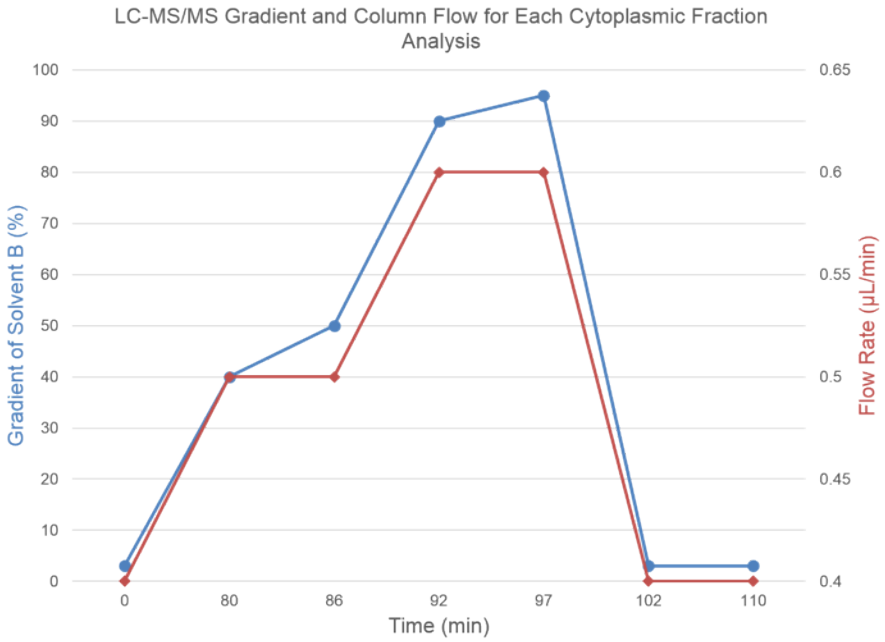
Electronic Supplementary Material (ESI) for Metallomics.

Table S1: Protein concentration as determined by Qubit™ Assay.

Growth Condition	Sample	Cytoplasmic Protein Concentration (mg/mL)	Membrane Protein Concentration (mg/mL)
Lactate Growth Replicates	1	2.57	18.5
	2	1.85	14.2
	3	2.76	11.7
Roxarsone and Lactate Growth Replicates	1	3.89	15.6
	2	2.91	18.2
	3	2.74	15.9
3A4HBAA and Lactate Growth Replicates	1	1.49	9.26
	2	1.83	10.6
	3	1.80	10.5
Arsenate and Lactate Growth Replicates	1	1.62	9.73
	2	1.88	9.27
	3	2.65	13.4

A)



B)

