[Supplementary information]

Study of cellular development and intracellular lipid bodies accumulation in the thraustochytrid *Aurantiochytrium* sp. KRS101

Natarajan Velmurugan[1], Yesupatham Sathishkumar[2], Sung Sun Yim[1], Yang Soo Lee[2], Min S Park[1,3], Ji Won Yang[1] , Ki Jun Jeong[1,4,*]

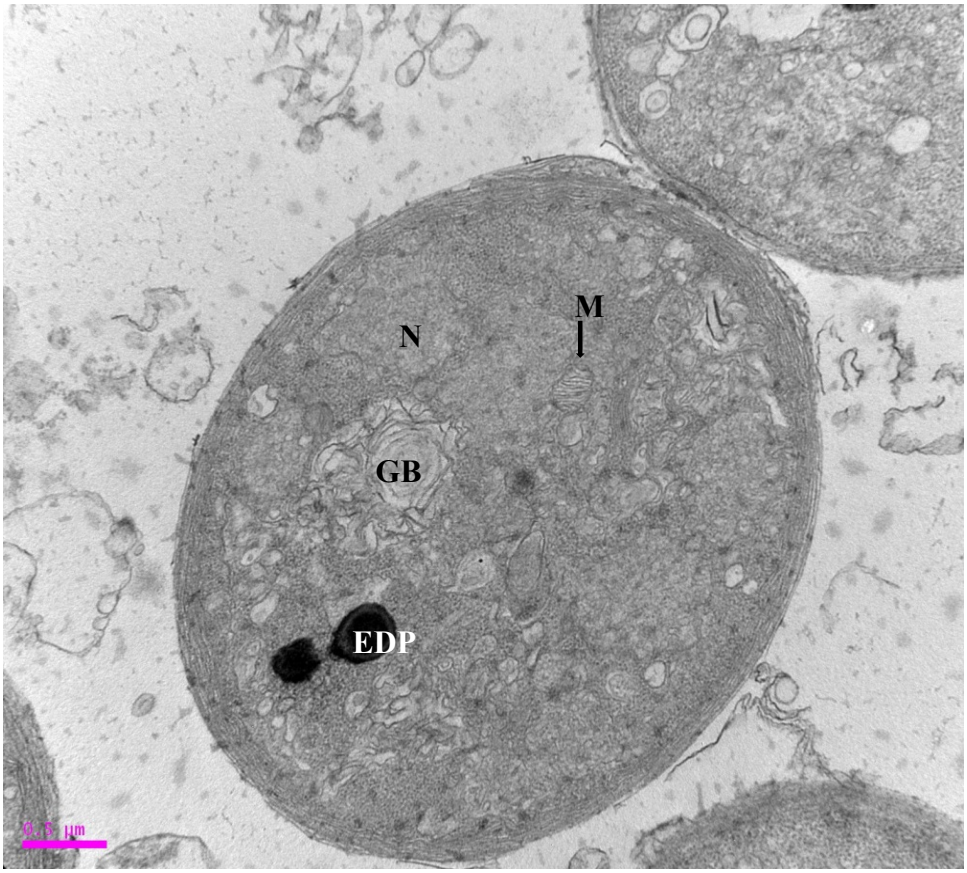
[1] Department of Chemical and Biomolecular Engineering, KAIST, Yuseong-gu, Daejeon 305-701, Republic of Korea

[2] Department of Forest Science and Technology, College of Agriculture and Life Sciences, Chonbuk National University, Jeonju, Republic of Korea

