

**A network analysis of cofactor-protein interactions for analyzing associations  
between human nutrition and diseases**

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## **Supplementary Information (SI)**

**Table S1. Cofactor-protein interactions and genetic variants in cofactor-binding sites.** List of cofactor-protein interactions from all mined databases and genetic variants in cofactor-binding sites from the Uniprot database.

**Table S2a. Gene ontology annotation results for each module detected in the cofactor-interacting proteins network.**

**Table S2b. Biological pathway enrichment results for each module detected in the cofactor-interacting proteins network.**

**Table S3. Tissue expression of cofactor-interacting proteins.**

**Table S4. Cofactor-disease interactions.** OMIM and GWAS diseases associated with genes encoding for cofactor-interacting proteins.

**Figure S1. Cofactor classification.**

**Figure S2. Overlap of cofactor-interacting proteins between the four different databases.**

**Figure S3. Per cofactor representation of the degree of connectivity of cofactors-interacting proteins.**

# Cofactors

## Inorganic

Copper (Cu)  
Iron (Fe)  
Magnesium (Mg)  
Manganese (Mn)  
Molybdenum (Mo)  
Nickel (Ni)  
Zinc (Zn)  
Cobalt (Co)  
Potassium (K)  
Calcium (Ca)  
Chloride (Cl)  
Selenium (Se)  
Phosphate

## Metal complex

Fe-S complex

## Organic

### Vitamin

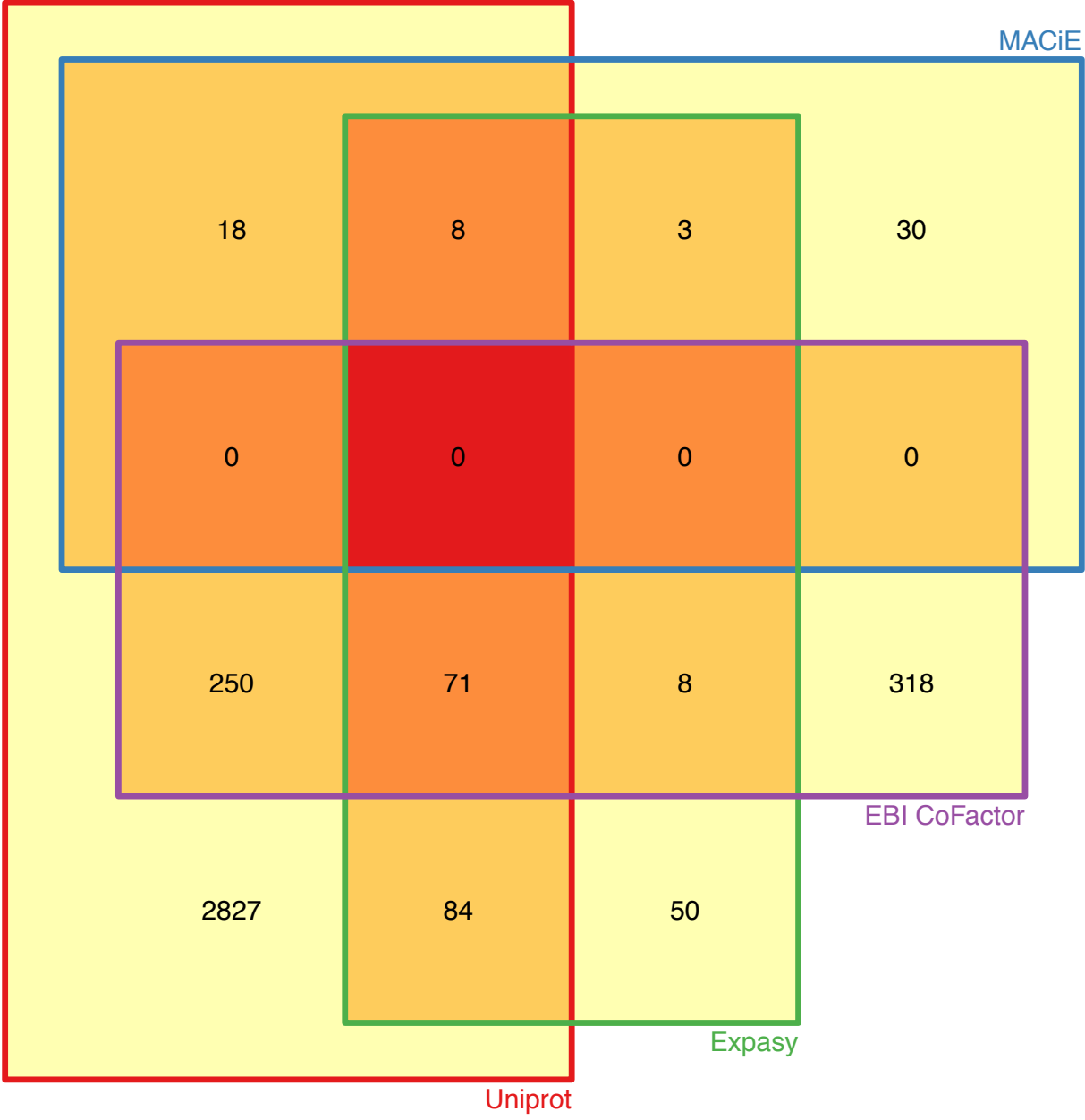
Thiamine pyrophosphate [Thiamine (B1)]  
Flavin adenine mono/dinucleotide (FMN/FAD)[Riboflavin (B2)]  
NAD<sup>+</sup> and NADP<sup>+</sup> [Niacin (B3)]  
Coenzyme A/Phosphopantetheine [ B5]  
Pyridoxal phosphate [Pyridoxine (B6)]  
Biotin (B7)  
Tetrahydrofolic acid [Folic acid (B9)]  
Methylcobalamin/AdenosylCobalamine (B12)  
Ascorbic acid (C)  
Menaquinone (K)

### Transcription factor ligands

Retinol(A): RXR-RAR  
D3:VDR  
E: PXR

### Non-vitamin

In box non-vitamin box  
Biopterin  
Glutathione (GSH)  
Heme  
Heme-thiolate  
Lipoic Acid (LA)  
Molybdopterin (MPT)  
Orthoquinone  
Pyrroloquinoline quinone (PQQ)  
S-Adenosyl methionine (SAM)  
S-Adenosyl-L-homocysteine (SAH)  
Tetrahydrobiopterin (BH4)  
Topoquinone  
Ubiquinone (CoQ)



## Degree distribution of cofactors

