

## Accepted Manuscript

Title: Schizogony and gametogony of oocyst-deficient T-263 strain of *Toxoplasma gondii*

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PII: S0304-4017(17)30225-X

DOI: <http://dx.doi.org/doi:10.1016/j.vetpar.2017.05.024>

Reference: VETPAR 8357

To appear in: *Veterinary Parasitology*

Received date: 28-4-2017

Revised date: 23-5-2017

Accepted date: 24-5-2017



Please cite this article as: Dubey, J.P., Schizogony and gametogony of oocyst-deficient T-263 strain of *Toxoplasma gondii*. *Veterinary Parasitology* <http://dx.doi.org/10.1016/j.vetpar.2017.05.024>

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## Schizogony and gametogony of oocyst-deficient T-263 strain of *Toxoplasma gondii*

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### Highlights

- Environmentally resistant oocysts are key for the spread of *Toxoplasma gondii*.
- Cats fed live bradyzoites of *T. gondii* mutant strain T-263 immunize but do not produce oocysts.
- Mature schizonts, male and female gamonts were found in intestines of cats fed T-263.

### Abstract

Oocysts are important stage for the spread of *Toxoplasma gondii* because they are environmentally resistant. Among all hosts of *T. gondii*, only felids can excrete oocysts. Cats that have excreted *T. gondii* oocysts after primary infection develop immunity to re-excretion of oocysts, and this immunity appears to be long-lasting. It would be desirable to have a non-infectious vaccine for the prevention of *T. gondii* infection in cats and to understand mechanism of immunity to excretion of oocysts. An initial step will be to identify stage/ stages of the parasite for induction of immunity. A chemically-induced mutant of *T. gondii*, T-263, is immunogenic but lacks the capacity to form oocysts in cats. Cats fed live bradyzoites of T-263 do not excrete oocysts after challenge with oocyst producing strains. However, it is not known at what stage of the parasite development the oocyst formation is halted. Here, four cats were fed live tissue cysts of the T-263 strain and examined for enteroepithelial stages and oocyst production. Two cats were administered methyl prednisolone acetate (20 mg/kg) once intramuscularly and these cats were euthanized 5 and 7 days post inoculation. No oocysts but

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