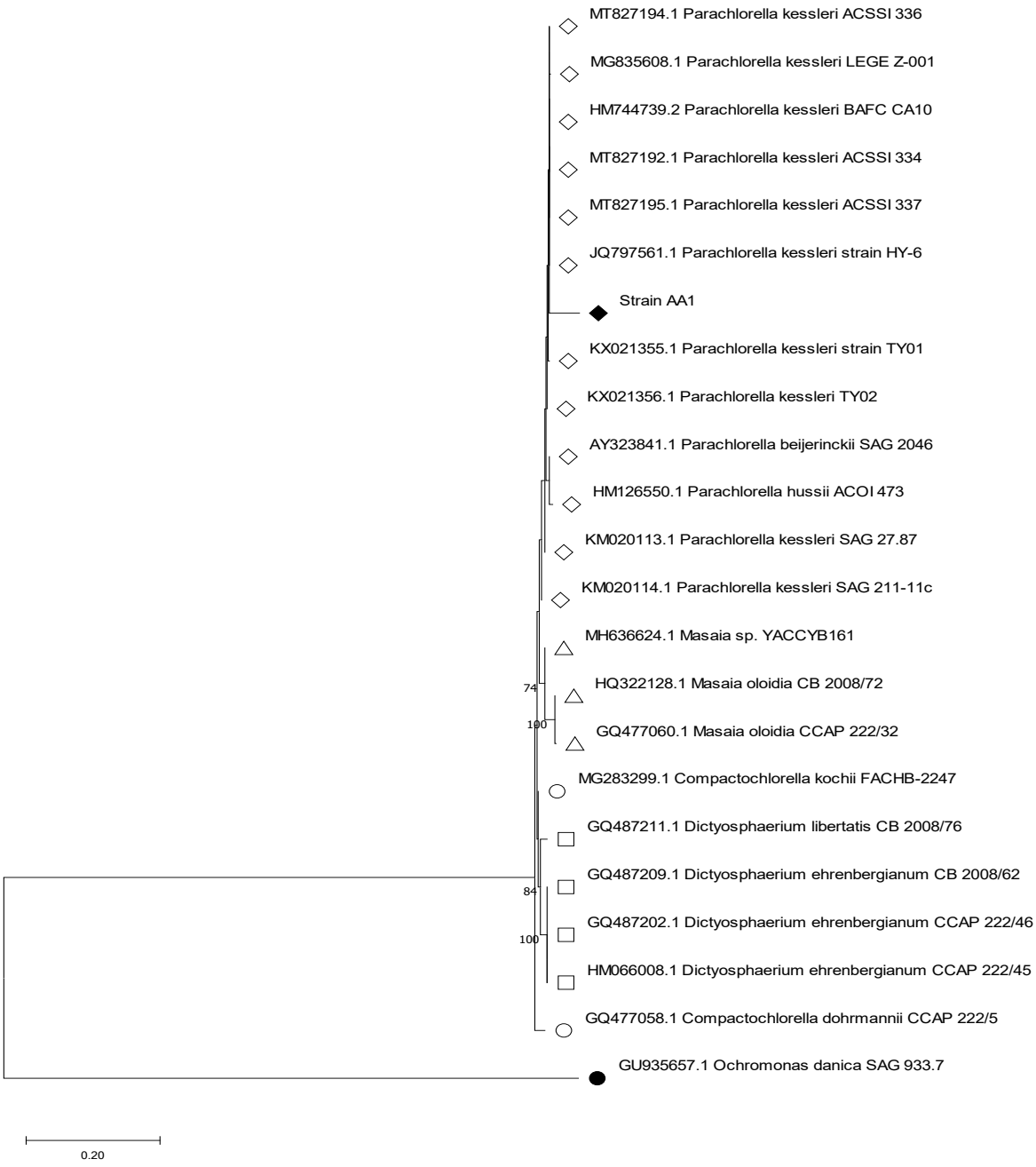

Figure S1. Phylogenetic assignment of strain AA1 (♦) using the neighbor-joining model based on its partial 18S rRNA gene sequence compared with 18S rRNA gene sequences of selected type strains and environmental isolates of *Masaia* spp. (Δ) *Dictyosphaerium* spp. (□), *Compactochlorella* spp. (o) and *Parachlorella* spp. (◊). The 18S rRNA gene sequence of *Ochromonas danica* (●) was used as an out-group. The scale bar represents two estimated changes per 10 nucleotides. Only bootstrap values ≥ 50 are shown.