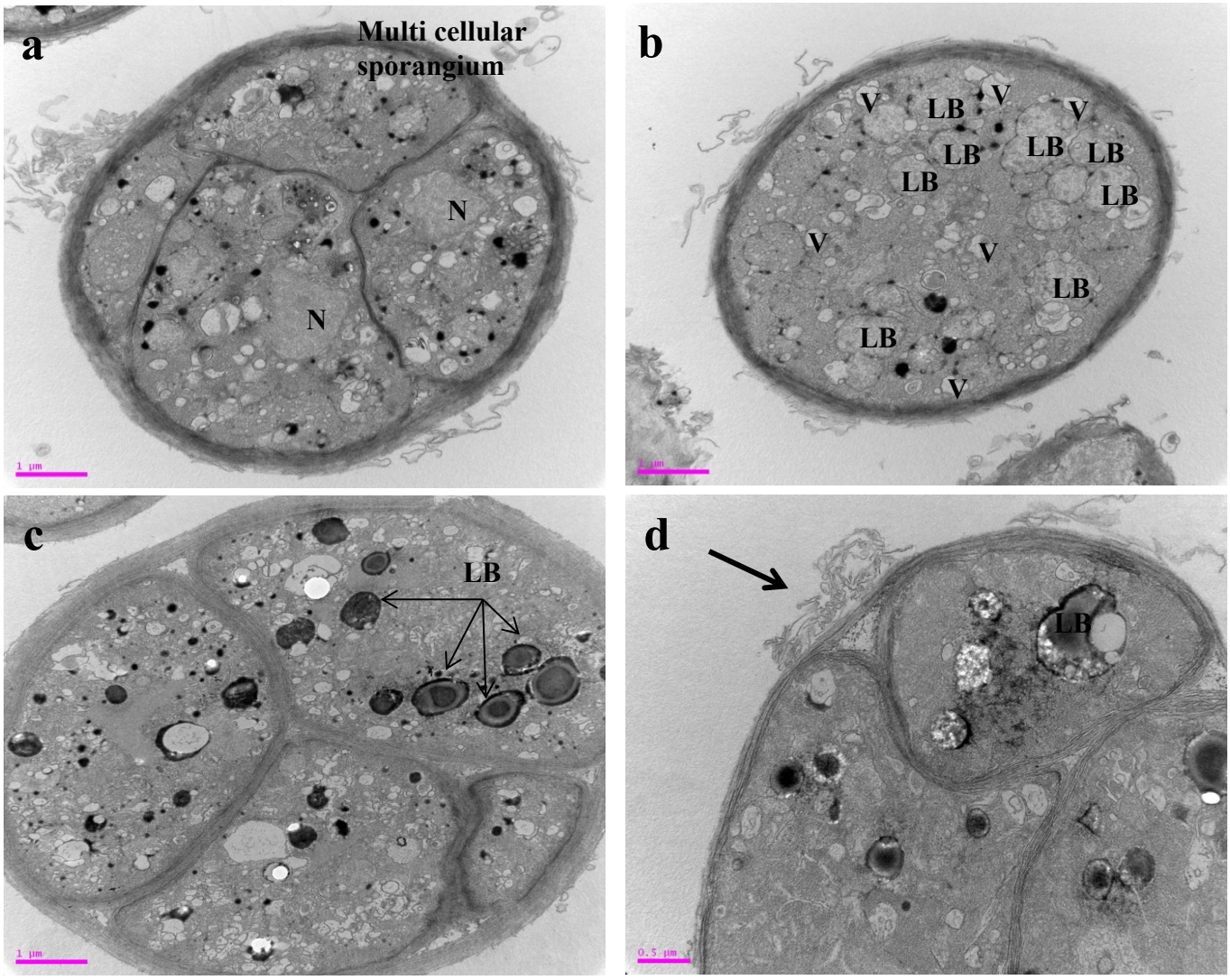
[3] Bioscience Division, Los Alamos National Laboratory, Los Alamos, New Mexico, USA