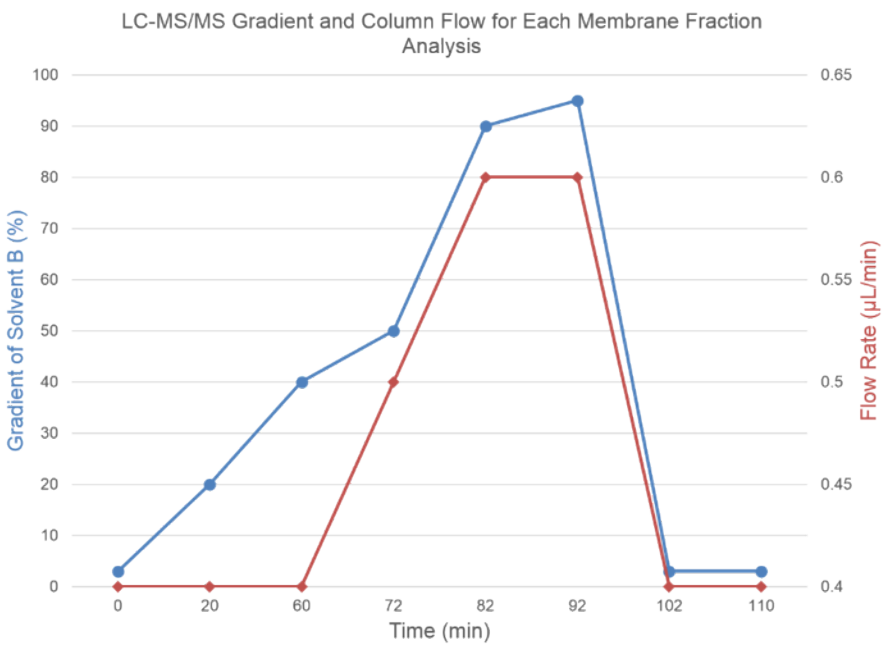


Figure S1: Gradients and flow rates for LC-MS/MS analysis used for cytoplasmic (A) and membrane (B) fractions.

Table S2: Protein and peptide autovalidation parameters used for Spectrum Mills proteomic workbench. A) Protein autovalidation parameters, B) Peptide autovalidation parameters.

A)

Protein Autovalidation Parameters			
Rule	Precursor Charge	Threshold Score	Score Based on Percent Intensity (SPI%)
1	+2	5	60
2	+1	6	60
3	+3	5	50
4	+4	7	60
5	+5	11	60
6	+2	4	80

B)

Peptide Autovalidation Parameters			
Rule	Precursor Charge	Threshold Score	Score Based on Percent Intensity (SPI%)
1	+2	11	60
2	+1	13	70
3	+3	13	70
4	+4	13	70
5	+5	13	70

