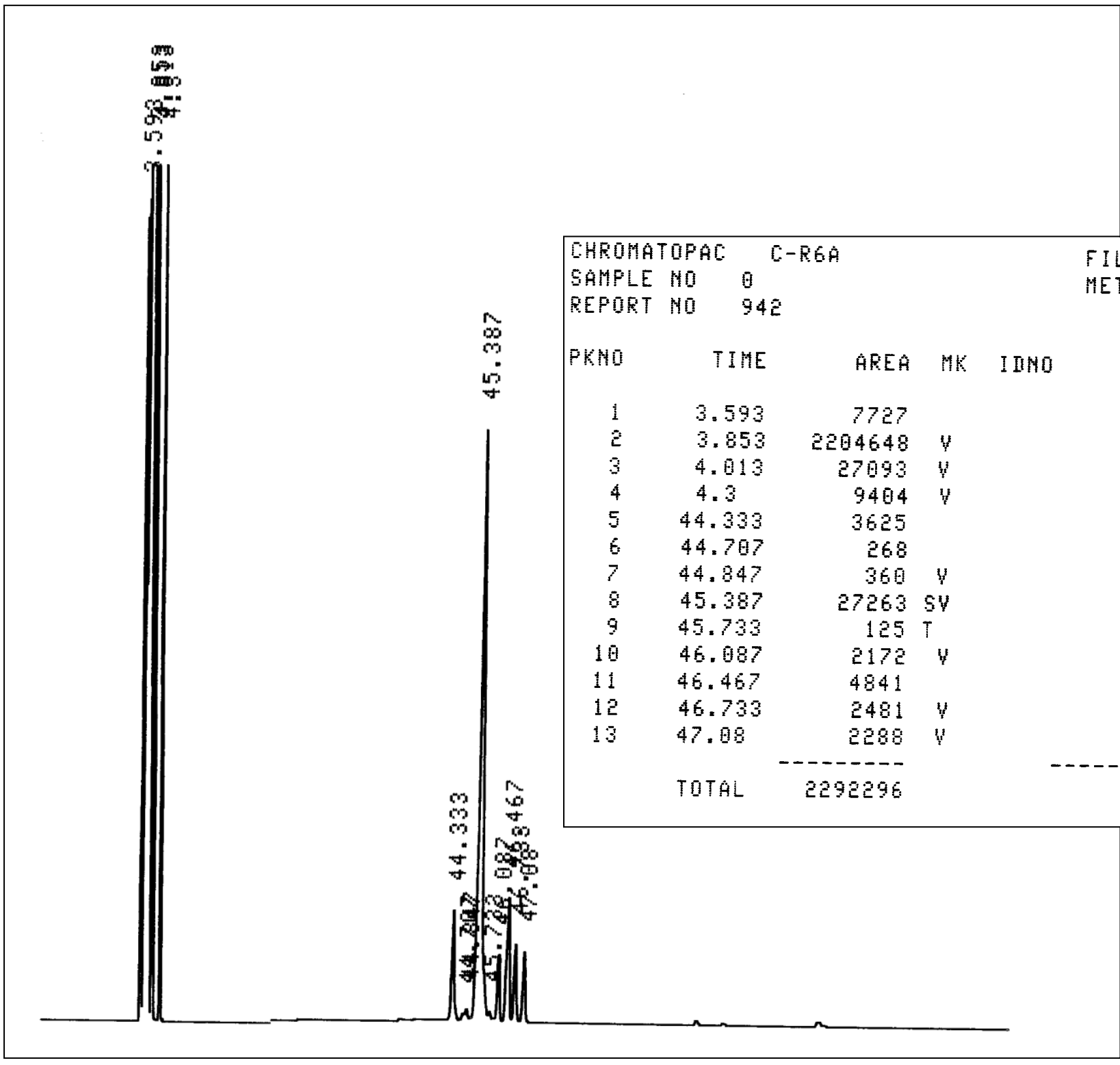
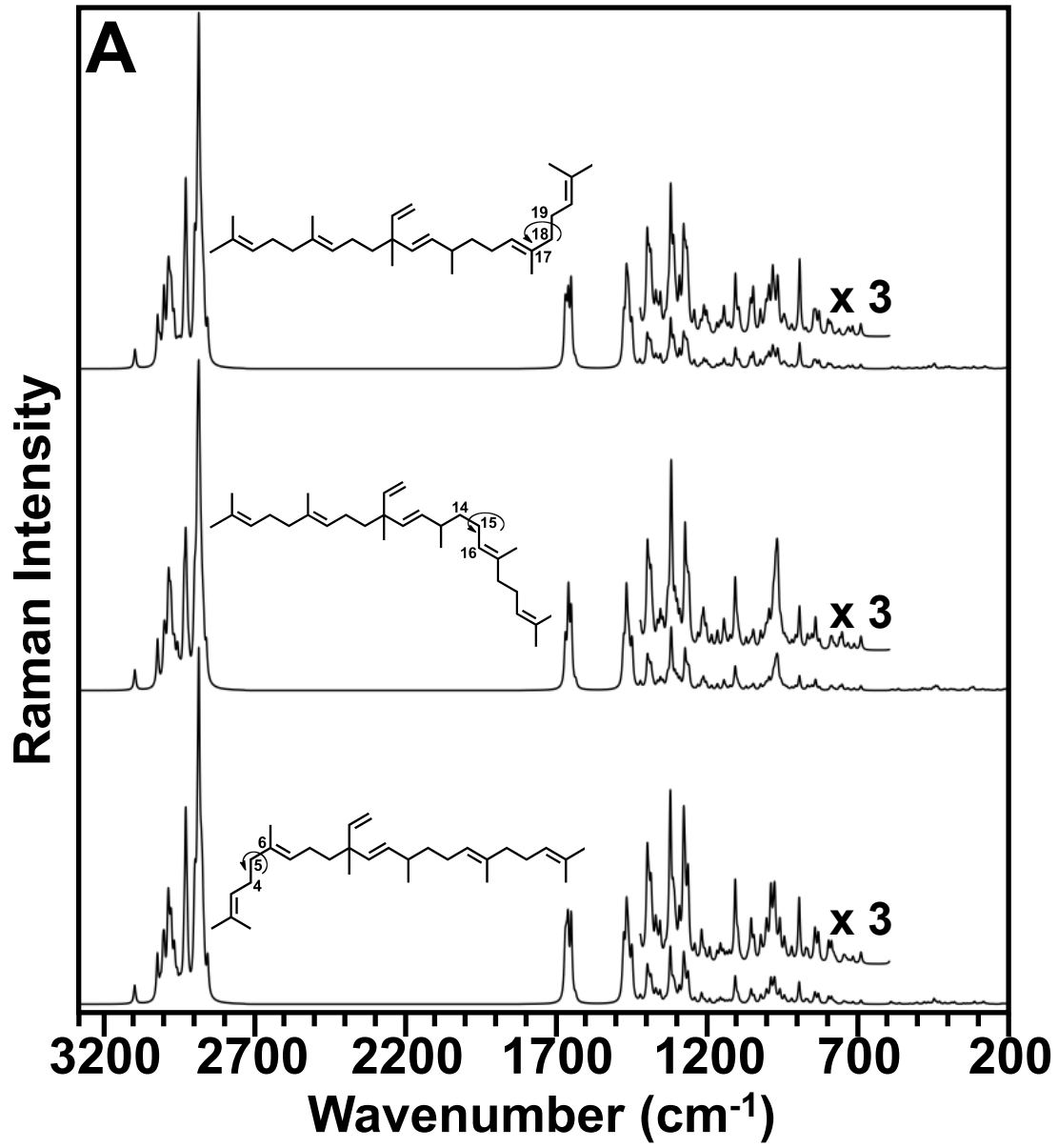


