

Abstract Submitted
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Special functions of valve organs of blood-sucking female mosquitoes¹ BOHEUM KIM, SANGJOON LEE — Food-feeding insects usually have valve organs to regulate the sucking flow effectively. Female mosquitoes sucking lots of blood instantaneously have a unique valve system between two pumping organs located in their head. The valve system seems to prevent reverse flow and to grind granule particles such as red blood cells. To understand the functional characteristics of this valve organ in detail, the volumetric flow rate passing through the valves and their interaction with the two-pumps need to be investigated. However, it is very difficult to observe the dynamic behaviors of pumping organs and valve system. In this study, the dynamic motions of valve organs of blood-sucking female mosquitoes were observed under in vivo condition using synchrotron X-ray micro imaging technique. X-ray micro computed tomography was also employed to examine the three-dimensional internal structure of the blood pumping system including valve organs.

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