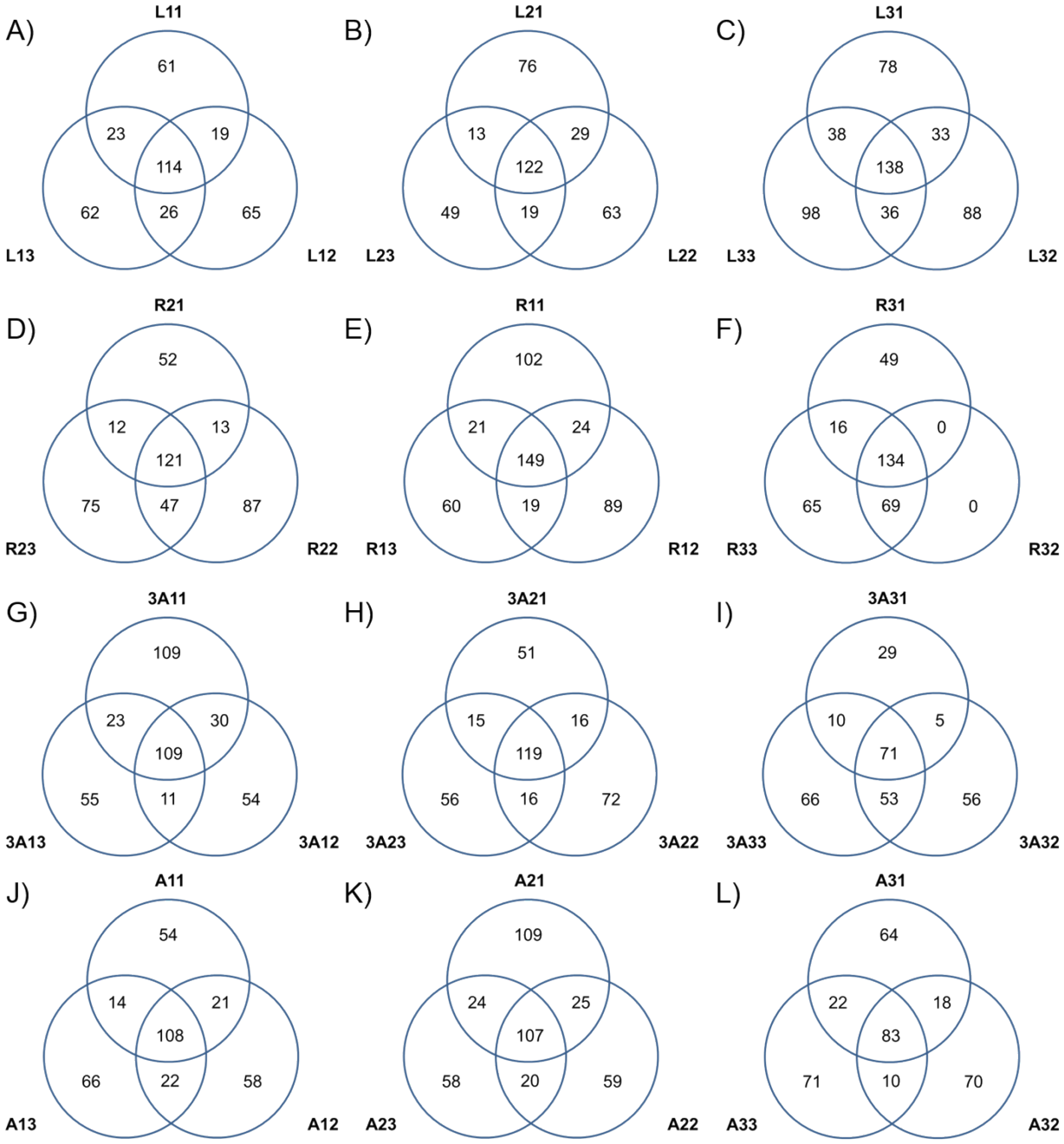


Figure S2: Protein reproducibility in cytoplasmic technical replicates. First letter in each Venn diagram represents growth condition i.e. L, R, 3A, and A; first number indicates biological culture replicate; and final number represents technical replicate. A-C) sodium lactate grown cytoplasmic fractions, D-F) roxarsone with sodium lactate grown cytoplasmic fractions, G-I) 3A4HBAA with sodium lactate grown cytoplasmic fractions, J-L) arsenate with sodium lactate grown cytoplasmic fractions.

