論　文　内　容　の　要　旨
Synopsis of Thesis

氏　名 Name	ARIEL PRADIPTA
論文題名 Title	T cell-derived interferon-γ is required for host defense to *Toxoplasma gondii* （T細胞由来のインターフェロンγがトキソプラズマ原虫に対する生体防御に重要である）

論文内容の要旨

〔目　的(Purpose)〕

Determining important cell types involved in host defense against *T. gondii* infection

〔方法ならびに成績(Methods/Results)〕

First, generation of new mouse line with bicistronic interferon gamma (IFN-γ)/Venus and Nanoluc fusion protein gene followed with 3'-untranslated region (3'-UTR). The mouse was named GREVEN and allowed for observation of IFN-γ production in vivo. The modification also allowed for diminishing IFN-γ production according to the changing condition of the host along an infection.

Second, flow cytometry indicated that the GREVEN mouse line is reliable to determine IFN-γ producing cells through detection of YFP emission and luciferase assay. In addition, IFN-γ production was only detected in T-cells cultured in Th1 conditions. GREVEN mice also allowed for monitoring of IFN-γ production dynamics in different time points during *T. gondii* infection in vivo. Notably, γδT cells produced IFN-γ from 3 days post infection up to day 7 and 10. NK cells produced IFN-γ at 3 days post infection with peaks at days 7 which then declined up to day 10. $CD4^+$ and $CD8^+$ T cells produced IFN-γ at 5 days post infection that peaked at day 10. Analysis of H-2Kb OVA tetramer to $CD8^+$ T cells from mice infected with *T. gondii* indicated that the IFN-γ producing T-cells were specific to antigen from *T. gondii*.

Third, clarification of T-cell derived IFN-γ by analyzing survival of T-cell specific conditional knockout mice termed Lck-Cre/Ifn-$\gamma^{fl/fl}$ mice. Compared to control and IFN-γ KO mice, Lck-Cre/Ifn-$\gamma^{fl/fl}$ mice were able to survive slightly longer than IFN-γ KO mice however ultimately could not recover from *T. gondii* infection.

〔総　括(Conclusion)〕

GREVEN mouse line was able to determine the importance of T-cell derived IFN-γ for host defense against *T. gondii* in vivo.

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論文審査の結果の要旨及び担当者

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論文審査の結果の要旨

First, generation of new mouse line with bicistronic interferon gamma (IFN-γ)/Venus and Nanoluc fusion protein gene followed with 3' -untranslated region (3' -UTR). The mouse was named GREVEN and allowed for observation of IFN-γ production in vivo. The modification also allowed for diminishing IFN-γ production according to the changing condition of the host along an infection.

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