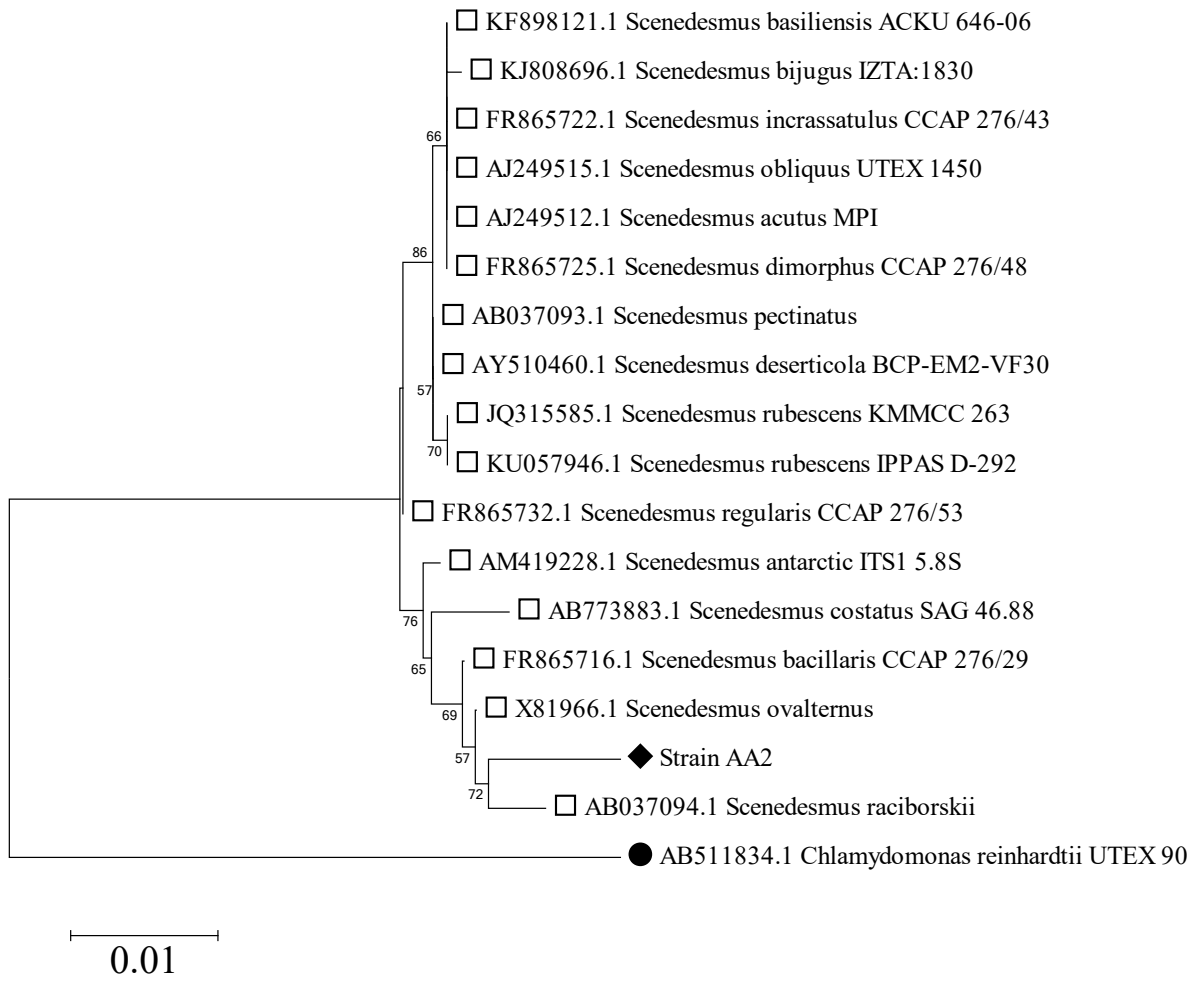

Figure S2. Phylogenetic assignment of strain AA2 (♦) using the neighbor-joining method based on its partial 18S rRNA gene sequence compared with 18S rRNA gene sequences of selected type strains and environmental isolates of *Scenedesmus* spp. (□). The 18S rRNA gene sequence of *Chlamydomonas reinhardtii* (●) was used as an out-group. The scale bar represents one estimated change per 100 nucleotides. Only bootstrap values ≥ 50 are shown.

