Studied on *Sarcocystis* detected from Japanese sika deer (*Cervus nippon centalis*) in Hyogo Prefecture

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Sarcocystis form sarcocysts, which are large cysts that can be seen with the naked eye, in the muscles of the intermediate host. Where the popularization of meat and livestock was inferior to that of the West, these wild animal meat has been supplied as a vital protein source since ancient times, but Japanese sika deer were caught only a little until more than ten years ago and were not as common as wild boar as food. However, the report on the present state of *Sarcocystis*, belong to the phylum Apicomlexa, in Japanese sika deer is not sufficient yet.

From the 64 Japanese deer (*Cervus nippon centralis*) caught in the central mountainous area of Shimomikata district, Fukuchi, Shiso City, Hyogo Prefecture for hunting and harmful control, materials were collected by age (under 1 year old to 5 years old) and by site (myocardium, diaphragm muscle, biceps femoris, and longissimus dorsi) to investigate the parasitism rate of sarcocysts observed there. The parasitism rate in the investigated Japanese deer was as high as 81.3%. By site, a significantly higher parasitic density was observed in the myocardium.

When we examined sarcocysts in muscle to investigate the parasitism status of *Sarcocystis* species of Japanese deer, differences in their size and morphology were observed, which suggested that they might be undescribed species different from any species examined. The taxonomic position of this *Sarcocystis* was studied using *18 S rDNA* and *cox1* genes. As a result of the classification of *Sarcocystis* protozoa originated from deer by the *cox1* gene, this *Sarcocystis* formed a clade independent of those previously reported. This indicated the possibility of this species being the single species which has not been reported until now from the genetic analysis. We had an opportunity of performing an experimental infection by giving myocardium of Japanese deer containing sarcocysts detected from the muscle of Japanese deer to two dogs. This proved that the dog becomes the definitive host, and the prepatent period of this species is 5-6 days.

These results suggested that *Sarcocystis* detected in Hyogo Prefecture is a new species different from the known species based on morphological, genetic, and prepatent period differences, and revealed that the life cycle of this species is maintained by canids as the definitive host and deer as the intermediate host.