

Figure S1 : PCA score plot for fatty acid composition, expressed in terms of concentrations (ng / mg) from *Mirocaris fortunata* muscle samples, exposed to two pressure conditions, atmospheric pressure (AP open circles, $n = 5$) and 18 MPa (BOX full black circles, $n = 5$). Goodness of fit $R^2 = 0.794$

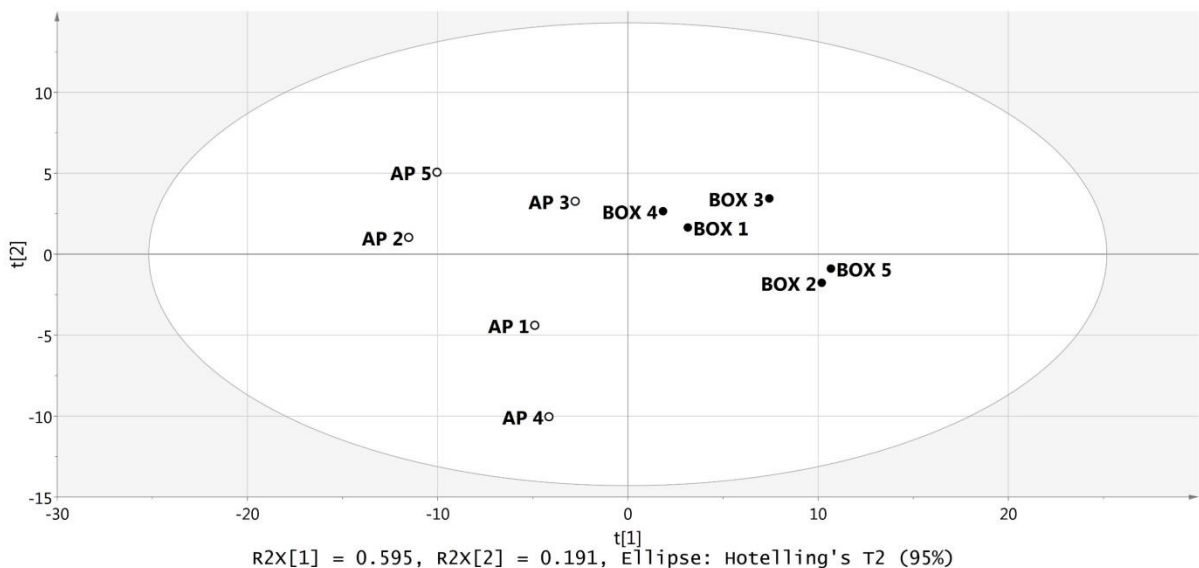


Figure S2 : PCA score plot for complex lipid composition, expressed in terms of concentrations (nanoM / mg) from *Mirocaris fortunata* muscle samples, exposed to two pressure conditions, atmospheric pressure (AP open circles, $n = 5$) and 18 MPa (BOX full black circles, $n = 5$). Goodness of fit $R^2 = 0.786$

