observed in many organs and blood serum of chickens and begins a 30 hours a.i. with the highest rates of accumulation of virus in excess of 7 lg EID50/g observed in the lungs, blood serum and kidneys of animals.

Conclusion: According to the results of comparative analysis of LD50 of AIV strains at different options for infections have found that the highest susceptibility to the virus have respiratory organs of chickens compared with the gastrointestinal tract. The primary target organ to AIV in intranasal infected chickens is the mucous membrane of the nasal cavity. In addition to the results of research, we proposed a fecal-nasal transfer mechanism of AIV A/NSN1 in chickens for nature conditions.

doi:10.1016/j.ijid.2010.02.369
73.005
Role of leukotrienes in resistance and susceptibility to infection by Histoplasma capsulatum
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Background: Histoplasma capsulatum (H. capsulatum) is a dimorphic pathogenic fungus that causes a wide spectrum of diseases. Macrophages are an important phagocytic cells in host defense against fungi. In order to enhance host defense, these resident cells secrete chemotactic substances such as leukotrienes (LTs) and cytokines that recruit effector cells to the focus of infection. LTs are potent lipid mediators of inflammation and host defense, derived from the 5-lipoxygenase (5-LO) pathway of arachidonic acid (AA) metabolism. We have shown that the absence of leukotrienes in genetically modified mice (5-LO−/−) or by treating WT animals with pharmacological inhibitor MK886, have increased susceptibility to infection when they are infected with H. capsulatum. Recent studies show that susceptibility or resistance of different strains to certain infections, such as Leishmania amazonensis, is associated with differential production of LTs. In the present study, we evaluated the production of LTB4 by peritoneal macrophages (PM) from susceptible and resistant mice after challenge with H. capsulatum and the effect of LTs in phagocytosis by macrophages of both strains.

Methods: Macrophages from C57BL/6 (susceptible) and sv129 (resistant) mice were infected for 48 h at a ratio of 1:5 (H. capsulatum:macrophage). Supernatants were collected and the production of LTB4 was evaluated by ELISA. The phagocytosis was assessed by fluorescence using unopsonized or IgG-opsonized FITC-labeled H. capsulatum and MK886, a LTs inhibitor, was added to the cells previously to the infection.

Results: Interestingly, macrophages from resistant mice produced higher levels of LTB4 upon H. capsulatum challenge than did those from susceptible mice. As expected, PMs from sv129 phagocytosed 1.9 fold-increased IgG-opsonized-H. capsulatum than PMs from C57BL/6. However, phagocytosis of IgG-opsonized-H. capsulatum by PMs from C57BL/6 and sv129 are both dependent on endogenous LTs, since when the LTs synthesis is pharmacologically inhibited, the phagocytosis was decreased 10 and 20 fold respectively.

Conclusion: LTs are important mediators involved in the mechanisms of host defense by participating in the patterns of resistance/susceptibility to infection of H. capsulatum.

doi:10.1016/j.ijid.2010.02.369
73.006
Different clinical isolates of Mycobacterium tuberculosis induced distinctive pulmonary inflammation in mice
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Background: Mycobacterium tuberculosis (Mtb) is a virulent intracellular pathogen that infects and persist in host macrophages, resulting in granuloma formation and collagen deposition in the lung. The mechanisms that confer resistance to Mtb or results in establishment of disease are poorly understood. Data from the literature suggest that differences in Mtb virulence contribute to setting up of the disease. In order clarify this aspect, our purpose is to investigate the immune response and lung pathology in mice infected with Mtb obtained from distinct clinical isolates. The isolates were recovered from patients with noncavitary (SV 009) or extrapulmonary (SV 068) active tuberculosis.

Methods: Female Balb/c mice were infected intratracheally with 1 × 105 CFU/100 µL of Mtb clinical isolates. Neutrophils and mononuclear cells recruitment to the lung were accessed by bronchoalveolar lavage at 30 days post infection and lung histology were evaluated on 30 and 60 days post infection.

Results: Mice infected with SV 068 showed 22% more neutrophils (9 × 105/mL) and 70% more mononuclear cells (6 × 105/mL) recruited to bronchoalveolar space 30 days post infection, when compared with mice infected with SV 009 that presented 5 × 105/mL of neutrophils and 4.5 × 105/mL of mononuclear cells. The histology analysis of lung tissue, demonstrated that animals infected with SV 068 present greater number of foamy macrophages containing aggregations of Mtb, especially at 60 days post infection. Also, in this period, we observed the presence of more intense infiltration of neutrophils in perivascular and perilveolar spaces when compared with animals infected with SV 009.