Enzyme-linked immunospot: an alternative method for the detection of interferon gamma in Johne's disease - DTU Orbit (31/12/2018)

Enzyme-linked immunospot: an alternative method for the detection of interferon gamma in Johne's disease

To date, the sensitivity of the interferon gamma (IFN-) enzyme-linked immunosorbent assay (ELISA) to detect Johne's disease (JD) has been poor, especially in the early stages of disease. To improve the sensitivity of IFN- detection in the early stages of infection, an alternate assay needs to be developed. The enzyme-linked immunospot (ELISPOT) assay is a highly sensitive technique for the detection of cytokines and has the potential to improve the diagnosis of JD. Of the variables examined, choice of capture antibody and the method by which the peripheral blood mononuclear cells were isolated significantly affected the ability to enumerate IFN—secreting cells. The ELISPOT assay was as sensitive as or better than the IFN- ELISA at detecting ovine JD and could also detect disease at early time points postinoculation. The IFN- ELISPOT could distinguish infected from unexposed animals; however, neither the IFN- ELISA nor the ELISPOT assay could distinguish between sheep experimentally infected with Mycobacterium avium subspecies paratuberculosis and those exposed to the bacterium but diagnosed as uninfected at necropsy.

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