



## Effects of *Mycoplasma pneumoniae* infection on airway neurokinin-1 receptor expression in BALB/c mice

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**ABSTRACT.** The aim of this study was to establish a BALB/c mouse model of *Mycoplasma pneumoniae* (MP) infection and to explore the expression of neurokinin-1 receptor (NK1-R) in the trachea and lung tissue and changes in its relative content at different time points (on the 3rd, 7th, 14th, 21st, and 30th days after infection) in MP-infected BALB/c mice. Immunohistochemistry and Western blot analysis were performed to determine NK1-R expression in the trachea and lung tissue and changes in relative content in MP-infected BALB/c mice. After MP infection, the expression of NK1-R on the surfaces of upper tracheal and bronchial epithelial cells, submucosa, and alveolar epithelial cells, as well as around the smooth muscle, was upregulated more significantly in the infection group than in the control group ( $P < 0.05$ ); NK1-R protein expression was enhanced on the 3rd, 7th, 14th, 21st, and 30th days after infection compared with that of the control

group ( $P < 0.05$ ). NK1-R expression in the trachea, bronchus, and lung tissue increased in MP-infected BALB/c mice, which may explain why wheezing occurs after MP infection.

**Key words:** Mycoplasma pneumonia; BALB/c mouse; NK1-R