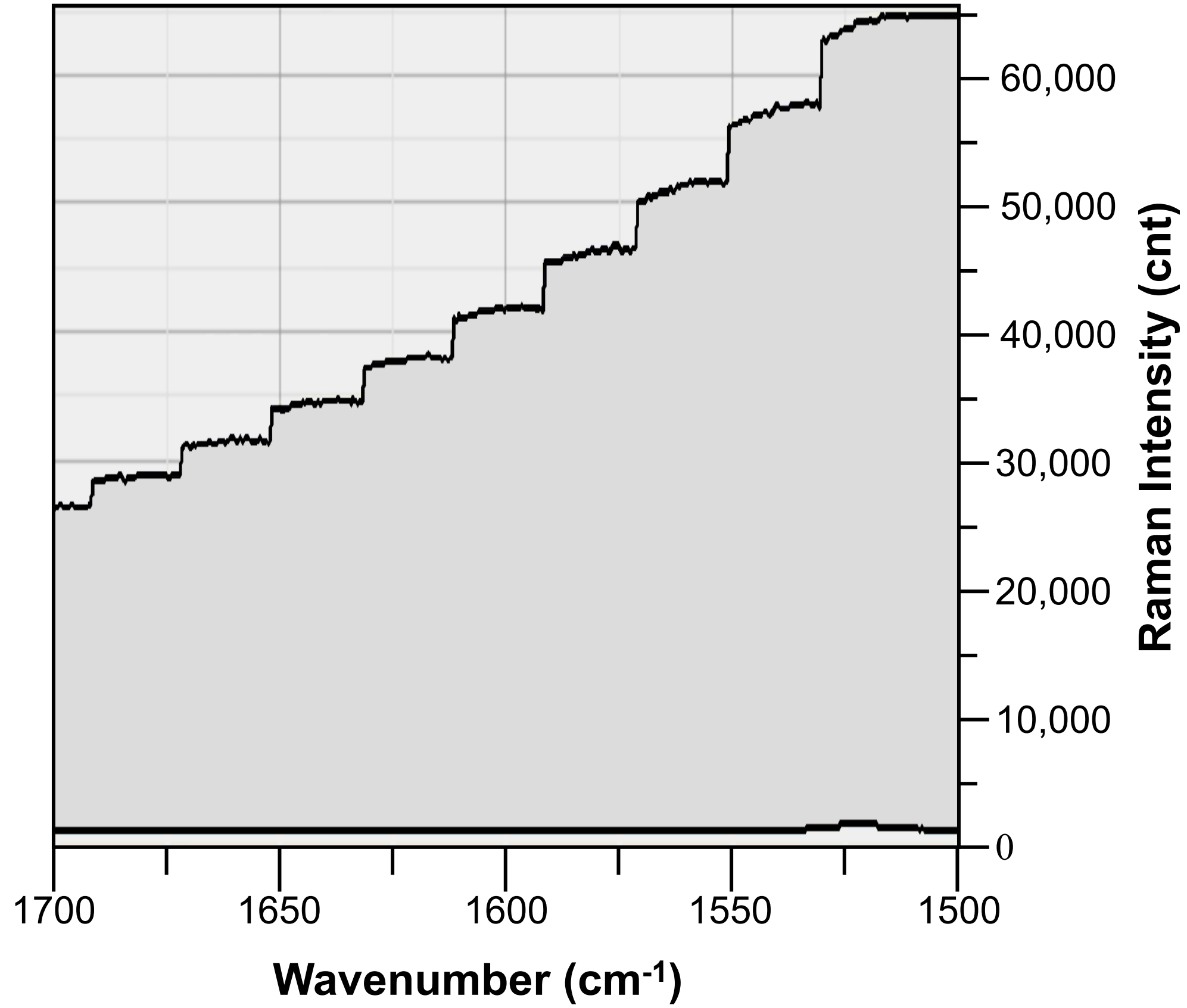
CHROMATOPAC C-R6A FILE
SAMPLE NO 0 METHOD
REPORT NO 942

