

Figure S1. Raman spectra of auto-oxidized linoleic acid (a) and H<sub>2</sub>O<sub>2</sub> aqueous solution (b). A band near 870 cm<sup>-1</sup> is observed in both spectra, suggesting that the band is assigned to a -O-OH stretching mode.

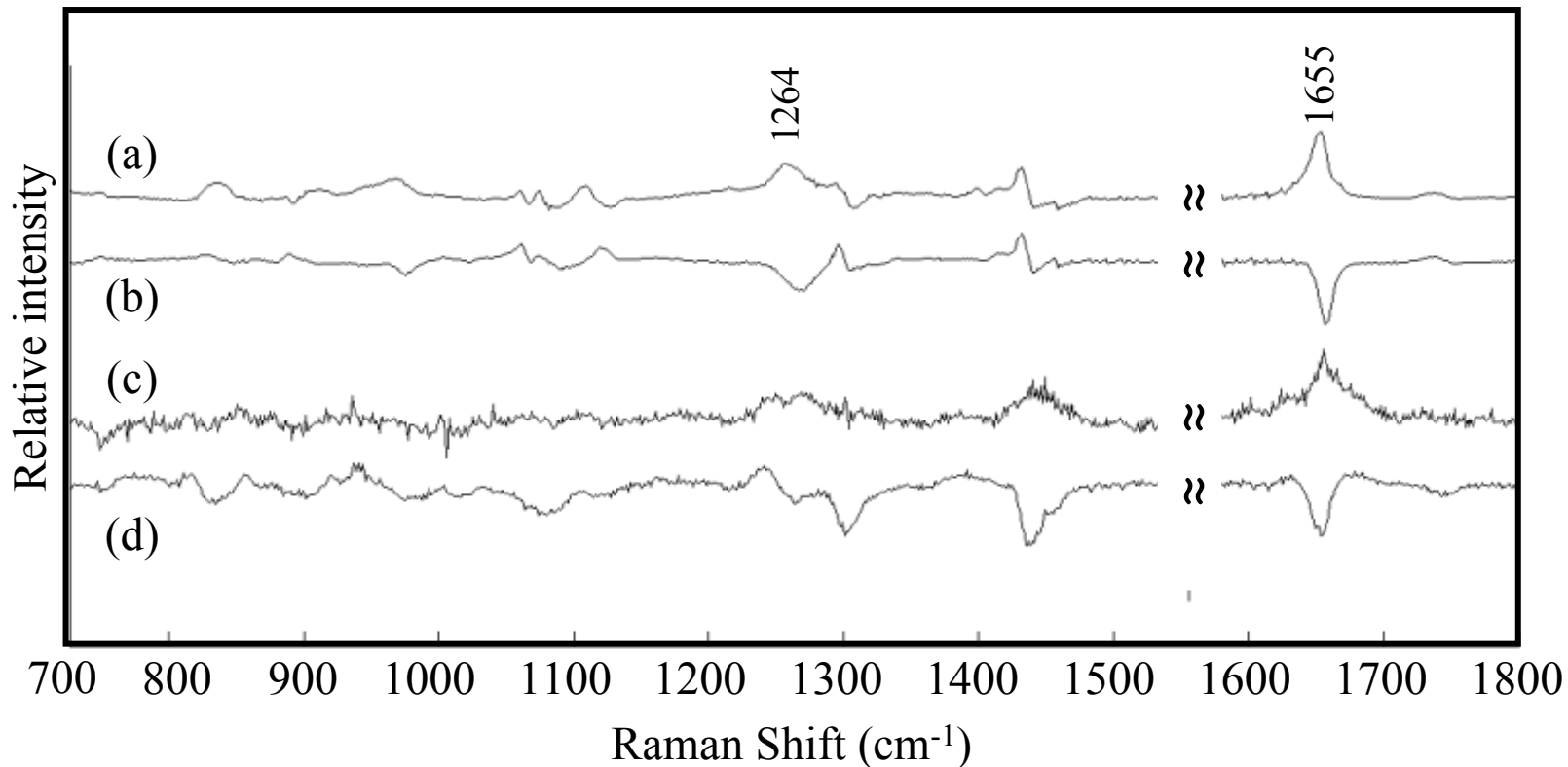


Figure S2. Difference spectra among the spectra in Fig. 4. The spectrum (a) is a difference spectrum between adipose tissues treated with TL and control. The spectrum (b) is that between adipose tissues treated with TC and control. The spectrum (c) is that between skin tissues treated with TL and control. The spectrum (d) is that between skin tissues treated with TC and control. The spectra (a) and (c) show remark positive bands near 1264 and 1655 cm<sup>-1</sup>, which are assigned to =C-H and C=C vibrational modes. In contrast, the spectra (b) and (d) show these bands in negative direction.

