

## Supplementary Information

# Self-Aligned Wet-Cell for Hydrated Microbiology Observation in TEM

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***D. radiodurans* grown in suspension in SAW cell:**

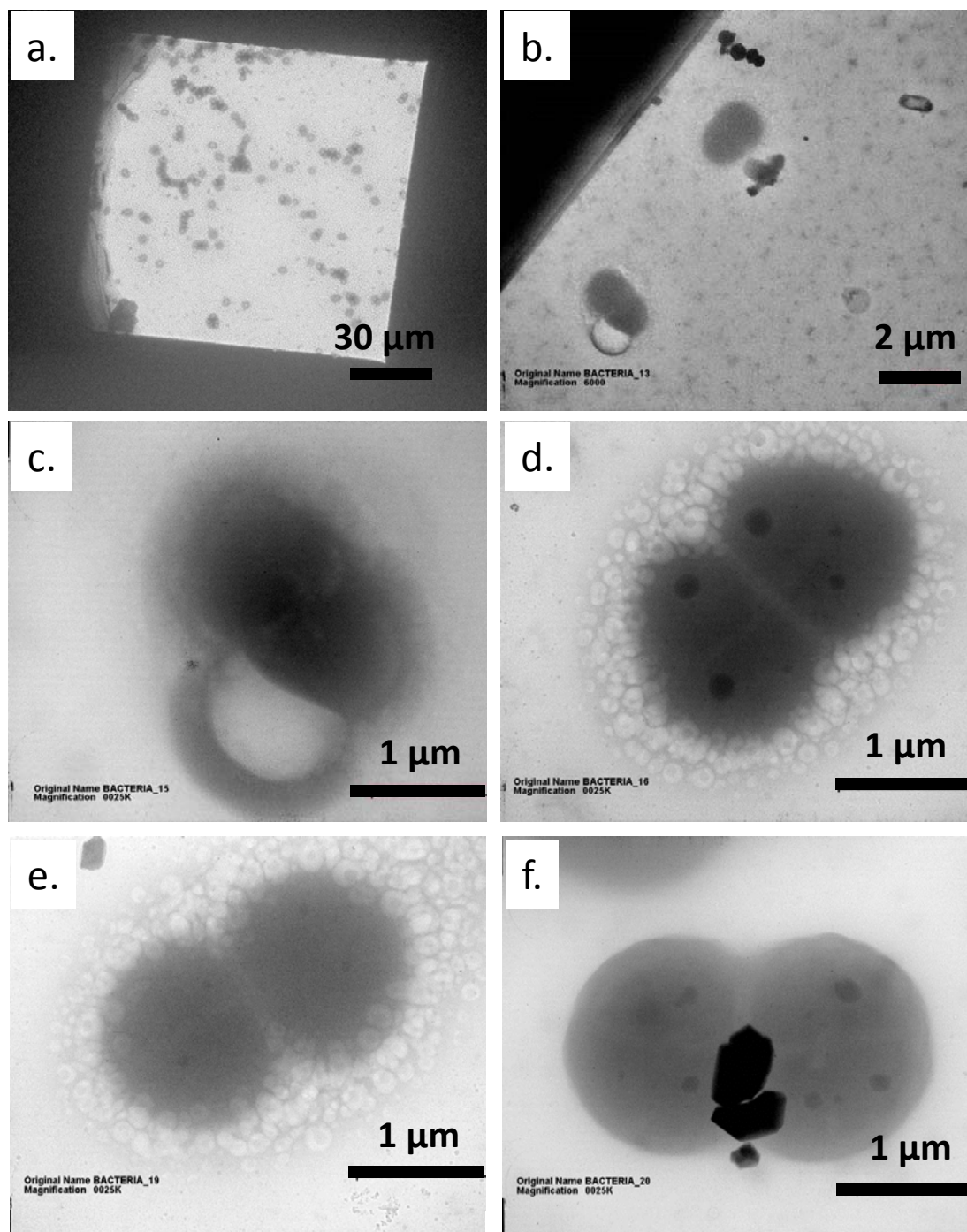


Fig. S1 The observation of *D. radiodurans* in a SAW cell TEM. (a) the 150X TEM image (captured at Low Mag. Mode) shows the 100 μm x 100 μm field of view and the distribution of *D. radiodurans*. (b) a 6,000X TEM image of two *D. radiodurans* clusters near the edge of the square window. (c) – (f) the 25,000X TEM images of different *D. radiodurans* clusters with incomplete separation of divided cells.

Movie captions:

**Movie S1:** The video shows the first 784 s after the in-frame touches the water surface. As the liquid evaporates, the in-frame adjusted the tilting of the surface and shifted/rotated toward the correct position automatically.

**Movie S2:** The video shows the interval of 844-1096 s, in which the water surround the aligned in-frame was dried out. The interval (~ 1 min) between S1 and S2 was not able to record because of the limitation of storage memory of the recording system.

**Movie S3:** This video clearly shows the rotation for the alignment as the in-frame sinks. The recording time of the video is 756 s.

To speed up the self-aligned assembly process, we can use filter paper to remove the extra liquid. All processes including sample-filing, SAW cell assembly, and sealant application can be completed in 1 min without the aid of an optical microscope.