[4]Institute for the BioCentury, KAIST, Daejeon, Republic of Korea

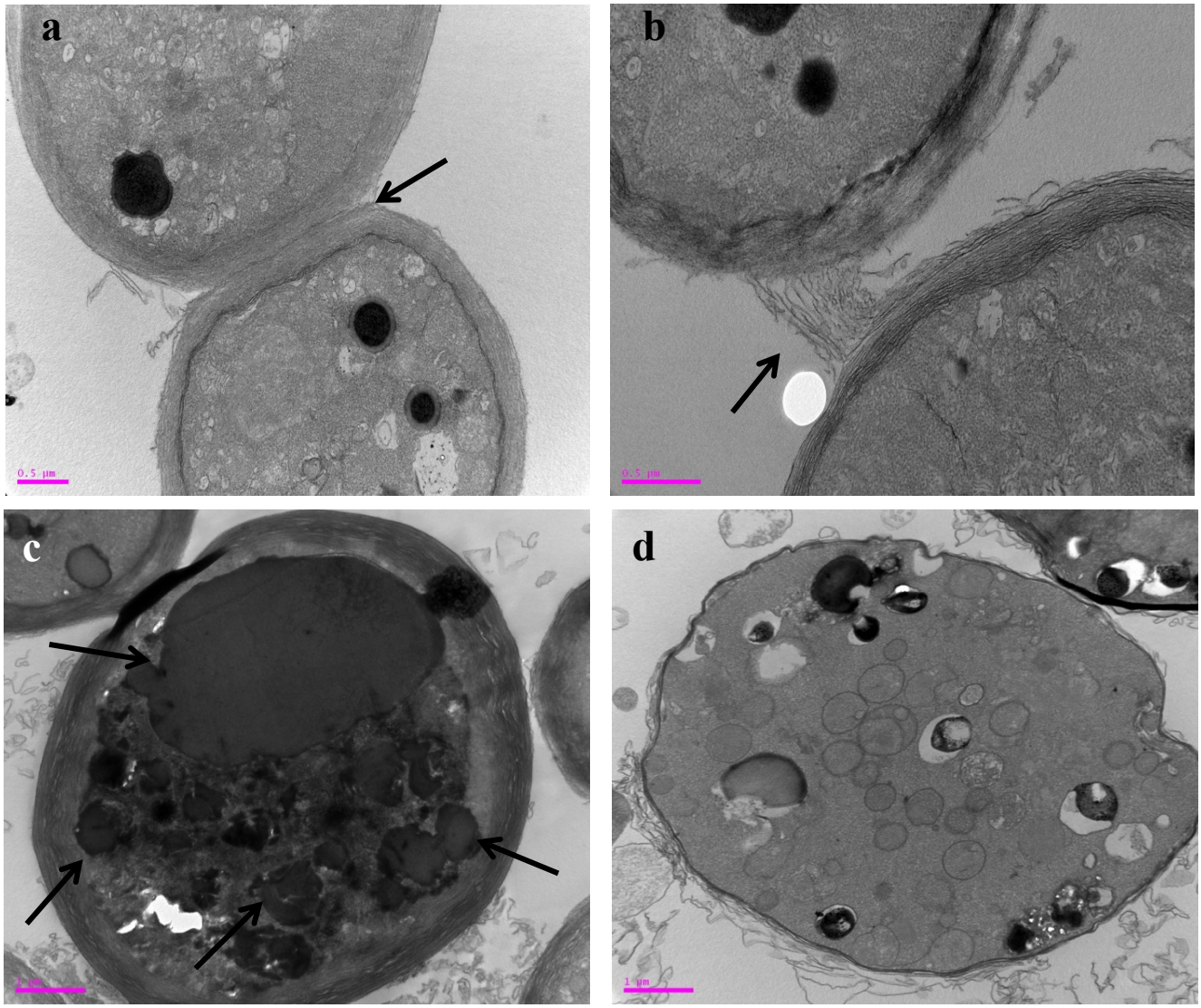
SI. F.1. Transmission electron micrographs of *Aurantiochytrium* sp. KRS101 cells in the lag phase (12 h). N-Nucleus, M-Mitochondria, GB-Golgi Bodies, EDP-Electron Dense Particles.