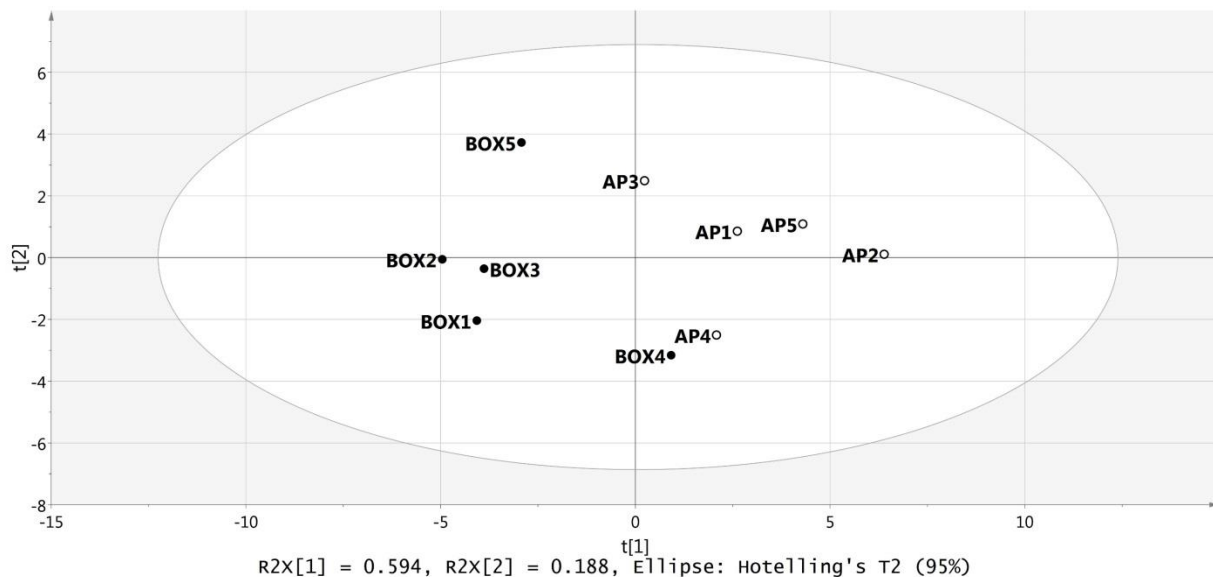


Figure S3 : PCA score plot for fatty acid percentages (% weight) from *Mirocaris fortunata* muscle samples, exposed to two pressure conditions, atmospheric pressure (AP open circles, $n = 5$) and 18 MPa (BOX full black circles, $n = 5$). Goodness of fit $R^2 = 0.782ci$

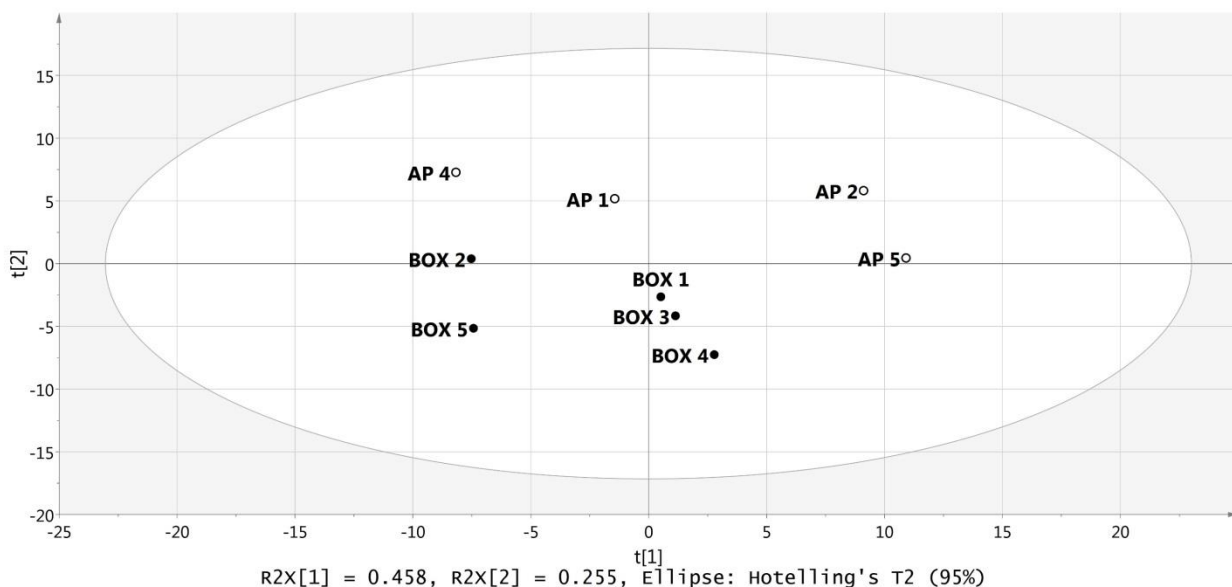


Figure S4 : PCA score plot for complex lipid composition, expressed in terms of percentages (molar %) from *Mirocaris fortunata* muscle samples, exposed to two pressure conditions, atmospheric pressure (AP open circles, $n = 4$) and 18 MPa (BOX full black circles, $n = 5$). Goodness of fit $R^2 = 0.713$

