Supplementary Figure 1. The circular visualization of the expression patterns of the top 93 DEGs and their chromosomal positions. The heatmap shows the top 20 up-regulated genes and top 20 down-regulated genes according to their P value. The columns represent each of the five GEO datasets. Each row represents a single gene. Red and blue indicate up-regulation and down-regulation, respectively. The numbers in the heatmap indicate log (fold change) values in each dataset as calculated by the limma R package.
**Supplementary Figure 2. Validation of the hub genes in the TCGA-LUSC dataset.** (A) The histogram plots show the mRNA expression of LAPTM5, CSF1R, SLC20A1 and C1QC in the high, medium and low immunity LUSC subgroups. (B) The histogram plot shows the mRNA expression levels of LAPTM5, CSF1R, SLC20A1 and C1QC in the LUSC samples with different tumor purity levels. (C) The expression levels of LAPTM5, CSF1R, SLC20A1 and C1QC mRNA in the LUSC cell lines (n=23) and lymphocytic cell lines (n=167).
Supplementary Figure 3. (A) The histogram plots show the expression levels of TOX in the high, medium and low immunity LUSC subgroups (ANOVA test, p<0.001). (B) Comparison of the proportions of cluster 2 samples in the high, medium and low immunity LUSC subgroups (Chi-square test, p<0.001). Note: Immunity-High denotes high immunity group; Immunity-Middle denotes medium immunity group; Immunity-Low denotes low immunity group.
Supplementary Figure 4. (A) The heat map shows the proportions of 22 immune cell types in the TCGA-LUSC tumor samples as calculated with the CIBERSORT algorithm, and their correlation with the expression levels of the four hub genes, namely, LAPTM5, CSF1R, SLC02B1 and C1QC in the TCGA-LUSC dataset. (B) The correlation analysis between the proportions of follicular helper T cells, M0 macrophages and monocytes in the LUSC tissues and the overall survival time of the TCGA-LUSC patients. The red and blue lines indicate the LUSC samples with high or low proportions of follicular helper T cells, M0 macrophages, and monocytes.