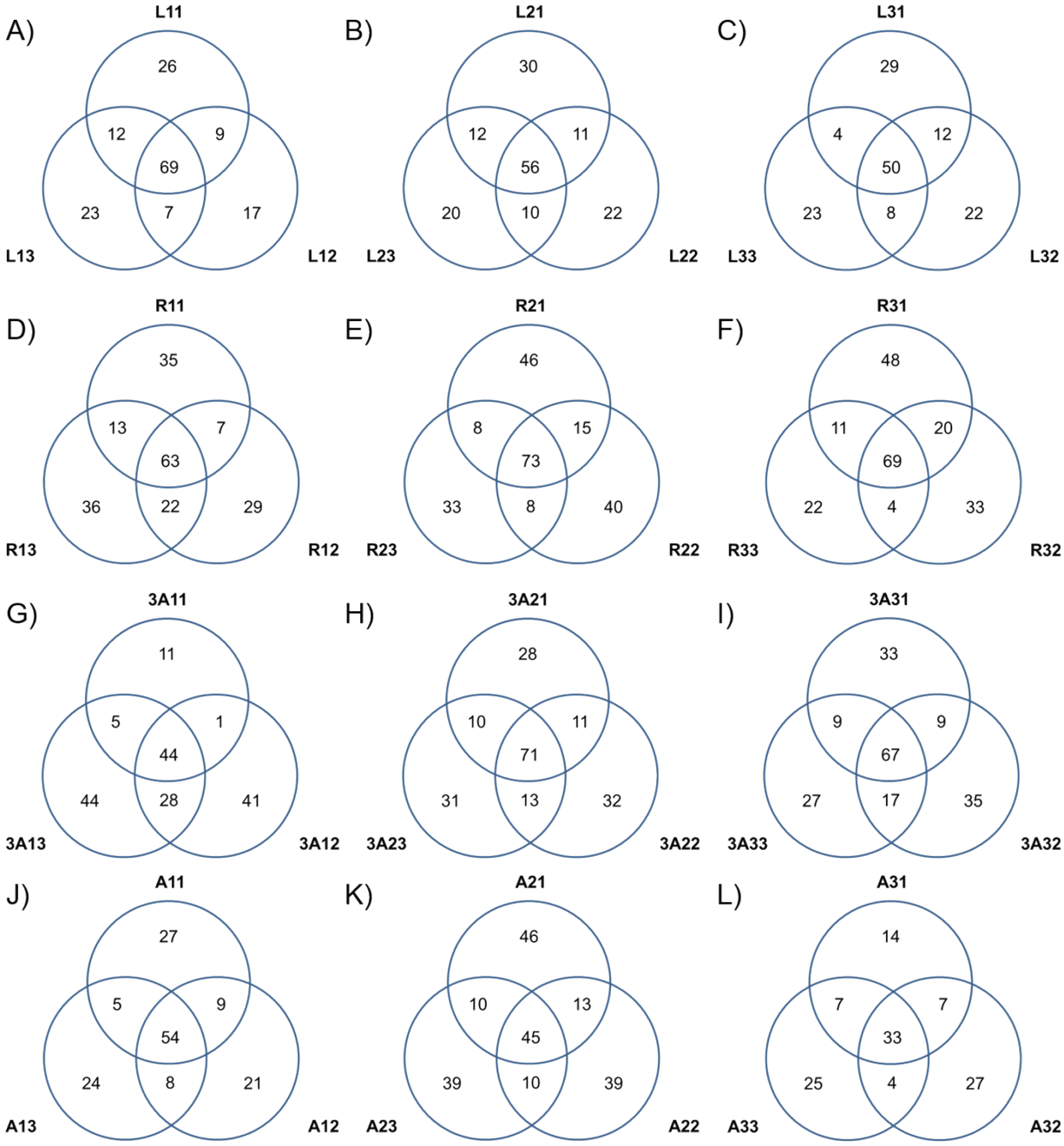


Figure S3: Protein reproducibility in membrane technical replicates. First letter in each Venn diagram represents growth condition i.e. L, R, 3A, and A; first number indicates biological culture replicate; and final number represents technical replicate. A-C) Sodium lactate grown membrane fractions, D-F) roxarsone with sodium lactate grown membrane fractions, G-I) 3A4HBAA with sodium lactate grown membrane fractions, J-L) arsenate with sodium lactate grown membrane fractions.