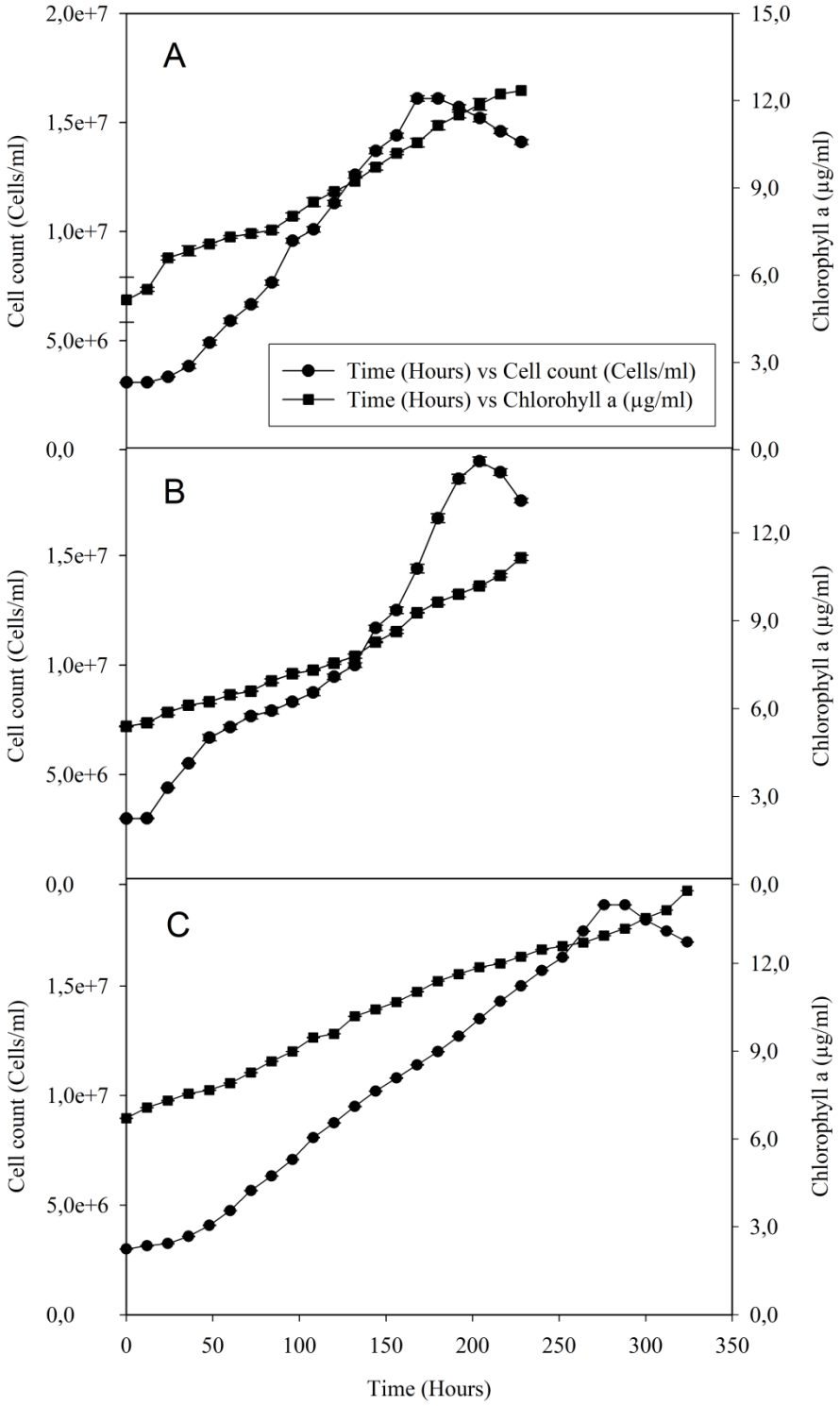

Figure S3.1. The growth of strain AA1 (A), strain AA2 (B), and strain AA3 (C) under photoautotrophic conditions in Chu (A, B) and Bourrelly medium (C). All data points shown are the means of two independently performed experiments.

