Ring-shaped assembly of microtubules shows preferential counterclockwise motion

Ryuzo Kawamura, Akira Kakugo, Kazuhiro Shikinaka, Yoshihito Osada, and Jian Ping Gong*

Supporting Information

Movie. Example of ring-shape formation from a linear MT bundle on a kinesin-coated surface. In this case, the motility assay was prepared with modified method as follows; 192nM MT, which had been aged for 3days, and 500nM ST were introduced to the flow-cell. At 11h after ATP addition, a giant MT bundle formed into ring-shape rotating in the counterclockwise direction through the intermediate arc-shaped state. The bundle seems to contain a MT, which prefers to move leftward, at the front end, .since the front end shows temporal sticking to the surface. As far as we observed, the pathway of ring formation was same as this except that the front ends were sometime completely stopped. There is also a ring-shaped MT bundle rotating in the clockwise direction, at the upper center of the view. The time is accelerated 100-fold (1 s movie equals 100 s experiment time). The full width of the view is 135μm.