Supplementary Material

Dissecting target toxic tissue and tissue specific responses of irinotecan in rats using metabolomics approach

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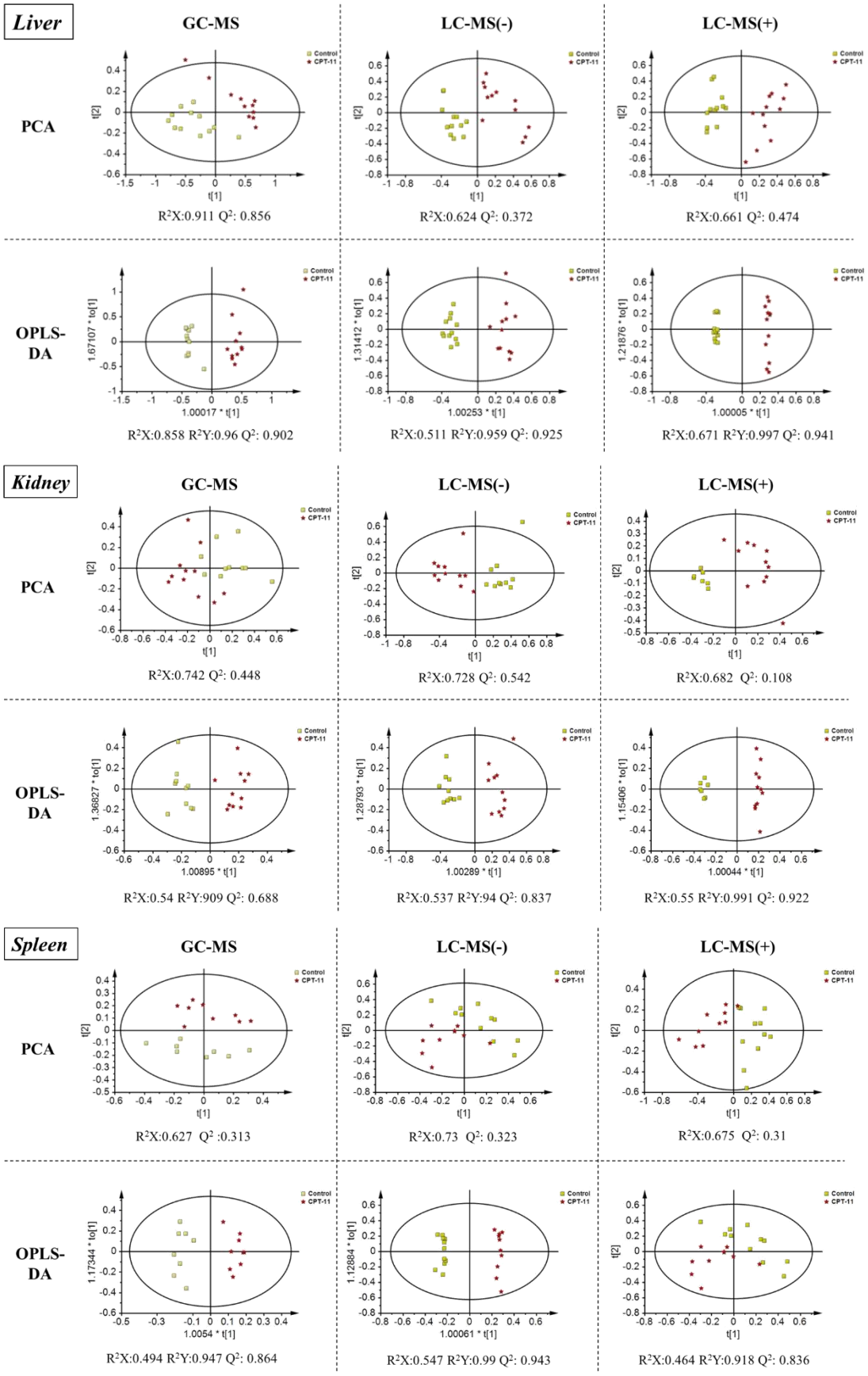
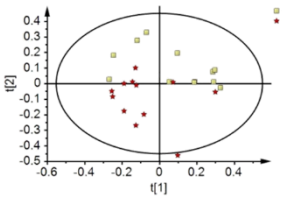

