



**Supplemental Figure 4.**  $^{13}\text{C}$  labeling of C16:3 fatty acids during N deprivation in cells cultured in TAP media at  $160\ 160\ \mu\text{mol m}^{-1}\ \text{s}^{-1}$ . Cells grown to log phase in N replete media were moved at time 0 to TAP media lacking N with 100% uniformly labeled  $^{13}\text{C}$  acetate. After 40hrs the media was replaced with TAP media lacking N and containing unlabeled acetate for the remainder of the time course. The proportions of different mass isomers are plotted as a function of time. Panel AB, and C represent mass isomer distributions for ions of intact C16:3 FAME molecules from TAG, MGDG, and Polar Lipid fractions respectively. Filled squares represent unlabeled molecules (M+0); filled diamonds, M+1 (one  $^{13}\text{C}$  atom); empty triangles, M+2; empty circles, the sum of M+3 through M+16 (fully labelled), Error bars indicate range (n=2).