PKNO	TIME	AREA	MK	IDNO	CONC
1	3.593	7727			0.3371
2	3.853	2204648	V		96.1765
3	4.013	27093	V		1.1819
4	4.3	9404	V		0.4103
5	44.333	3625			0.1582
6	44.707	268			0.0117
7	44.847	360	V		0.0157
8	45.387	27263	SV		1.1893
9	45.733	125	T		0.0055
10	46.087	2172	V		0.0948
11	46.467	4841			0.2112
12	46.733	2481	V		0.1082
13	47.08	2288	V		0.0998
	TOTAL	2292296			100

Supplemental Figure S1. **Gas chromatography of botryococcene total hydrocarbon fraction.** Peaks occurring between approximately 44 and 48 minutes (peaks number 5-13) correspond to the 9 compounds, at a minimum, found within the total hydrocarbon fraction. The largest peaks represent the botryococcenes isolated for this study. Peak number 8 is C_{34} botryococcene. Peaks between 3.5 and 4.3 minutes (peaks number 1-4) are solvent peaks.



Supplemental Figure S2. **Raman spectra for three C_{30} botryococcene conformers.** *A*, Raman spectra of C_{30} botryococcene conformers in the 200 - 3300 cm^{-1} range. *B*, Raman spectra of C_{30} botryococcene conformers in the 1600 - 1740 cm^{-1} ν(C=C) stretching region. Arrows indicate rotation around indicated carbon.



Supplemental Figure S3. ***B. braunii* autofluorescence degradation during photobleaching.** *B. braunii* colonies strongly autofluoresce using a 785 nm laser, but the magnitude quickly degrades as cells are photobleached yielding a step-like spectra as each portion of wavenumbers is collected. The first spectrum (top black line) was collected from a *B. braunii* colony at the onset of a 20 minute photobleaching treatment. Each "step" equals approximately 1 minute of data collection under photobleaching conditions. Photobleaching was considered complete when a stable baseline intensity was observed. The second spectrum (bottom black line) was collected after 20 minutes of photobleaching treatment indicating the complete loss of background autofluorescence. In this second spectra, the band at ~1520 cm^{-1} is from carotenoids.