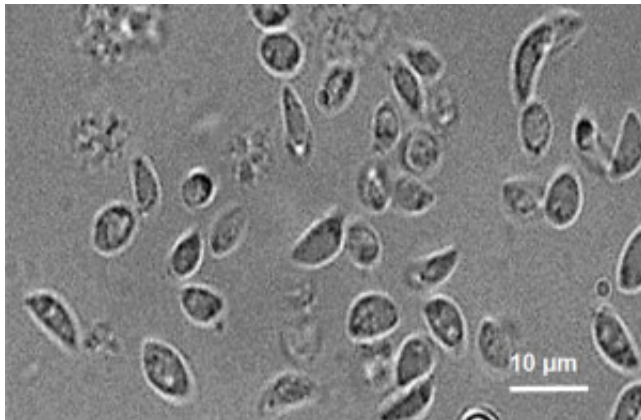


## Conservation of biological resources, *Toxoplasma gondii* tachyzoites

The conservation of biological resources is an essential factor for all biological research, and is the first function of a Biological Resource Centre. For parasites, this conservation remains difficult due to the structural complexity of the microorganisms.



Tachyzoites (picture from Parasitology Department, University of Reims Champagne-Ardenne, France)

*Toxoplasma gondii*, the causative agent of toxoplasmosis, is a protozoan parasite that is estimated to infect more than one-third of the world's human population. Its life cycle comprises a series of five developmental stages in the intestinal epithelium of the feline definitive host and three stages relevant to infection in intermediate hosts which include all other species of mammals. These stages are sporozoites (contained in oocysts), and the obligate intracellular stages tachyzoites, and bradyzoites.

The conservation of *T. gondii* strains isolated from humans and animals is essential for conducting studies on *Toxoplasma*. Conservation is the main function of the French Biological *Toxoplasma* Resource Centre (BRC *Toxoplasma*, France). Although conservation methods exist for *T. gondii*, their optimization is difficult due to the complexity of assessing the parasite viability after thawing.

In this study, we have determined the suitability of a standard cryopreservation methodology for different *Toxoplasma* strains using the viability of tachyzoites assayed by flow cytometry with dual fluorescent labelling (calcein acetoxymethyl ester and propidium iodide) of tachyzoites. This method provides a comparative quantitative assessment of viability after thawing. The results helped to define and refine quality criteria before tachyzoite cryopreservation and optimization of the cryopreservation parameters.

## Publication

[Optimization of the cryopreservation of biological resources, Toxoplasma gondii tachyzoites, using flow cytometry.](#)

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