [contact](#)

[us](#)

Table of
Contents

**VETMED
2015**

**VETMED
2014**

**VETMED
2013**

**VETMED
2012**

**VETMED
2011**

**VETMED
2010**

**VETMED
2009**

**VETMED
2008**

**VETMED
2007**

**VETMED
2006**

**VETMED
2005**

**VETMED
2004**

**VETMED
2003**

**VETMED
2002**

**VETMED
2001**

**VETMED
Home**

**Editorial
Board**

For Authors

- **Authors
Declaration**
- **Instruction
to Authors**
- **Guide for**

Authors

- Fees
- Submission

Subscription

Veterinarni Medicina

Inhibition of *Salmonella enterica* serovar *Dusseldorf* by enterocin A in gnotobiotic Japanese quails

A. Laukova, P. Guba, R. Nemcova, M. Marekova

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[[fulltext](#)]

The protective (ENT1) and therapeutic (ENT2) effects of enterocin A (Ent), produced by *Enterococcus faecium* EK13, against *Salmonella enterica* serovar *Dusseldorf* SA31 was determined in a model of gnotobiotic Japanese quails. Twenty-one 3 days old birds were divided into 3 groups of equal size; (ENT1, ENT2 and control group – CG). They were experimentally infected with SA31 (10⁷ cfu/ml) *per os*. For the group ENT1, Ent A (200 µl of 25 600 AU/ml) was administered 8 h before infection with SA31 strain and for the group ENT2, treatment with Ent A was administered 8 h after infection; CG was infected with SA31 and not treated with Ent A.

Sampling of the feces was performed 8, 24, 48 and 168 h after infection. At the end of the experiment also the content of the caecum and ileum was analyzed. A log 1.37 reduction of SA31 colonization in feces of the group ENT1 was found after 8 h in comparison with CG. After 24 h, a significant difference in SA31 colonization was observed when comparing CG and ENT2. After 48 h, a lower colonization of SA31 was found in both groups which continued until the end of the experiment (168 h). At the same time, reduction of *Salmonella enterica* serovar *Dusseldorf* was detected in the content of the caecum (2.44 log) and ileum (3.16 log) in ENT2 but not in ENT 1 when compared with control group. These observations indicate stronger therapeutic effect of Ent A than prophylactic one in the digestive tract of gnotobiotic Japanese quails.

Keywords:

Salmonella enterica serovar *Dusseldorf*; enterocin; inhibition; gnotobiotic Japanese quail

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