Liver
GC-MS
LC-MS(-)
LC-MS(+)
PCA
R²X:0.911 Q²: 0.856
R²X:0.624 Q²: 0.372
R²X:0.661 Q²: 0.474
OPLS-DA
R²X:0.858 R²Y:0.96 Q²: 0.902
R²X:0.511 R²Y:0.959 Q²: 0.925
R²X:0.671 R²Y:0.997 Q²: 0.941
Kidney
GC-MS
LC-MS(-)
LC-MS(+)
PCA
R²X:0.742 Q²: 0.448
R²X:0.728 Q²: 0.542
R²X:0.682 Q²: 0.108
OPLS-DA
R²X:0.54 R²Y:909 Q²: 0.688
R²X:0.537 R²Y:94 Q²: 0.837
R²X:0.55 R²Y:0.991 Q²: 0.922
Spleen
GC-MS
LC-MS(-)
LC-MS(+)
PCA
R²X:0.627 Q² :0.313
R²X:0.73 Q²: 0.323
R²X:0.675 Q²: 0.31
OPLS-DA
R²X:0.494 R²Y:0.947 Q²: 0.864
R²X:0.547 R²Y:0.99 Q²: 0.943
R²X:0.464 R²Y:0.918 Q²: 0.836
Control
CPT-11

Lung

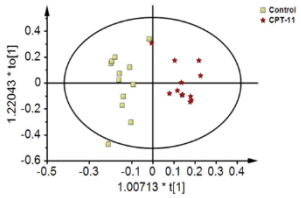
GC-MS

PCA



R^2X:0.785 Q^2: 0.528

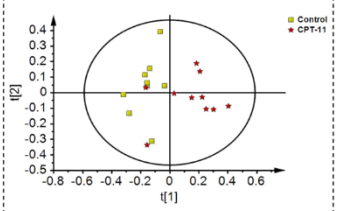
OPLS-DA



R^2X:0.707 R^2Y:0.989 Q^2: 0.843

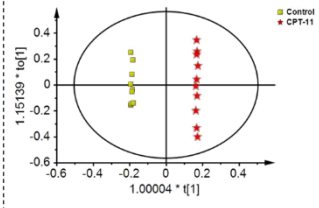
LC-MS(-)

PCA



R^2X:0.745 Q^2: 0.14

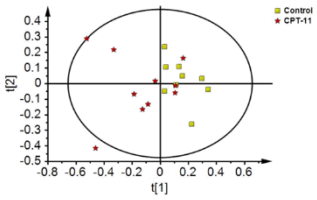
OPLS-DA



R^2X:0.45 R^2Y:0.832 Q^2: 0.712

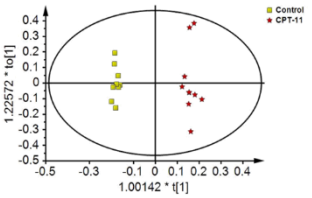
LC-MS(+)

PCA



R^2X:0.816 Q^2: 0.0506

OPLS-DA

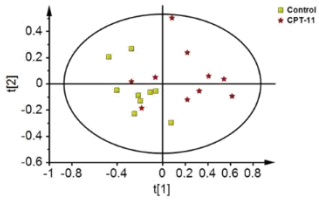


R^2X:0.514 R^2Y:0.995 Q^2: 0.88

Heart

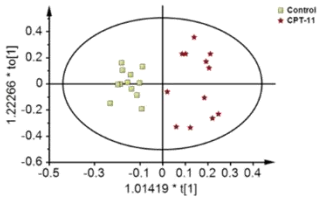
GC-MS

PCA



R^2X:0.872 Q^2: 0.584

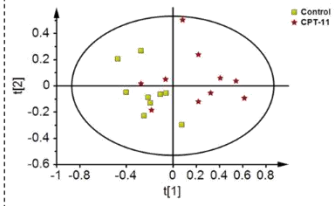
OPLS-DA



R^2X:0.552 R^2Y:0.872 Q^2: 0.672

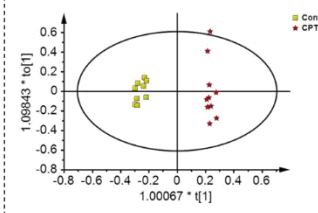
LC-MS(-)