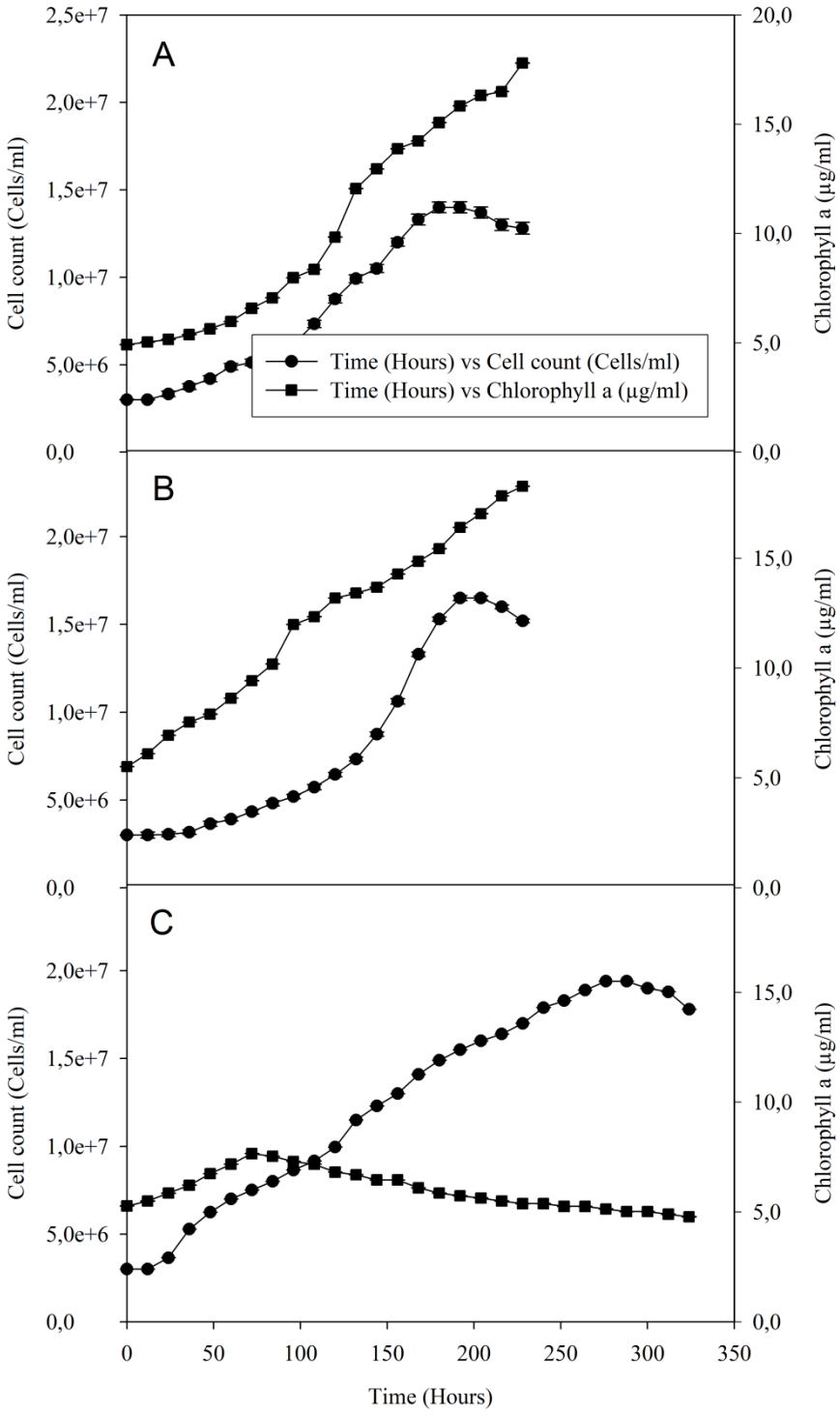

Figure S3.2. Photoheterotrophic growth of strain AA1 (A), strain AA2 (B), and strain AA3 (C), with 25mM acetate as the carbon source in Chu (A, B) and Bourrelly medium (C). All data points shown are the means of two independently performed experiments.