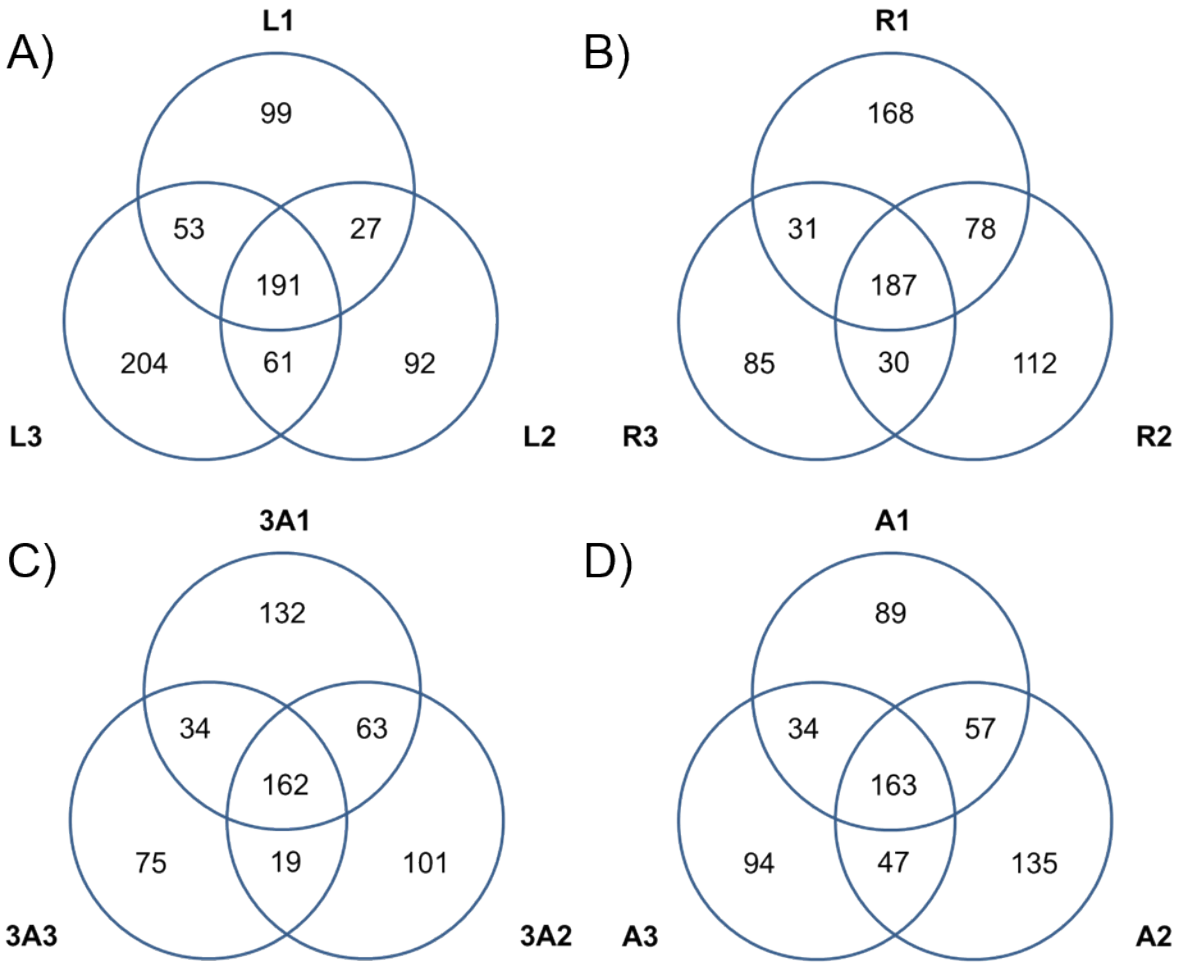


Figure S4: Protein reproducibility in cytoplasmic biological replicates. First letter in each Venn diagram represents growth condition i.e. L, R, 3A, and A; and first number indicates biological culture replicate. A) Sodium lactate grown cytoplasmic fractions, B) roxarsone with sodium lactate grown cytoplasmic fractions, C) 3A4HBAA with sodium lactate grown cytoplasmic fractions, D) arsenate with sodium lactate grown cytoplasmic fractions.

