O-1. Functional Perspective of Feeder Organelle from Three-dimensional Ultrastructural Characteristics in *Cryptosporidium parvum*

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Cryptosporidium is a parasite causing extensive illness both in livestock and humans. Feeder organelle of *Cryptosporidium* is the multi-membranous structures localized on the parasite-host-cell interface that deprive nutrients from host cells. Although the feeder organelle has been summarized as being highly invaginated membranous structure, the three-dimensional fine structure remains unclear. Osmium-maceration procedure for scanning electron microscopy (OS-SEM) is one of the methods to enable visualization of the intracellular ultrastructure including depth direction information after removing soluble proteins. Recently, we investigated and assessed *C. parvum* possessed on the surface of ileal epithelial cells of SCID mouse by using transmission electron microscopy (TEM) and OS-SEM. By TEM observation, feeder organelles were recognized as aggregated structures of concentrically-, vertically- and randomly-lined bars. Correspondingly, OS-SEM observation revealed the reticulated network of stacked flat bursiform, ring-shaped bursiform and reticulated tubular membranes. These findings of the three-dimensional ultrastructural characteristics of feeder organelle, which are more intricate than expected, may potentially reinforce the limited knowledge regarding the nature of this attachment interface and the functional mechanisms around extraction of nutrients.