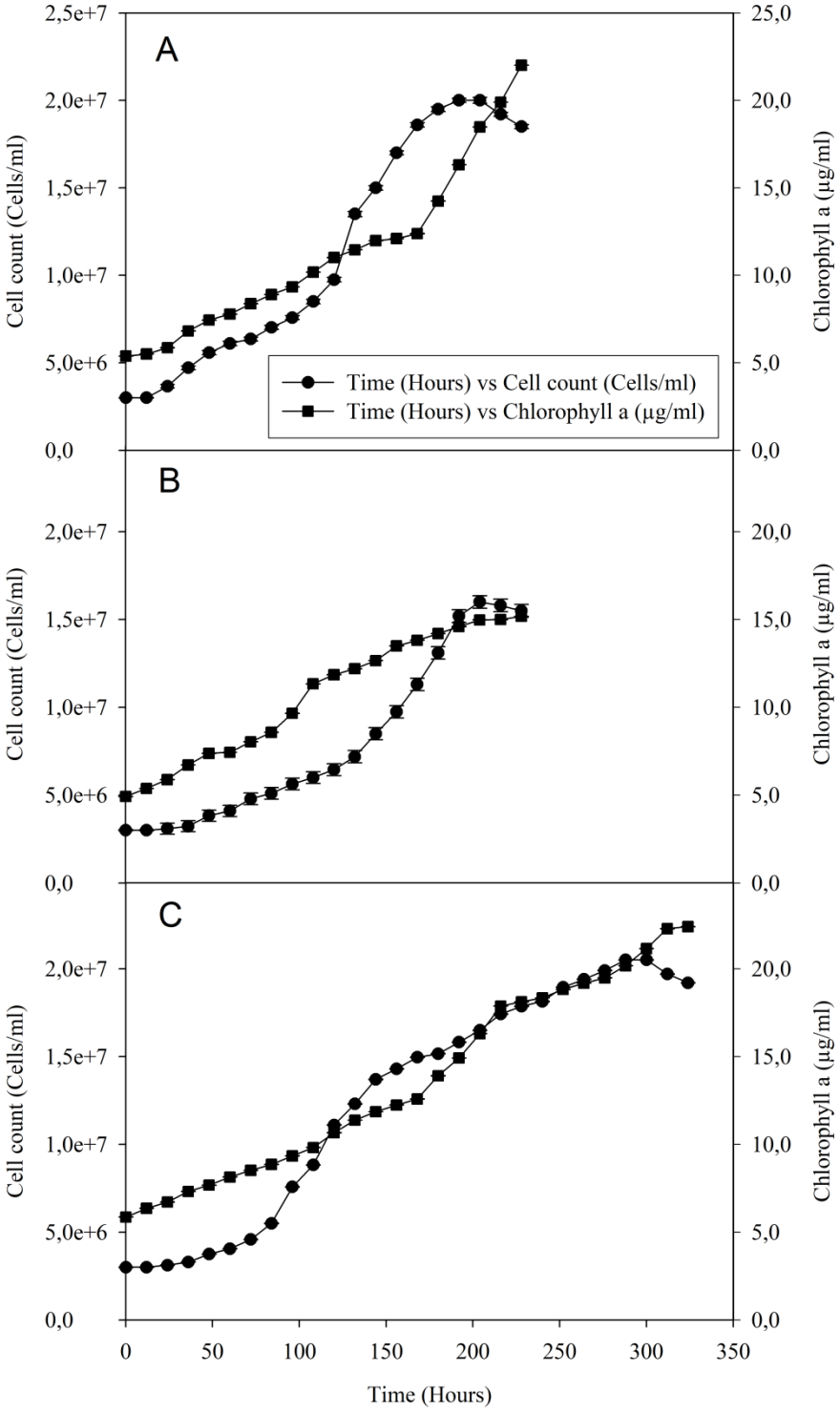

Figure S3.3. Photoheterotrophic growth of strain AA1 (A), strain AA2 (B), and strain AA3 (C), with 50mM glucose as the carbon source in Chu (A, B) and Bourrelly medium (C). All data points shown are the means of two independently performed experiments.