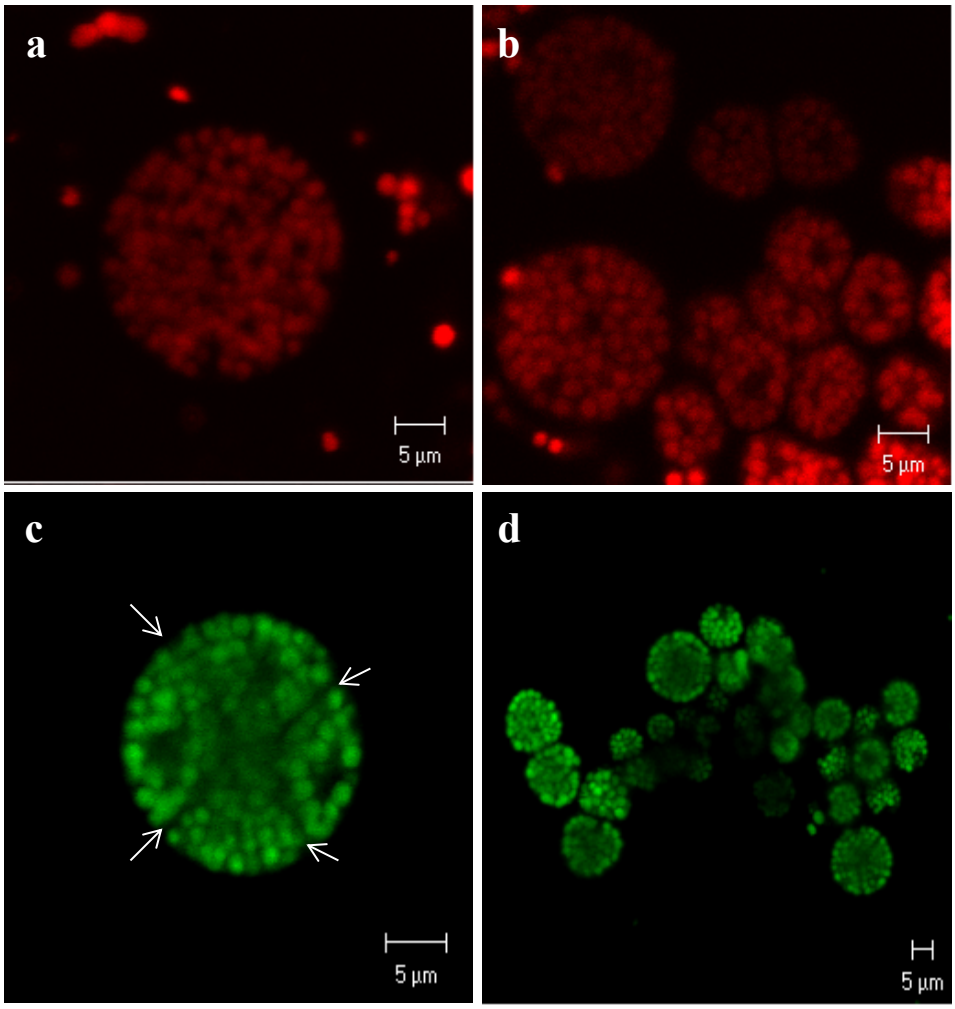
SI. F.2. Transmission electron micrographs of *Aurantiochytrium* sp. KRS101 cells in the exponential phase (24, and 48 h). (a, b) early-exponential phase (24 h) cells, (c, d) mid-exponential phase (48 h) cells. The arrow in (d) indicates the disruption in multi-layered outer membrane. N-Nucleus, LB-Lipid Bodies, V-Vacuoles.



SI. F.3. Transmission electron micrographs of *Aurantiochytrium* sp. KRS101 cells in the late-exponential and stationary phases (72, 96 and 120 h). (a, b) late-exponential phase (72 h) cells, (c) early-stationary phase (96 h) cells, (d) late-stationary phase (120 h) cells. The arrows in (a) and (b) indicate the budding of sporangiums. In (c), arrows indicate lipid bodies.



SI. F.4. Confocal images of Nile Red (a, b) and BODIPY 505/515 (c, d) stained *Aurantiochytrium* sp. KRS101 at stationary phase. The stained lipid droplets are shown in red (a and b) and green (c and d) color. White-arrows in (c) indicating the multi-layered membranes of multi-cellular sporangiums.



SI. F.5. Correlation between Nile Red fluorescence, BODIPY florescence, and GC analysis of *Aurantiochytrium* sp. KRS101. (Samples from 12, 24, 48, 72, 96, and 120 h were used for correlation fit).