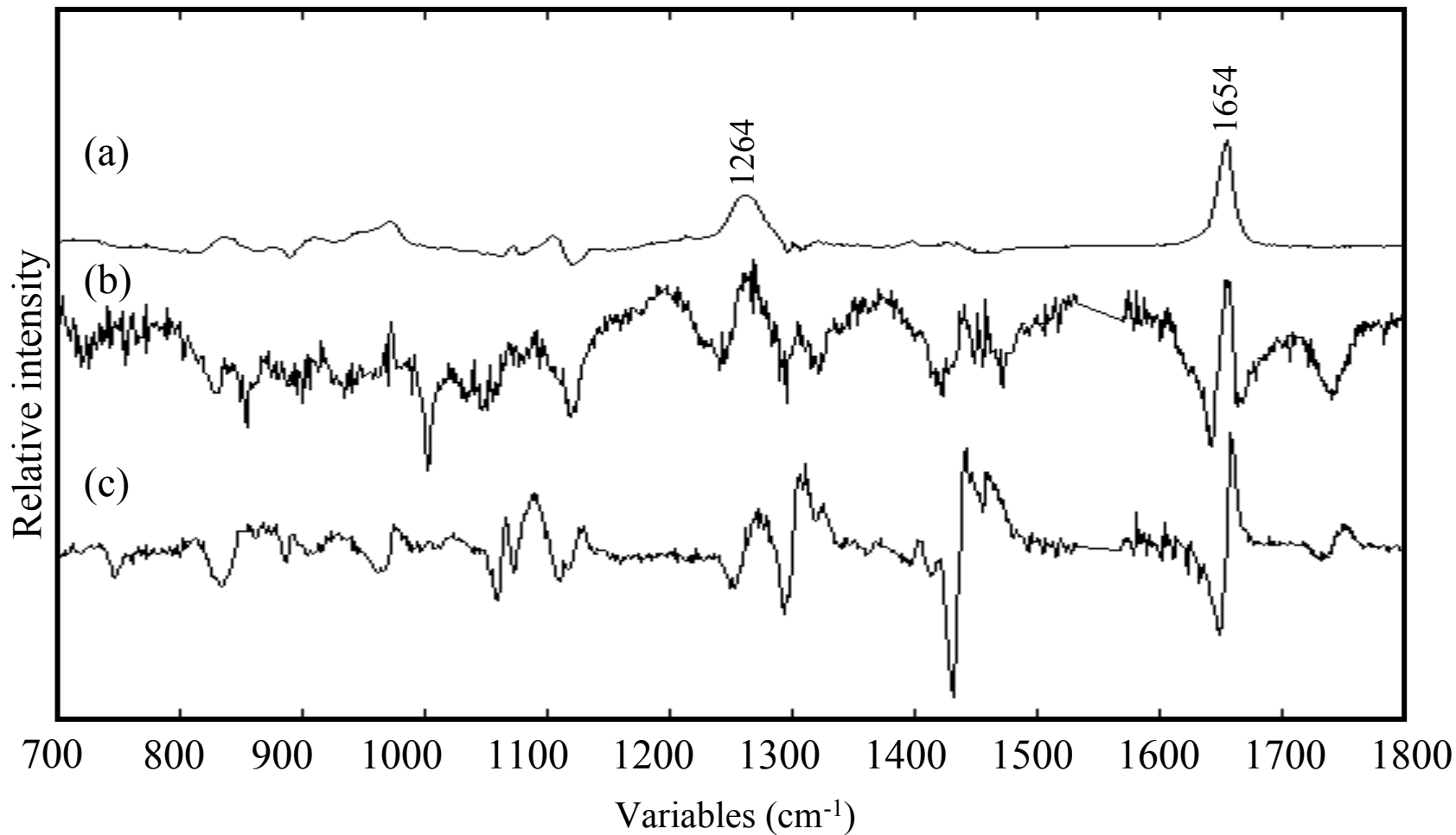


Figure S3. Loading plots of factors 1 (a), 2 (b) and 3 (c) of the PLS-discrimination analysis for the datasets of the adipose tissues treated with TL and TC, and control.

