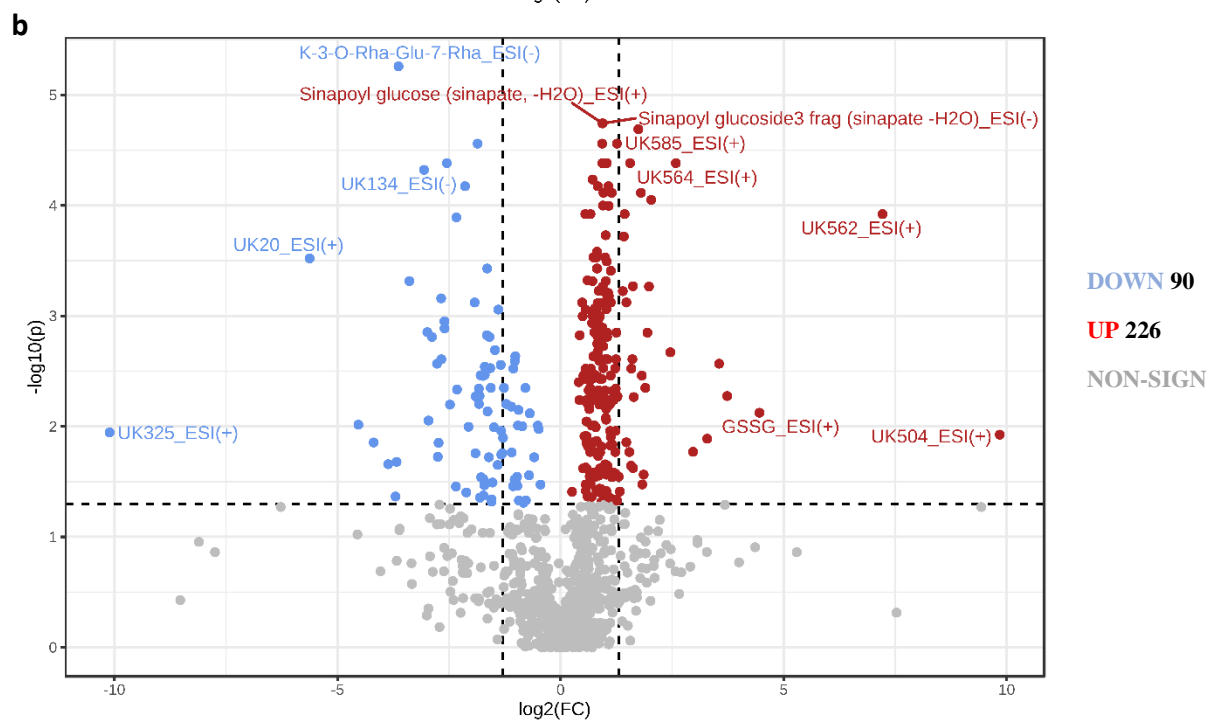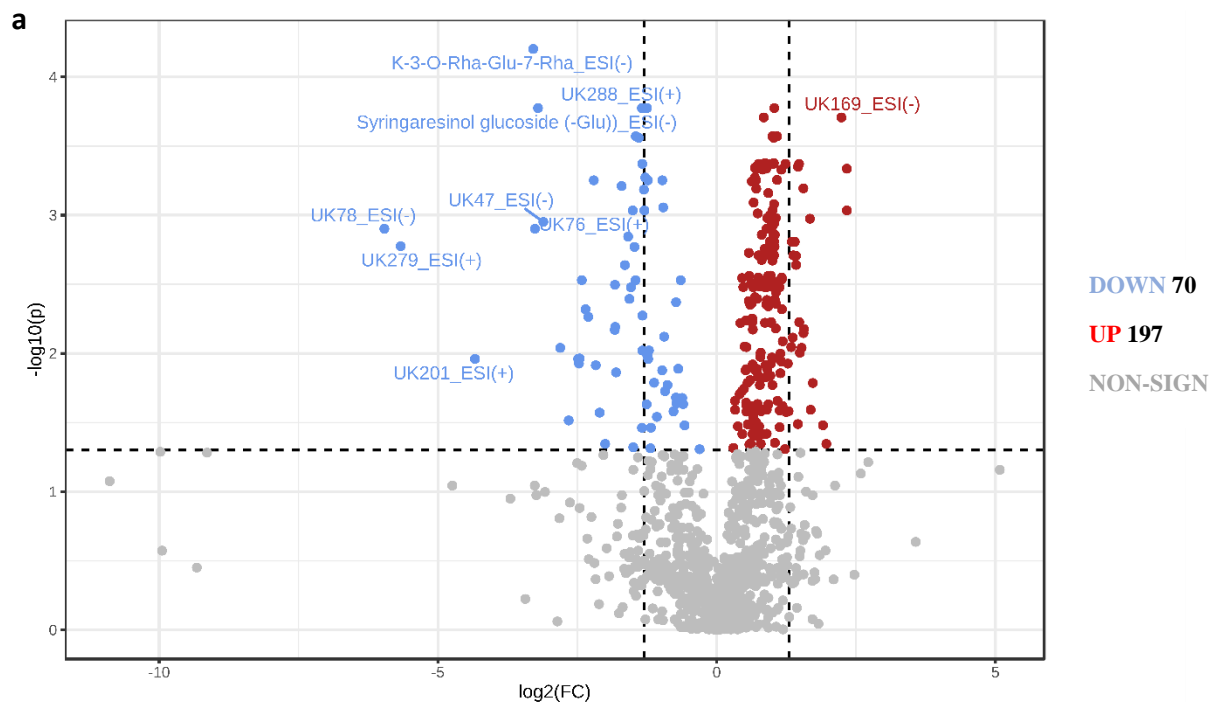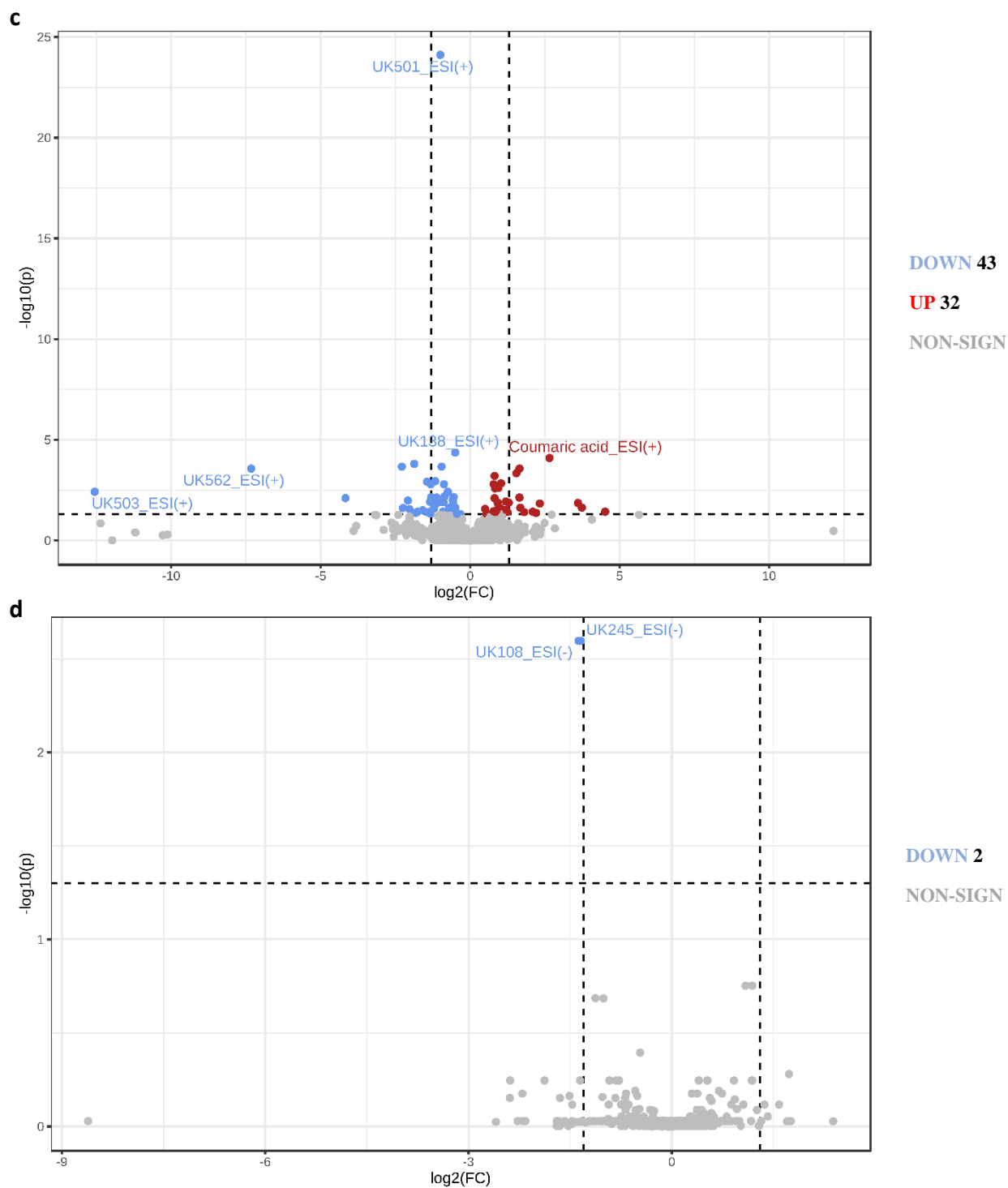**Supplementary Figure S1.** Metabolite profiles in Arabidopsis as affected by line and light and methyl viologen treatments. Metabolites were analysed by LC-MS with positive and negative ESI and the variation in metabolite profiles (1146 features) were studied with principal component analysis (PCA, **a-c**). In addition, the variation in lipophilic metabolite profile (16 metabolites analysed with LC-MS using positive ESI and PDA) was studied (**d**). L=Light, MV=methyl viologen/paraquat.

a

K-3-O-Rha-Glu-7-Rha_ESI(-)
UK288_ESI(+)
Syringaresinol glucoside (-Glu))_ESI(-)
UK169_ESI(-)
UK78_ESI(-)
UK47_ESI(-)
UK76_ESI(+)
UK279_ESI(+)
UK201_ESI(+)

DOWN **70**
UP **197**
NON-SIGN

b

K-3-O-Rha-Glu-7-Rha_ESI(-)
Sinapoyl glucose (sinapate, -H2O)_ESI(+)
Sinapoyl glucoside3 frag (sinapate -H2O)_ESI(-)
UK585_ESI(+)
UK134_ESI(-)
UK564_ESI(+)
UK20_ESI(+)
UK562_ESI(+)
UK325_ESI(+)
GSSG_ESI(+)
UK504_ESI(+)

DOWN **90**
UP **226**
NON-SIGN

Supplementary Figure S2. Comparison of LC-MS metabolite levels between lines (a-b) and between treatments within each line (c-d). **a)** *rcd1*/Col-0 in light, **b**), *rcd1*/Col-0 in MV, **c)** MV/L in Col-0, and **d)** MV/L in *rcd1*.