

For the column name --- rejected count rate

countM: Mardia's test

countH: Henze-Zirkler's test

countR: Royston's test

countN: N-statistic (energy test)

count2: Any 2 rejected tests

Seed times: 500

## Power study

### multivariate t distribution

	countM	countH	countR	countN	countHR	countHN	countRN	count2	countHRN
composition:1,rho:0.9,df:3,probes:25,size:50	1	0.92	0.864	1	0.802	0.92	0.864	0.982	0.802
composition:1,rho:0.9,df:3,probes:25,size:100	1	1	0.99	1	0.99	1	0.99	1	0.99
composition:1,rho:0.9,df:3,probes:49,size:50	0	0.048	0.862	0.166	0.038	0.022	0.144	0.172	0.016
composition:1,rho:0.9,df:3,probes:49,size:100	1	1	0.992	1	0.992	1	0.992	1	0.992
composition:1,rho:0.9,df:9,probes:25,size:50	0.984	0.156	0.268	0.976	0.038	0.154	0.266	0.382	0.038
composition:1,rho:0.9,df:9,probes:25,size:100	1	0.892	0.41	1	0.382	0.892	0.41	0.92	0.382
composition:1,rho:0.9,df:9,probes:49,size:50	0	0.044	0.298	0.1	0.014	0.014	0.042	0.062	0.004
composition:1,rho:0.9,df:9,probes:49,size:100	1	0.328	0.398	1	0.156	0.328	0.398	0.57	0.156
composition:1,rho:0.9,df:15,probes:25,size:50	0.862	0.068	0.164	0.818	0.014	0.062	0.144	0.192	0.014
composition:1,rho:0.9,df:15,probes:25,size:100	1	0.356	0.232	0.994	0.088	0.356	0.232	0.5	0.088
composition:1,rho:0.9,df:15,probes:49,size:50	0	0.036	0.19	0.114	0.006	0.02	0.032	0.046	0.006
composition:1,rho:0.9,df:15,probes:49,size:100	1	0.064	0.226	1	0.016	0.064	0.226	0.274	0.016
composition:1,rho:0,df:3,probes:25,size:50	1	0.92	1	1	0.92	0.92	1	1	0.92
composition:1,rho:0,df:3,probes:25,size:100	1	1	1	1	1	1	1	1	1
composition:1,rho:0,df:3,probes:49,size:50	0	0.012	1	0.036	0.012	0	0.036	0.048	0
composition:1,rho:0,df:3,probes:49,size:100	1	1	1	1	1	1	1	1	1
composition:1,rho:0,df:9,probes:25,size:50	0.984	0.156	0.904	0.976	0.15	0.154	0.894	0.898	0.15
composition:1,rho:0,df:9,probes:25,size:100	1	0.892	0.984	1	0.88	0.892	0.984	0.996	0.88
composition:1,rho:0,df:9,probes:49,size:50	0	0.002	0.968	0.038	0.002	0	0.038	0.04	0
composition:1,rho:0,df:9,probes:49,size:100	1	0.328	0.998	1	0.328	0.328	0.998	0.998	0.328
composition:1,rho:0,df:15,probes:25,size:50	0.862	0.068	0.652	0.818	0.048	0.062	0.562	0.588	0.042
composition:1,rho:0,df:15,probes:25,size:100	1	0.356	0.848	0.994	0.324	0.356	0.844	0.876	0.324
composition:1,rho:0,df:15,probes:49,size:50	0	0	0.824	0.048	0	0	0.04	0.04	0
composition:1,rho:0,df:15,probes:49,size:100	1	0.064	0.956	1	0.064	0.064	0.956	0.956	0.064

For the row name ---

composition:a b, rho:c d, df:g h, probes(dimension):e , size:f

$a \cdot t_{(e)}(g) + b \cdot t_{(e)}(h)$  , sample size = f , dimension = e, mix proportion: a, b,  $a + b = 1$ , rho: c, d,

it represents the correlation matrix with compound symmetry structure with correlation c and d for the two multivariate t distributions respectively.