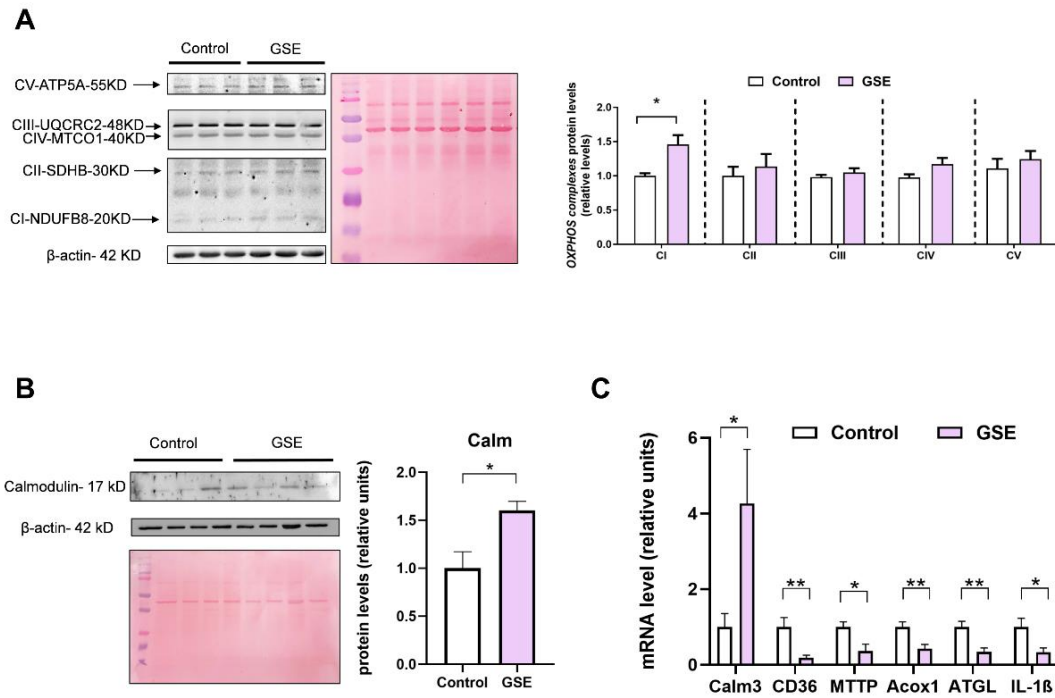


**Supplemental Figure 1. Heatmap of differentially expressed proteins comparing Control with GSE treatment.** A complete heatmap illustrating the effect of GSE supplementation on the 237 significantly dysregulated proteins (p-value < 0.05) in ileum samples with the magnitude of change indicated by the color scale on the right. Control samples are indicated on purple and GSE treated samples in green in the right line of the heatmap.

**Supplemental Table 1.** The most differentially overrepresented and underrepresented proteins ( $\log_2FC < -2$ ) represented in the figure 2.

<b>Up-regulated proteins</b>	
<b>Protein name</b>	<b>Protein identified (Uniprot accession number)</b>
ATP-binding cassette subfamily A member 13	D4A885
60S ribosomal protein L28	Q642E2
Heat shock protein beta-6	P97541
DNA-(apurinic or apyrimidinic site) endonuclease	P43138
Collagen alpha-2(I) chain	F1LS40
Apolipoprotein E	A0A0G2K151
Cytochrome c oxidase subunit 6C-2	P11951
Histone H2B	D3ZLY9
Cytochrome b-c1 complex subunit 7	B2RYS2
Calmodulin-3	P0DP31
Tropomyosin alpha-4 chain	P09495
Cytochrome c-1	D3ZFAQ8
CDGSH iron-sulfur domain-containing protein 1	B0K020
<b>Down-regulated proteins</b>	
<b>Protein name</b>	<b>Protein identified (Uniprot accession number)</b>
RNA helicase	D3ZD97
6-phosphogluconolactonase	G3V8D5
Adenine phosphoribosyltransferase	P36972
40S ribosomal protein S19	D4A6G6
AP-2 complex subunit beta	P62944
TAP-binding protein	Q99JC6
Activator of Hsp90 ATPase activity 1	B0BN63
Aflatoxin B1 aldehyde reductase member 3	P38918
Protein transport protein SEC23	B5DFC3
60S acidic ribosomal protein P1	P19944
Lambda-crystallin homolog	Q811X6
40S ribosomal protein S5	B0BN81
Isocitrate dehydrogenase [NAD] subunit	Q5XIJ3
N-acetylneuraminase synthase	B1WC26
Pyridoxal kinase	G3V647
Transmembrane emp24 domain-containing protein 10	Q63584
Calcium-activated neutral proteinase 1	F1LS29
Ras-related protein Rab-1A	Q6NYB7
Ribosomal protein S10-like 1	F1LT36
Proteasome subunit alpha type-2	P17220

Clathrin-assembly lymphoid myeloid leukemia protein	Q66WT9
Sorbin and SH3 domain-containing protein 2	F1LPM3
Protein NDRG1	Q6JE36
Fructose-1,6-bisphosphatase isozyme 2	Q9Z1N1



**Supplemental Figure 2. Proteomic Data Validation.** A. Effect of GSE on the protein level of OXPHOS subunits (Complex I-V) in ileal samples from Control (n=3) and GSE-supplemented rats (n=3). B. Effect of GSE on the protein level of Calm, in ileal samples from Control (n=6) and GSE-supplemented rats (n=6). Data from WB analysis represent means  $\pm$  SEM of 2 separate experiments. Student's t test. \*P < 0.05, \*\*P < 0.01. C. Effect of GSE on the mRNA level of Calm3, CD36, MTPP, ATGL, Acox1 and IL-1 $\beta$  in ileal samples from Control (n=6) and GSE-supplemented rats (n=6). Data represent means  $\pm$  SEM. Student's t test. \*P < 0.05, \*\*P < 0.01.