PCA



R^2X:0.264 Q^2: 0.73

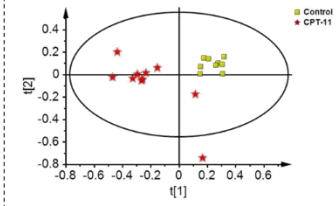
OPLS-DA



R^2X:0.545 R^2Y:0.988 Q^2: 0.921

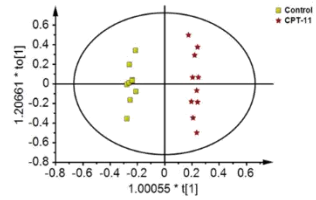
LC-MS(+)

PCA



R^2X:0.759 Q^2: 0.302

OPLS-DA

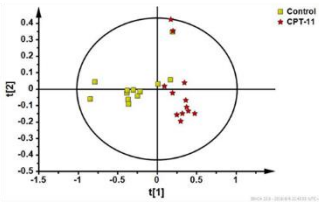


R^2X:0.51 R^2Y:0.95 Q^2: 0.73

Ileum

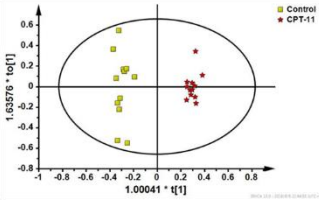
GC-MS

PCA



R^2X:0.798 Q^2:0.611

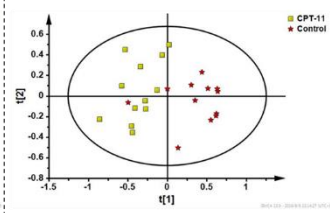
OPLS-DA



R^2X:0.686 R^2Y:0.98 Q^2 :0.882

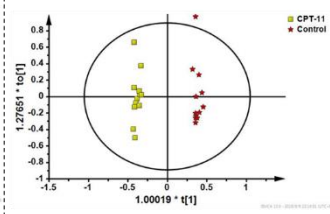
LC-MS(-)

PCA



R^2X:0.783 Q^2:0.467

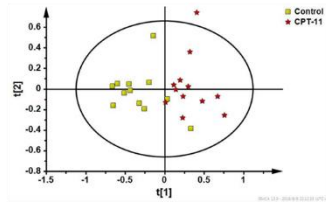
OPLS-DA



R^2X:0.738 R^2Y:0.991 Q^2:0.949

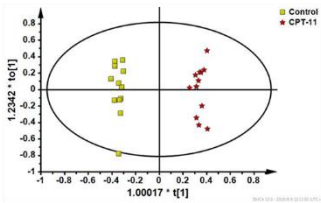
LC-MS(+)