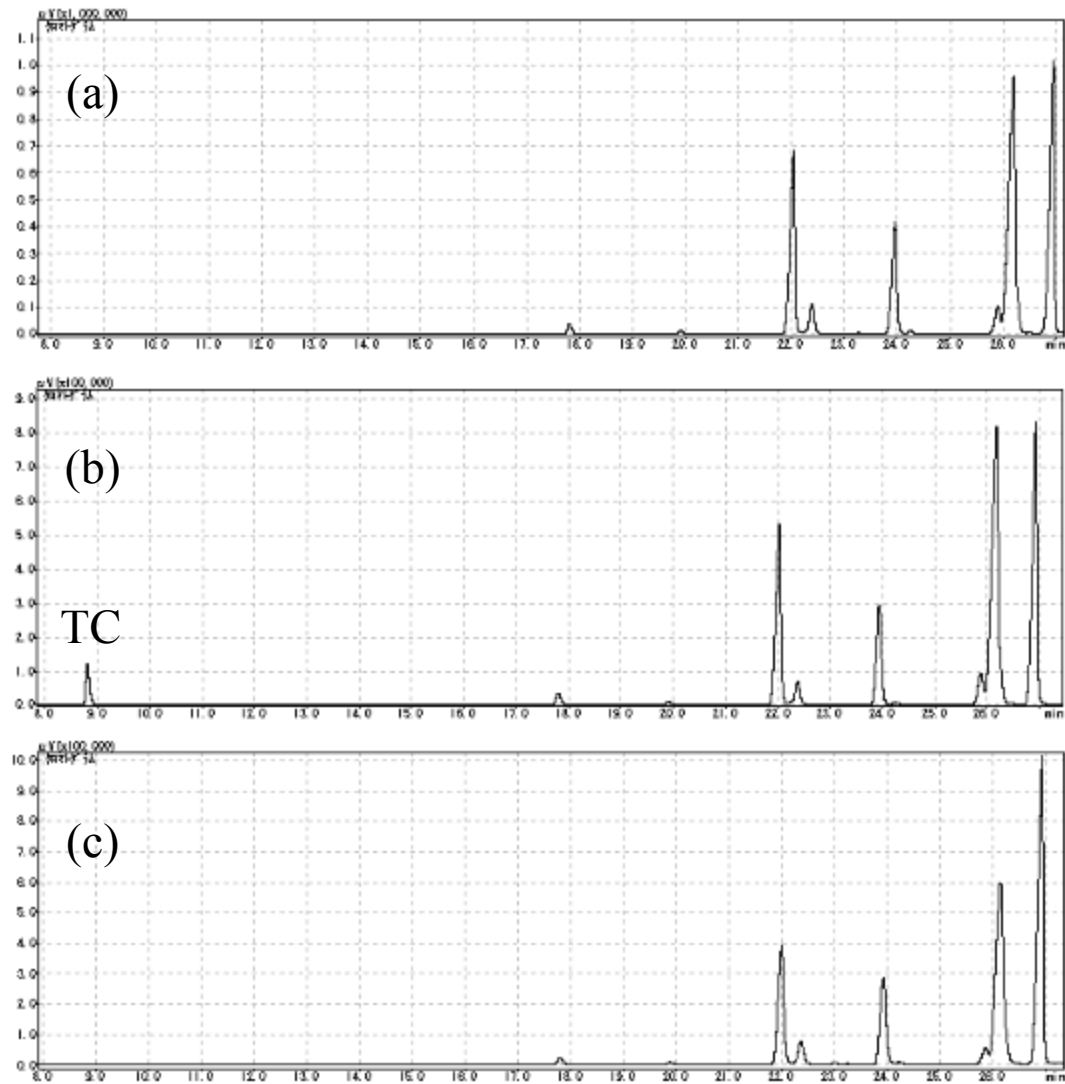


Figure S4. Gas chromatography spectra of adipose tissues of control (a), TC (b) and TL (c) treated groups at 6<sup>th</sup> week. TC can be found only in the TC-treated group.

