countH\_Pseudo\_Perm: The Hotelling's T^2 with pseudo inverse of correlation matrix and permutation p-value.

countG: The global test.

countG\_Perm: The global test with permutation p-value.

countGlobalAncova: The global ANCOVA test with permutation p-value.

countN\_Perm: The energy test(N-statistic) with permutation p-value.

countGSEA\_Category: The GSEA-like test(in Category package) with permutation p-value.

Multivariate t-distribution	countH_Pseudo_Perm	countG	countG_Perm	countGlobalAncova	countN_Perm	countGSEA_Category_
composition:1, rho:0.9, df:3, probes:30, size:70, difference:0.1	0.091	0.087	0.086	0.084	0.109	0.088
composition:1, rho:0.9, df:3, probes:30, size:70, difference:0.3	0.215	0.311	0.317	0.303	0.42	0.325
composition:1, rho:0.9, df:3, probes:30, size:70, difference:0.5	0.467	0.663	0.658	0.651	0.826	0.668
composition:1, rho:0.9, df:3, probes:30, size:70, difference:0.7	0.752	0.873	0.882	0.865	0.983	0.878
composition:1, rho:0.9, df:3, probes:30, size:70, difference:0.9	0.918	0.958	0.962	0.959	1	0.967
composition:1, rho:0.9, df:3, probes:30, size:70, difference:1	0.961	0.976	0.982	0.978	1	0.983
composition: 1, rho: 0.9, df: 3, probes: 30, size: 70, difference: 2	1	1	1	1	1	1