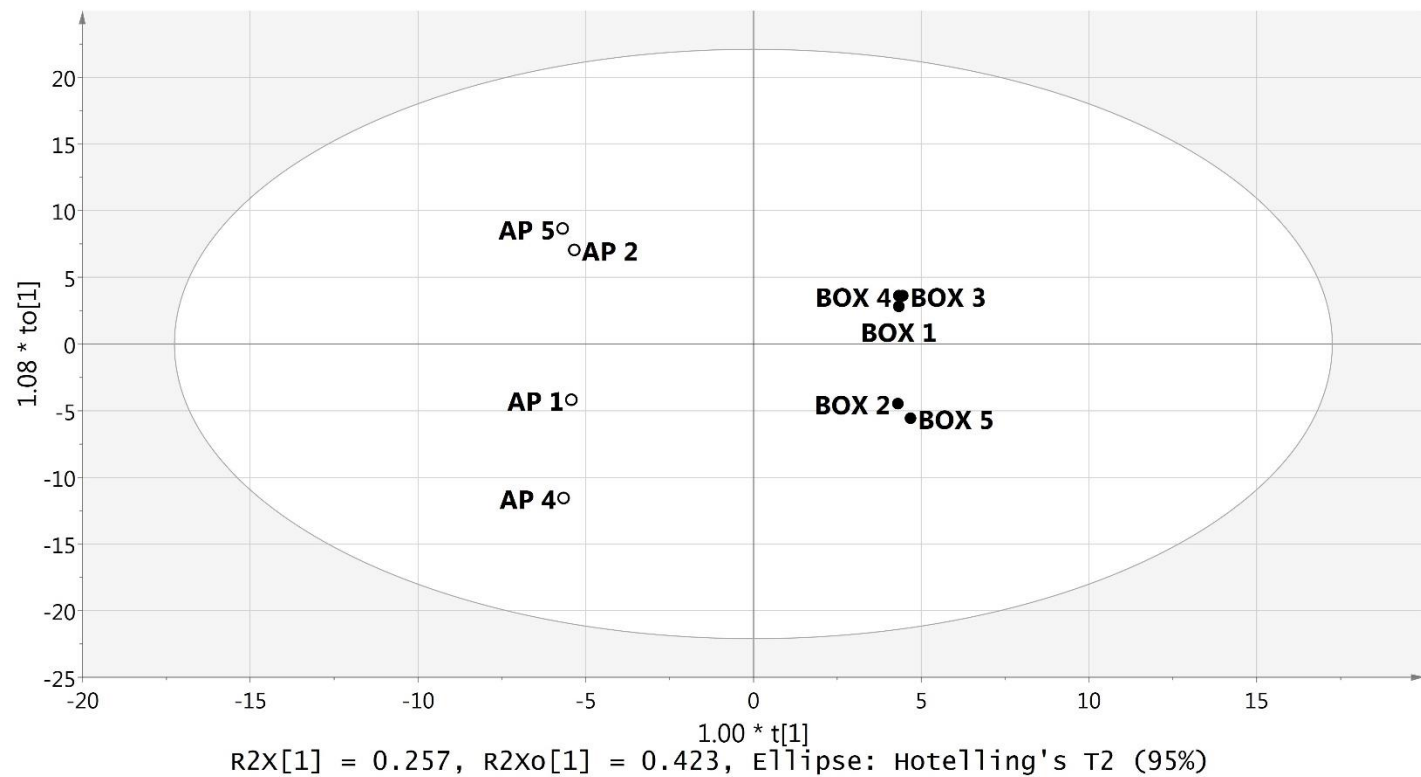


Figure S5 : OPLS-DA score plot for complex lipid membrane composition (molar %) from *Mirocaris fortunata* muscle samples exposed to two pressure conditions, atmospheric pressure (AP open circles, n=4) and 18 MPa (BOX full black circles, n=5). Goodness of fit $R^2 = 0.680$, goodness of prediction by cross validation $Q^2 = 0.907$.