Supplementary Table4: The 51 enriched pathways were selected.

Term	ES	NES	NP	FDR	FWER
HALLMARK_OXIDATIVE_PHOSPHORYLATION	-0.3389	-1.4469	0.2124	0.3892	0.598
HALLMARK_DNA_REPAIR	-0.2315	-1.0491	0.4291	0.8376	0.898
HALLMARK_BILE_ACID_METABOLISM	-0.2533	-0.9658	0.5131	0.7012	0.925
HALLMARK_PANCREAS_BETA_CELLS	-0.2902	-0.8699	0.6474	0.6589	0.948
HALLMARK_MYC_TARGETS_V1	-0.1708	-0.7436	0.6306	0.6934	0.979
HALLMARK_INTERFERON_ALPHA_RESPONSE	0.216	0.5286	0.8232	0.9267	0.991
HALLMARK_PEROXISOME	0.1696	0.7234	0.8548	0.7434	0.982
HALLMARK_MYC_TARGETS_V2	0.2043	0.7396	0.6841	0.7383	0.982
HALLMARK_SPERMATOGENESIS	0.2155	0.7941	0.7841	0.6749	0.972
HALLMARK_KRAS_SIGNALING_DN	0.2107	0.8093	0.8649	0.6683	0.97
HALLMARK_FATTY_ACID_METABOLISM	0.1854	0.8127	0.7095	0.6806	0.97
HALLMARK_INTERFERON_GAMMA_RESPONSE	0.3101	0.8412	0.626	0.656	0.963
HALLMARK_ALLOGRAFT_REJECTION	0.3004	0.8512	0.5835	0.657	0.963
HALLMARK_XENOBIOTIC_METABOLISM	0.2029	0.858	0.6787	0.6647	0.961
HALLMARK_E2F_TARGETS	0.2937	0.8751	0.5665	0.6555	0.956
HALLMARK_WNT_BETA_CATENIN_SIGNALING	0.3067	0.9251	0.5706	0.5993	0.946
HALLMARK_HEME_METABOLISM	0.2345	0.9765	0.4821	0.5414	0.928
HALLMARK_ESTROGEN_RESPONSE_LATE	0.2536	1.0148	0.4105	0.5056	0.917
HALLMARK_ESTROGEN_RESPONSE_EARLY	0.2898	1.0513	0.4037	0.4695	0.895
HALLMARK_ADIPOGENESIS	0.2446	1.0921	0.3486	0.4281	0.872
HALLMARK_COMPLEMENT	0.3165	1.102	0.3473	0.4294	0.869
HALLMARK_REACTIVE_OXYGEN_SPECIES_PATHWAY	0.2996	1.1359	0.3258	0.4017	0.855
HALLMARK_UV_RESPONSE_UP	0.2697	1.2032	0.2271	0.3322	0.816
HALLMARK_IL6_JAK_STAT3_SIGNALING	0.4216	1.2063	0.2846	0.3411	0.813
HALLMARK_P53_PATHWAY	0.3032	1.2238	0.2233	0.334	0.804
HALLMARK_MTORC1_SIGNALING	0.301	1.2539	0.2349	0.3116	0.78
HALLMARK_COAGULATION	0.3583	1.2662	0.1887	0.3113	0.772

HALLMARK_APOPTOSIS	0.3326	1.2723	0.2087	0.316	0.77
HALLMARK_G2M_CHECKPOINT	0.4414	1.3726	0.1968	0.219	0.685
HALLMARK_PROTEIN_SECRETION	0.3695	1.4102	0.149	0.1959	0.65
HALLMARK_MYOGENESIS	0.4	1.4326	0.0627	0.1857	0.626
HALLMARK_INFLAMMATORY_RESPONSE	0.4999	1.4402	0.1388	0.1879	0.616
HALLMARK_IL2_STAT5_SIGNALING	0.4215	1.4527	0.1006	0.1872	0.596
HALLMARK_GLYCOLYSIS	0.3471	1.4626	0.0792	0.1891	0.579
HALLMARK_NOTCH_SIGNALING	0.4966	1.4818	0.0787	0.1816	0.547
HALLMARK_KRAS_SIGNALING_UP	0.4513	1.482	0.0752	0.1935	0.547
HALLMARK_PI3K_AKT_MTOR_SIGNALING	0.3513	1.4966	0.0634	0.1911	0.516
HALLMARK_HEDGEHOG_SIGNALING	0.5198	1.5337	0.0291	0.1738	0.465
HALLMARK_UNFOLDED_PROTEIN_RESPONSE	0.3586	1.5351	0.0671	0.1851	0.46
HALLMARK_ANGIOGENESIS	0.5607	1.5406	0.0623	0.1951	0.454
HALLMARK_APICAL_SURFACE	0.4907	1.5762	0.0183	0.1741	0.398
HALLMARK_TGF_BETA_SIGNALING	0.5052	1.5853	0.0272	0.1814	0.381
HALLMARK_TNFA_SIGNALING_VIA_NFKB	0.5399	1.5875	0.0888	0.2024	0.378
HALLMARK_CHOLESTEROL_HOMEOSTASIS	0.451	1.6157	0.0241	0.1989	0.35
HALLMARK_APICAL_JUNCTION	0.4668	1.6983	0.0077	0.1338	0.235
HALLMARK_ANDROGEN_RESPONSE	0.4584	1.7282	0.0142	0.1385	0.206
HALLMARK_UV_RESPONSE_DN	0.552	1.7363	0.002	0.1617	0.2
HALLMARK_MITOTIC_SPINDLE	0.534	1.7388	0.0061	0.2127	0.198
HALLMARK_EPITHELIAL_MESENCHYMAL_TRANSITION	0.7063	1.9013	0.0079	0.0926	0.074
HALLMARK_HYPOXIA	0.5238	1.903	0	0.1852	0.074