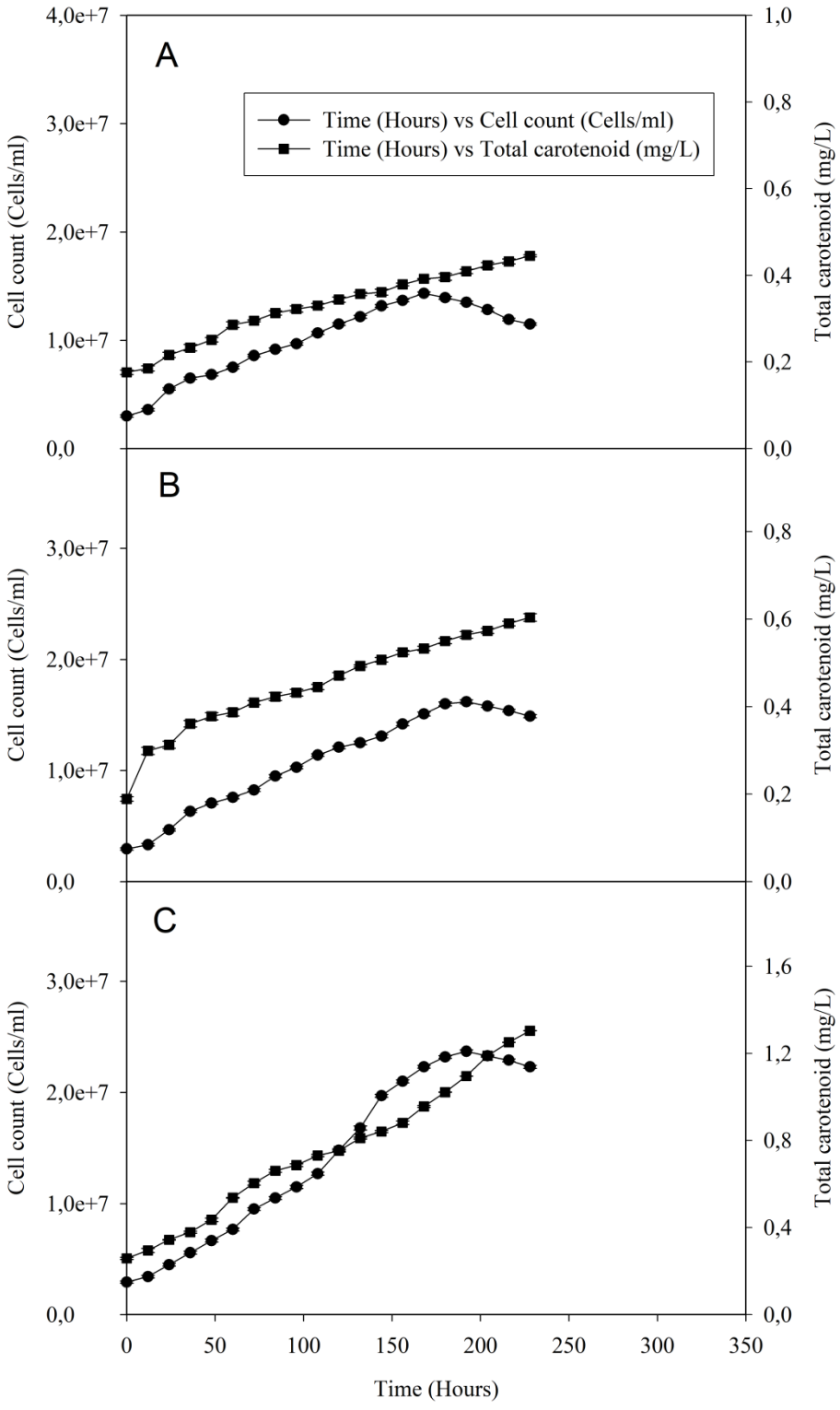

Figure S4.1. Growth of strain AA1 under photoautotrophic conditions in Chu medium (0mM salicylate) (A) and photoheterotrophic conditions supplemented with 0.5 mM salicylate (B) and 1.5 mM salicylate (C). All data points shown are the means of two independently performed experiments.

