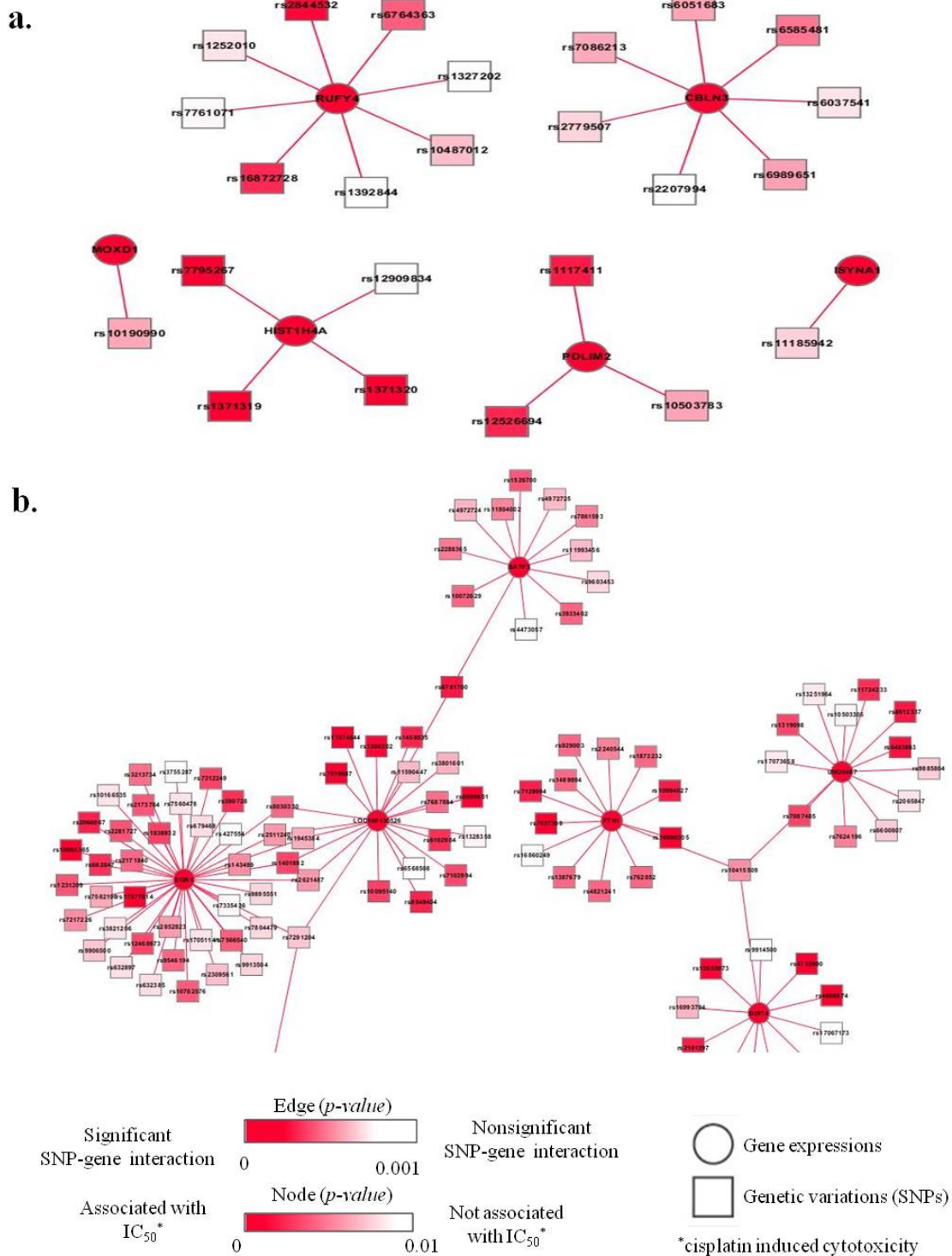


**Supplemental Figure 1.** Results of functional enrichment test using GO terms (category of Biological Process).



**Supplemental Figure 2.** Underlying network of selected loci for cisplatin induced cytotoxicity ( $p$ -value  $< 0.0001$ )

Identified interaction examples between the genetic variations and gene expressions, which derives phenotypic variations, cytotoxicity ( $IC_{50}$ ). **a.** Examples in CEU population. **b.** Examples in YRI population.

**Supplemental Table 1.** Example of prioritized SNPs and perturbed gene expressions

| Population | Causal SNPs<br>( <i>p-value</i> ) | Perturbed gene expressions<br>( <i>p-values</i> of interactions <0.01) | <i>fpp-value</i> | Biological relevance<br>(PMID: PubMed ID)   |
|------------|-----------------------------------|--|------------------|---|
| CEU        | rs7795267<br>(0.00003)            | HIST1H4A (histone cluster1 H 4)  | 0.0              | Cisplatin induces Sirt1 in association with histone deacetylation (PMID: 21416250)                          |
|            | rs2029414<br>(0.0014)             | HIST1H4A (histone cluster1 H 4)  | 0.0001           | Cisplatin induces Sirt1 in association with histone deacetylation (PMID: 21416250)                          |
|            | rs2754078<br>(0.0009)             | FDXR   | 0.0002           | FDXR is a mediator of reactive oxygen species generation and related to cisplatin response (PMID: 15940259) |
| YRI        | rs2208788<br>(0.0046)             | EGR3 (early growth response 3)   | 0.0001           | Tumor suppressor related with anticancer drug responses (PMID: 16908595)                                    |
|            | rs1145299<br>(0.0015)             | TKT (Transketolase)  | 0.0001           | Cell proliferation in cancer development (PMID: 19331662)   |
|            | rs7359707<br>(0.0028)             | VEGFA  | 0.0001           | Cell growth and survival of cancer patient underwent cisplatin treatment (PMID: 19240722)                   |