PCA



R^2X:0.691 Q^2 :0.457

OPLS-DA



R^2X:0.719 R^2Y:0.989 Q^2 :0.911

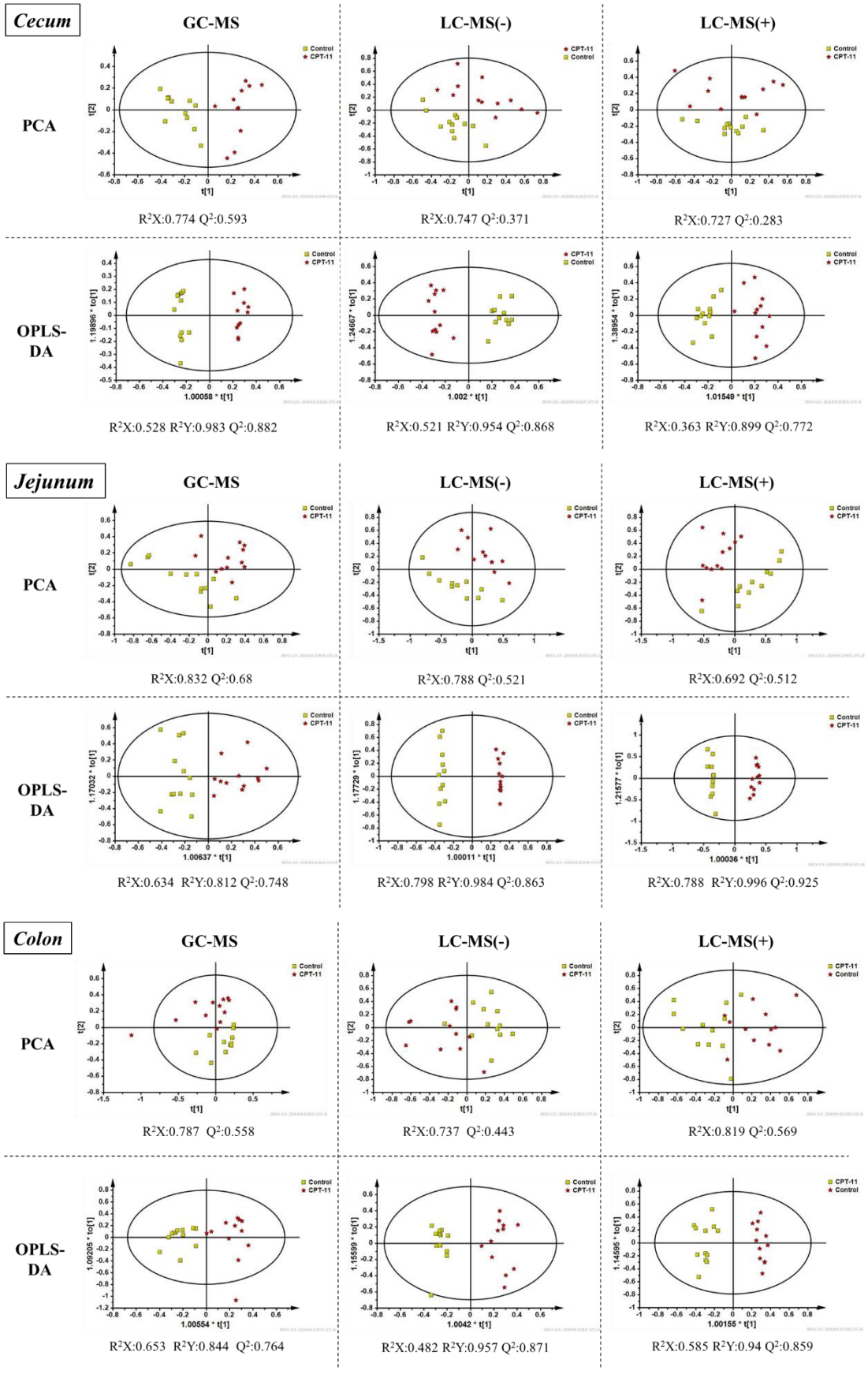


Figure S1 PCA and OPLS-DA score plots of different tissues between control group and CPT-11 treated group.

Table S1 Change trends of differential metabolites in different tissues in CPT-11 treated group.