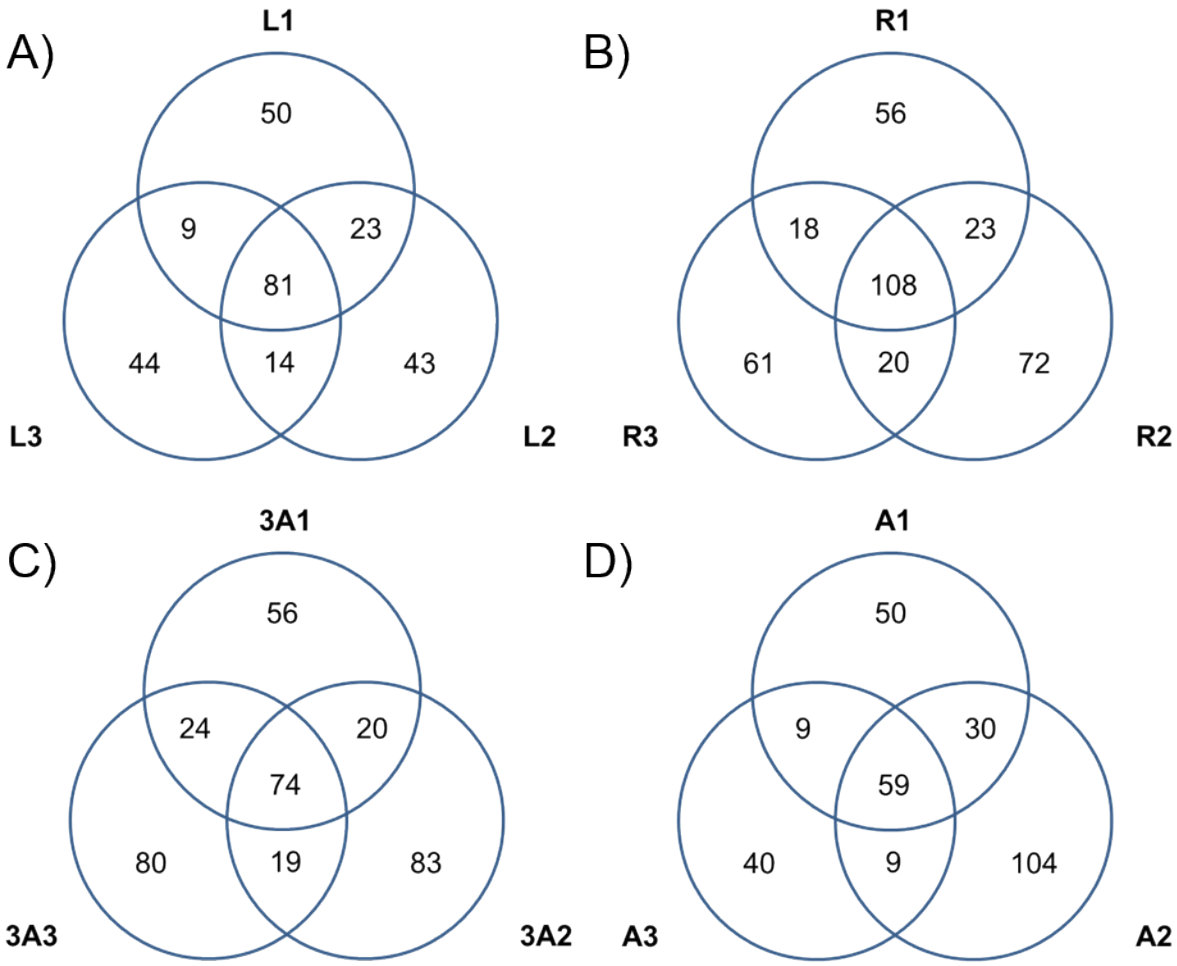


Figure S5: Protein reproducibility in membrane biological replicates. First letter in each Venn diagram represents growth condition i.e. L, R, 3A, and A; and first number indicates biological culture replicate. A) Sodium lactate grown membrane fractions, B) roxarsone with sodium lactate grown membrane fractions, C) 3A4HBAA with sodium lactate grown membrane fractions, D) arsenate with sodium lactate grown membrane fractions.

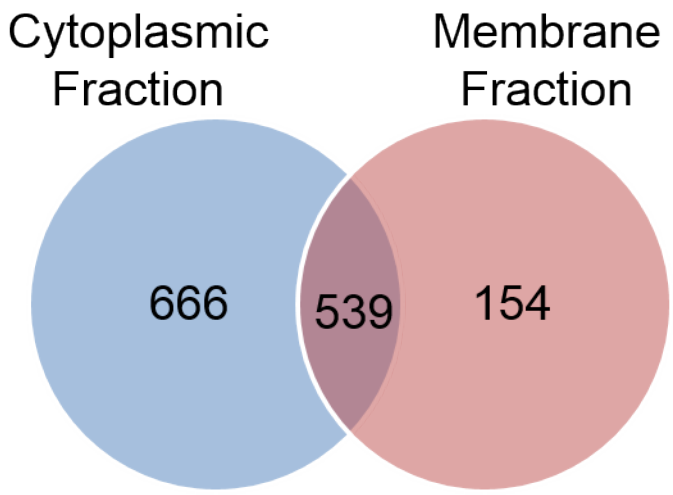


Figure S6: The comparison of proteins identified between cytoplasmic and membrane fractions.