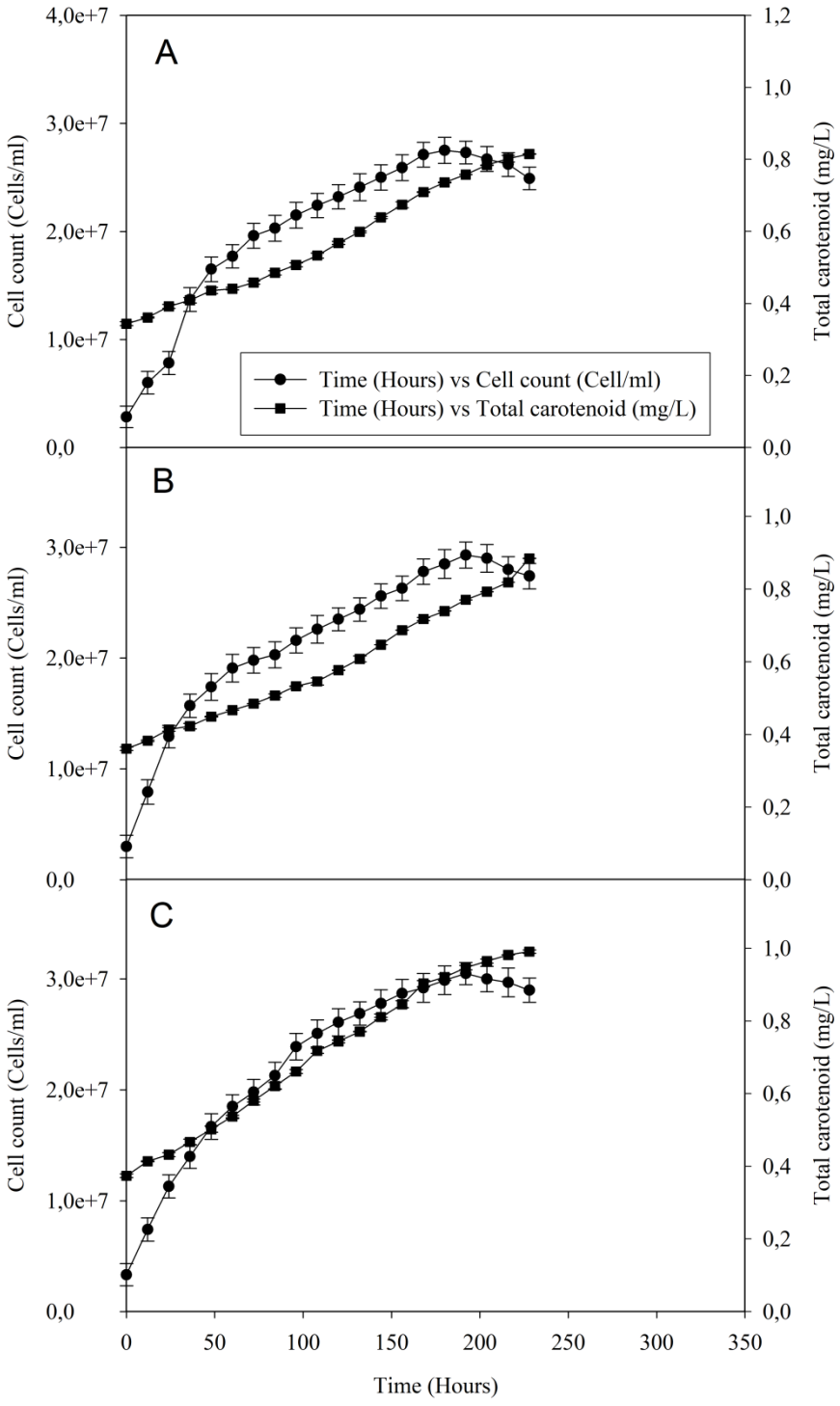

Figure S4.2. Growth of strain AA2 under photoautotrophic conditions in Chu medium (0mM salicylate) (A) and photoheterotrophic conditions supplemented with 0.5 mM salicylate (B) and 1.5 mM salicylate (C). All data points shown are the means of two independently performed experiments.

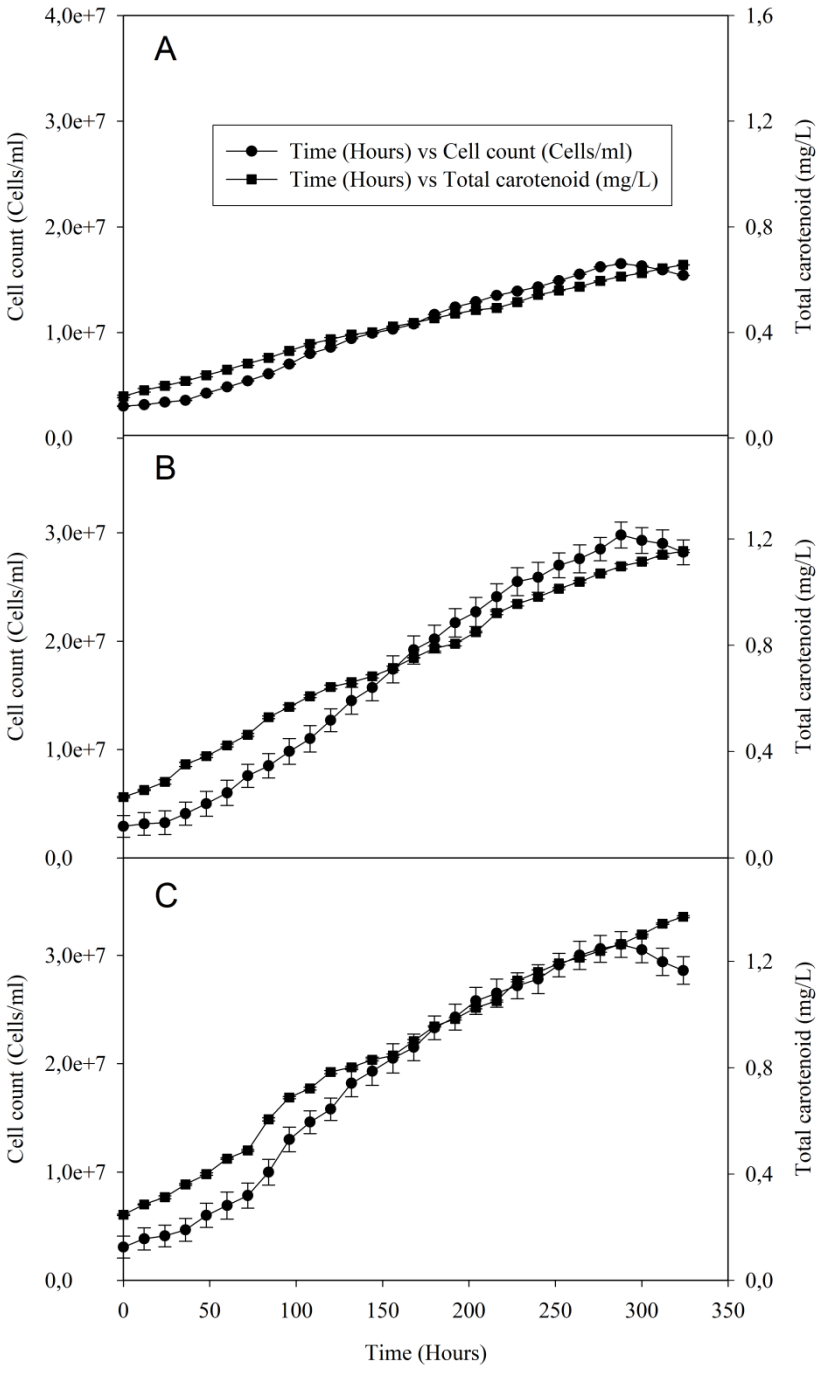

Figure S4.3. Growth of strain AA3 under photoautotrophic conditions in Bourrelly medium (0mM salicylate) (A) and photoheterotrophic conditions supplemented with 0.5 mM salicylate (B) and 1.5 mM salicylate (C). All data points shown are the means of two independently performed experiments.