Metabolites	Jejunum	Ileum	Cecum	Colon	Liver	Kidney	Spleen	Lung	Heart
Ethanolamine	-	-	-	↑*	↓*	-	↑*	-	-
Alanine#	↓*	↓*	-	-	-	↓*	↓*	-	↓*
Butanoic acid	-	-	↓*	-	↓*	-	↓*	-	-
Valine#	↓*	↓*	↓*	↓*	↓*	↓*	↑*	↓*	-
Urea#	-	↑*	-	↓*	↓*	↓*	-	↓*	-
Leucine#	↓*	↓*	↓*	↓*	↓*	↓*	↑*	↓*	-
Phosphoric acid	↑*	↑*	↑*	↑*	↓*	↑*	-	↓*	↑*
Isoleucine#	↓*	↓*	↓*	↓*	↓*	↓*	↑*	↑*	-
Proline#	↓*	↓*	↓*	↓*	↓*	↓*	-	↑*	-
Pyrimidine	-	↑*	↑*	-	-	-	-	-	-
Serine#	↓*	↓*	↓*	↓*	↓*	↓*	-	-	-
Threonine#	↓*	↓*	↓*	↓*	↓*	↓*	↓*	↓*	↓*
Succinic acid#	-	-	↓*	↑*	↑*	↓*	↓*	↑*	↓*
Methionine	-	↓*	-	↓*	↓*	↓*	-	-	-
Aspartic acid#	↑*	↑*	↑*	↑*	↓*	-	↑*	↑*	↓*
Creatinine#	↑*	-	-	-	↑*	↑*	-	-	-
Glutamic acid#	-	↑*	↑*	↑*	↓*	↓*	-	-	↓*
Phenylalanine#	↓*	↓*	↓*	-	↓*	-	↑*	↑*	-
Lysine#	-	↓*	-	-	↓*	-	-	↑*	-
4-hydroxy-proline	-	-	-	-	-	-	-	↓*	-
N-Acetylglutamine	-	-	↓*	-	-	-	-	-	-
Glutamine#	-	-	↓*	↓*	↓*	↓*	-	-	-
9H-Purine	-	↑*	↓*	↓*	↓*	-	-	↓*	-
Citric acid#	-	↓*	-	-	-	-	-	↓*	-
Glucose	-	↓*	-	↓*	↑*	↑*	-	↓*	↑*
Histidine	-	↓*	↓*	-	↓*	-	↑*	↑*	-
Tyrosine#	↓*	↓*	↓*	↓*	↓*	↓*	-	↓*	-
Myo-Inositol	-	-	↓*	↓*	-	-	↓*	-	-
Palmitic acid	↓*	↑*	-	-	-	-	-	↓*	↓*
Uric acid	↓*	-	-	-	-	-	-	↓*	-
Linoleic acid#	↓*	-	-	-	↓*	-	-	-	-
Oleic acid#	↓*	-	-	-	-	-	-	-	-
Arachidonic acid	↓*	-	-	↑*	↓*	-	-	-	-
Tryptophan#	-	↓*	-	-	-	-	-	-	-
Cholesterol#	↑*	↑*	↑*	↓*	↓*	↓*	↑*	-	↑*
Ascorbic acid	-	↑*	-	-	-	-	↓*	-	-
TCA#	↓*	↓*	-	↓*	-	-	-	-	-
GCA#	↓*	↓*	-	↓*	-	-	-	-	-
TDCA#	↑*	↑*	↑*	-	↑*	-	-	-	-
CA#	↑*	↓*	-	-	-	-	-	-	-
DCA#	↑*	↑*	↑*	↑*	↑*	-	-	-	-
Muricholic acid	-	-	-	-	-	-	-	-	-

Metabolites	Jejunum	Ileum	Cecum	Colon	Liver	Kidney	Spleen	Lung	Heart
Murocholic acid	-	↓*	↓*	-	-	-	-	-	-
GCDCA#	↑*	-	-	-	-	-	-	-	-
LysoPC(14:0)	-	-	-	-	-	-	-	-	-
LysoPC(15:0)	-	-	-	-	↑*	-	-	↓*	-
LysoPC(16:1)	-	-	-	-	↓*	-	-	-	-
LysoPC(18:0)	↑*	↑*	-	-	-	-	-	-	↑*
LysoPC(18:1)	↑*	-	↑*	↑*	↑*	-	-	-	-
LysoPC(20:1)	-	-	-	-	-	-	-	-	-
LysoPC(20:2)	-	-	-	-	-	-	↑*	-	-
LysoPC(20:4)	-	-	-	-	-	-	-	-	-
LysoPC(P-18:0)	↓*	-	↓*	-	-	↓*	-	-	-
LysoPE(16:0)	-	↓*	↑*	↑*	-	-	-	-	-
LysoPE(16:1)	-	-	-	↑*	-	-	-	↓*	↑*
LysoPE(18:0)	-	-	↑*	↑*	-	-	-	-	-
LysoPE(18:1)	-	↓*	-	↑*	↓*	-	-	-	-
LysoPE(18:2)	↑*	↑*	↑*	↑*	↓*	↓*	↑*	-	-
LysoPE(20:4)	-	↑*	-	-	-	-	-	-	-
LysoPE(22:4)	-	↑*	-	-	-	-	-	-	-
PE(P-16:0e)	↓*	↑*	-	-	-	-	-	-	-

The levels of potential biomarkers labeled with (↓) were down-regulated and (↑) up-regulated in CPT-11 treated rats.

* Mann Whitney U test, $p < 0.05$, in comparison with control group.

These metabolites were identified by comparing with commercial standards.

Abbreviations: LysoPC, lyso-phosphatidylcholine; LysoPE, lyso-phosphatidylethanolamines; PE, phosphatidylethanolamines; CA: cholic acid; DCA: deoxycholic acid; TCA: taurocholic acid; TDCA: taurodeoxycholic acid; GCA: glycocholic acid; GCDCA: glycochenodeoxycholic acid.