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Specific gamma-interferon response to recombinant antigens in goats experimentally infected with *Mycobacterium avium* ssp. *paratuberculosis* (MAP)

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An advanced gamma-interferon (IFN- γ) assay could be instrumental for the early diagnosis of paratuberculosis in ruminants. To increase the specificity of this assay, four recombinant MAP-proteins were evaluated as potential replacements of johnin purified protein derivative (jPPD), conventionally applied to restimulate peripheral blood mononuclear cells (PBMC).

Thuringian goats (n=26) were inoculated ten times beginning at the tenth day post natum, 16 goats served as controls. PBMC were isolated from blood samples taken at intervals of four weeks and stimulated for 24h with jPPD, concanavalin A or MAP-proteins. IFN- γ was quantified by an in-house ELISA.

Beginning in the third week p.i., PBMC of inoculated goats responded to jPPD with a significantly increased production of IFN- γ in comparison to unstimulated control cells while PBMC of control animals did not. Detected concentrations reached maximum values in week 18 p.i. and decreased afterwards. Mean IFN- γ values of PBMC of all inoculated goats stimulated with MAP-proteins did not differ significantly from unstimulated PBMC throughout. However, PBMC of two inoculated goats responded repeatedly to MAP-protein 3651c. Progression of this response resembled the one induced by jPPD but at a lower level. PBMC of other inoculated goats occasionally yielded positive results.

Single use of MAP-protein 3651c may not replace jPPD in the IFN- γ assay but the protein is a promising candidate for combined application with other antigens.