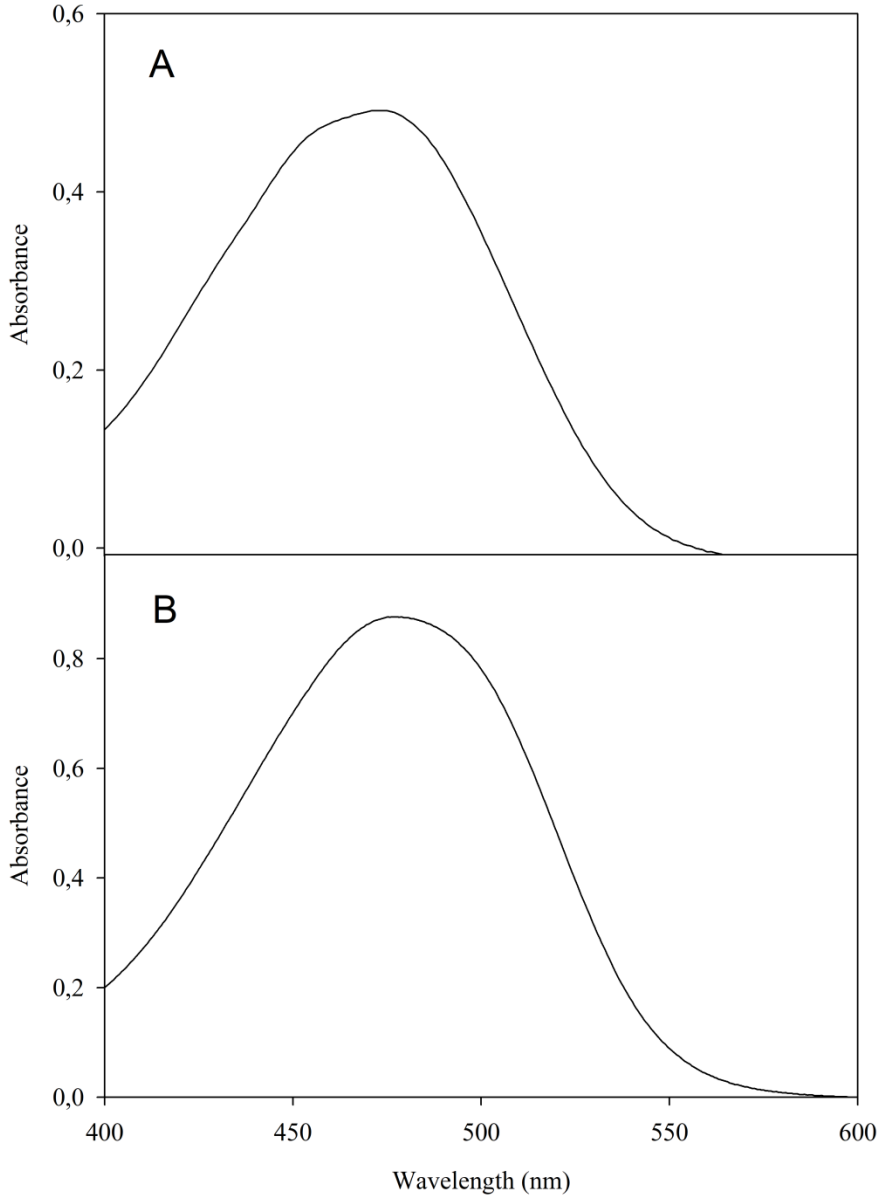

Figure S5. The visible absorption spectrum of diluted acetone extracts of late stationary cells of strain AA3 after photoautotrophic growth (A) and authentic astaxanthin in acetone (B).

Table S1. Retention value and absorption maximum (λmax, nm) of the two major carotenoids identified in strain AA3 acetone extracts using two different solvent systems. R_f values were obtained using authentic reference material (astaxanthin and β-carotene) and literature values. Solvent a; acetone/n-hexane (30:70%, v/v), solvent b; acetone/petroleum ether (25:75%, v/v).

Carotenoid	Retention value (R_f) solvent a	Literature (R_f) value * solvent a	Retention value (R_f) solvent b	Literature (R_f) value ** solvent b
Authentic β-carotene	0.98	0.99	0.95	0.95
β-carotene	0.96	0.98	0.95	0.95
Authentic astaxanthin	0.48	0.50	0.39	0.39
Astaxanthin	0.48	0.50	0.39	0.39

* Khanafari et al. (2007). Journal of Environmental Health Science and Engineering, 4(2), 93-98.

** Jaime et al. (2010). Food Science and Technology, 43(1), 105-112.