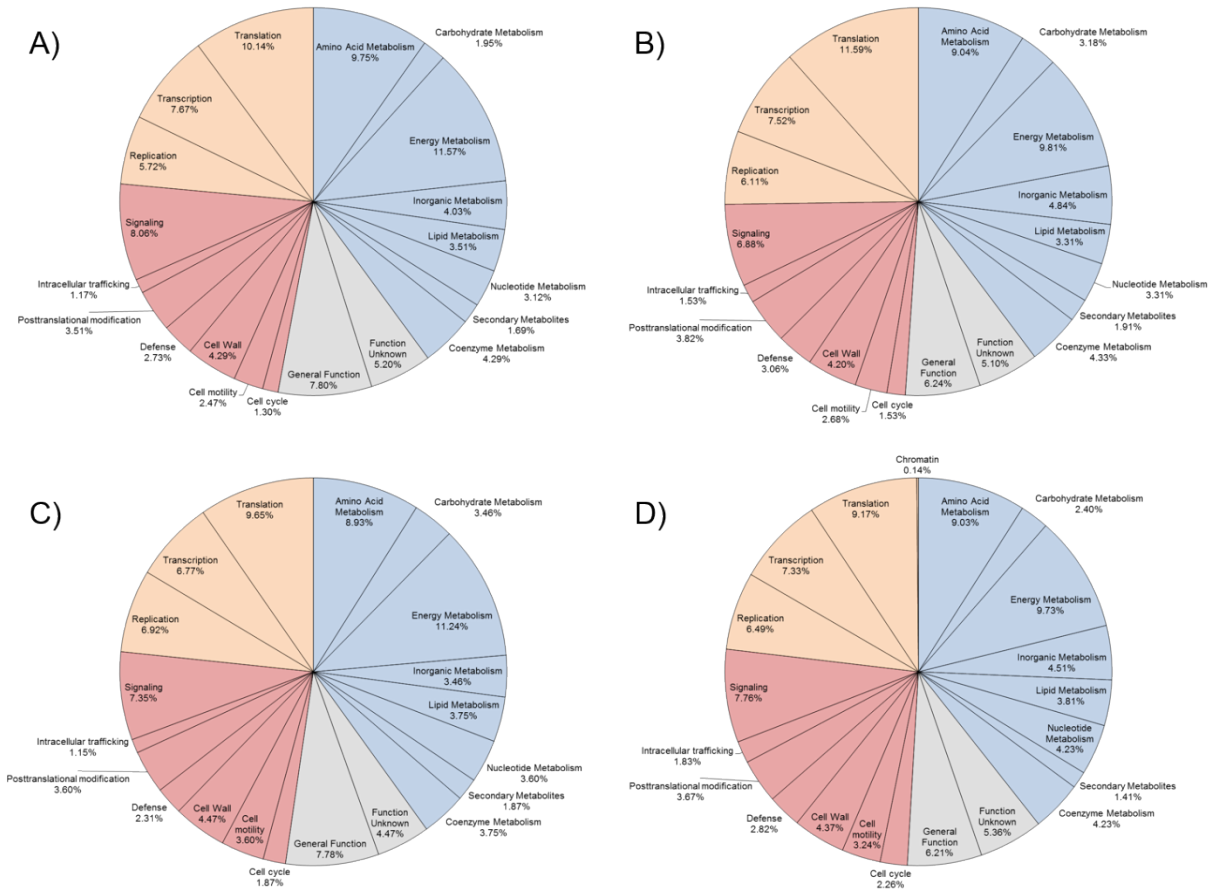


Figure S7: On/off protein comparison of all four growth conditions divided into their COG superclasses and subclasses. A) Sodium lactate grown cells, B) roxarsone and sodium lactate grown cells, C) 3A4HBAA and sodium lactate grown cells, D) arsenate and sodium lactate grown cells. Each pie chart is color coordinated to the superclasses of COG functions: metabolism (blue), poorly defined (grey), cellular processing and information (red), and information storage (orange).