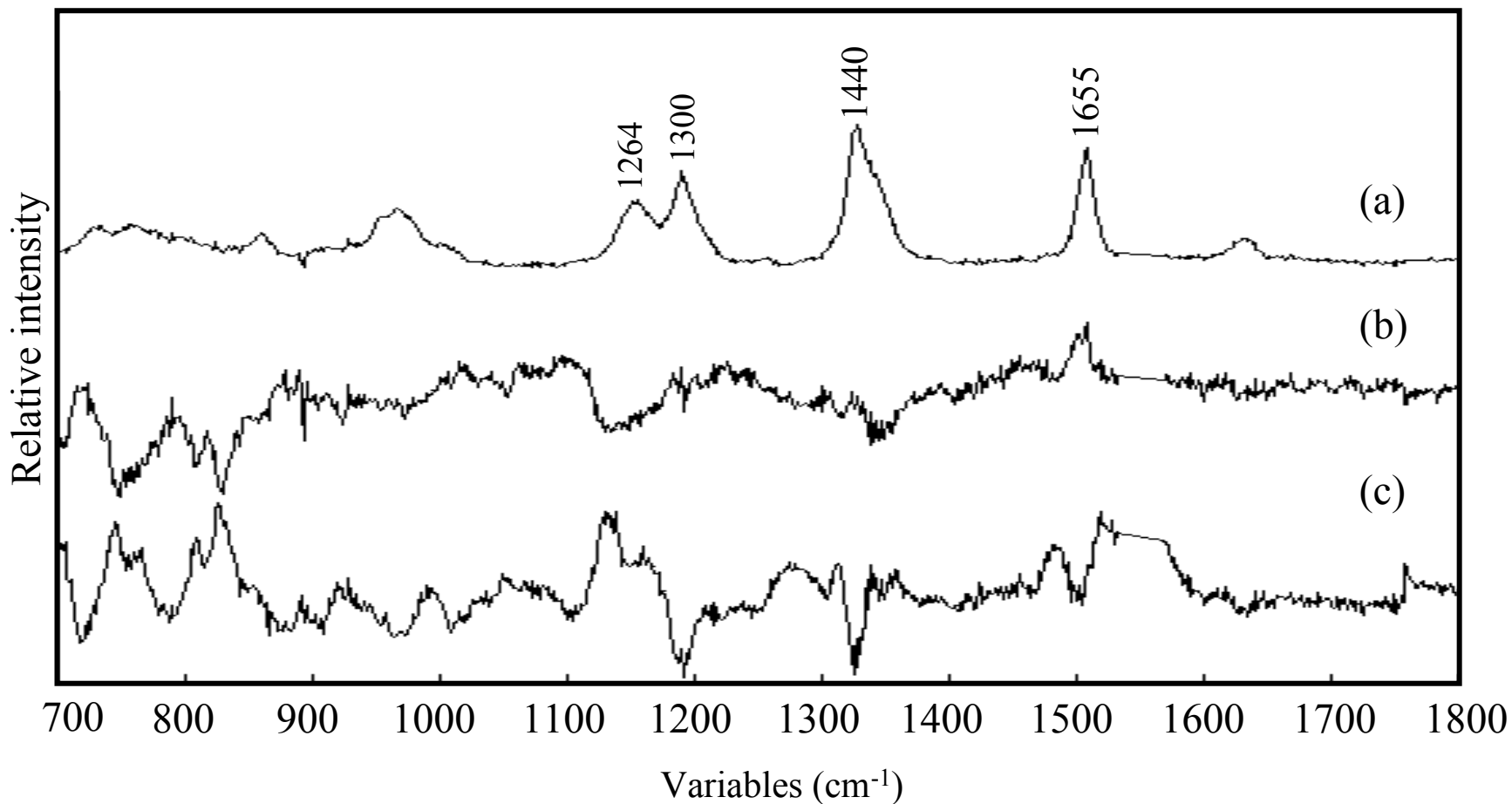


Figure S5. Loading plots of factors 1 (a), 2 (b) and 3 (c) of the PLS-discrimination analysis for the datasets of the skin tissues treated with TL and TC, and control. Their contribution rates were 22, 38 and 11 %, respectively.