A single cell microorganism, *Lacrymaria olor* has an elastic neck called “proboscis” and captures foods by using oral part associated with its distal end. The proboscis can be extended to be ten times longer than the original cell length quickly and repeatedly. The aim of this research is focused on its mechanism. In the previous researches, it is thought that the extension is elicited by the movement of the oral cilia and sliding in the microtubule bundles located under the cell membrane including the undercoat structure called “pellicle”. However, molecules concerned with such motility have been unknown. Accordingly, at first, we analyzed contribution to the extension and contraction of the movement of oral cilia by using a high-speed camera. And also, we observed the movement of the oral part and proboscis separated from the body of *Lacrymaria olor*. From these observations, it is concluded that the oral part highly contributes to the directional changes and extension power of the proboscis. Moreover, we stained the microtubules with fluorescence antibody and observed them by a confocal microscope. And I observed the ultrathin section of *Lacrymaria olor* by an electron microscope to see the microtubules located. From these observations, it is revealed that the microtubules are oriented in a spiral mode on the whole body of *Lacrymaria olor*. But, in spite of total coverage of microtubules on the body, the proboscis can move freely. It may indicate that the microtubules may also move or change the shapes to make the movement of the proboscis possible.

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