

Supplementary Pathological data for breast cancer and control groups

studied in this work.

No.	Age/Sex	Pathology Diagnose
1	36/female	None abnormal sonographic
2	30/female	Corresponded breast hyperplasia sonographic
3	75/female	Corresponded breast hyperplasia sonographic
4	38/female	Corresponded breast hyperplasia sonographic
5	39/female	Corresponded breast hyperplasia sonographic
6	55/female	Corresponded breast hyperplasia sonographic
7	27/female	Corresponded breast hyperplasia sonographic
8	32/female	Corresponded breast hyperplasia sonographic
9	28/female	Corresponded breast hyperplasia sonographic
10	46/female	Corresponded breast hyperplasia sonographic
11	41/female	Corresponded breast hyperplasia sonographic
12	70/female	Corresponded breast hyperplasia sonographic
13	44/female	Corresponded breast hyperplasia sonographic
14	31/female	Corresponded breast hyperplasia sonographic
15	57/female	Corresponded breast hyperplasia sonographic
16	49/female	None abnormal sonographic
17	60/female	Corresponded senile breast sonographic
18	32/female	Corresponded breast hyperplasia sonographic
19	53/female	Corresponded breast hyperplasia sonographic
20	31/female	None abnormal sonographic
21	50/female	None abnormal sonographic
22	31/female	None abnormal sonographic
23	39/female	Corresponded breast hyperplasia sonographic
24	61/female	Corresponded senile breast sonographic
25	80/female	Corresponded senile breast sonographic
26	56/female	Corresponded breast hyperplasia sonographic
27	40/female	Corresponded breast hyperplasia sonographic

28	63/female	Invasive breast cancer III
29	61/female	
30	60/female	Intraductal carcinoma with local invasion
31	59/female	
32	47/female	Invasive breast cancer III
33	48/female	
34	38/female	Invasive breast cancer III
35	45/female	
36	62/female	Invasive breast cancer II
37	60/female	
38	67/female	Invasive breast cancer III
39	57/female	
40	45/female	Invasive breast cancer III/high-level intraductal carcinoma
41	61/female	
42	63/female	Invasive breast cancer III
43	51/female	Nipple Paget's with intraductal carcinoma
		Invasive lobular carcinoma/ Lobular carcinoma in situ
		Invasive breast cancer III
		High-level intraductal carcinoma
		Invasive breast cancer III
		Invasive breast cancer with liver metastasis
		Multifocal intraductal carcinoma
		Invasive breast cancer III

Control group:1-27; Breast cancer group: 28-43.

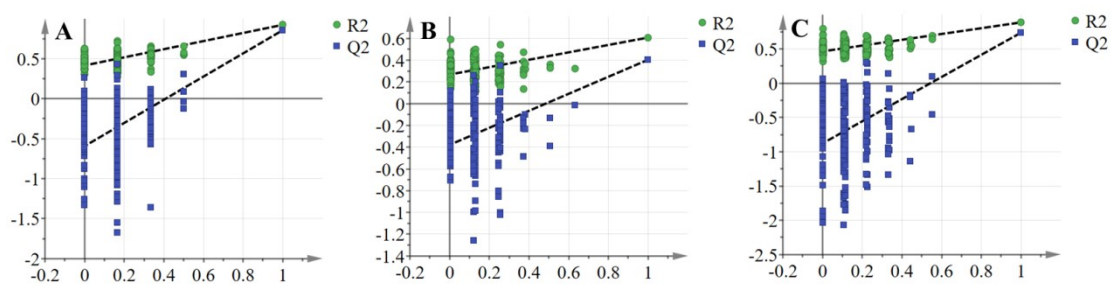


Figure 1 A ,B and C were validations for the models in figure 4 A1,A2 and A3 in the manuscript, respectively. A, $R^2=(0.0,0.416),Q^2=(0.0,-0.593)$; B, $R^2=(0.0,0.268),Q^2=(0.0,-0.378)$; C, $R^2=(0.0,0.465),Q^2=(0.0,-0.878)$.

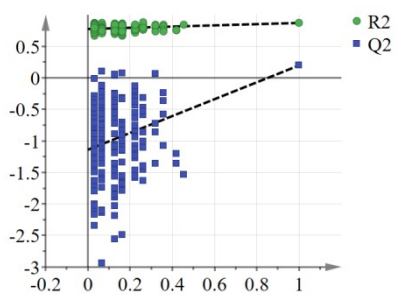


Figure 2 The validation for the OPLS-DA model in figure 5 in the manuscript. $R^2=(0.0,0.775)$, $Q^2=(0.0,-1.14)$.

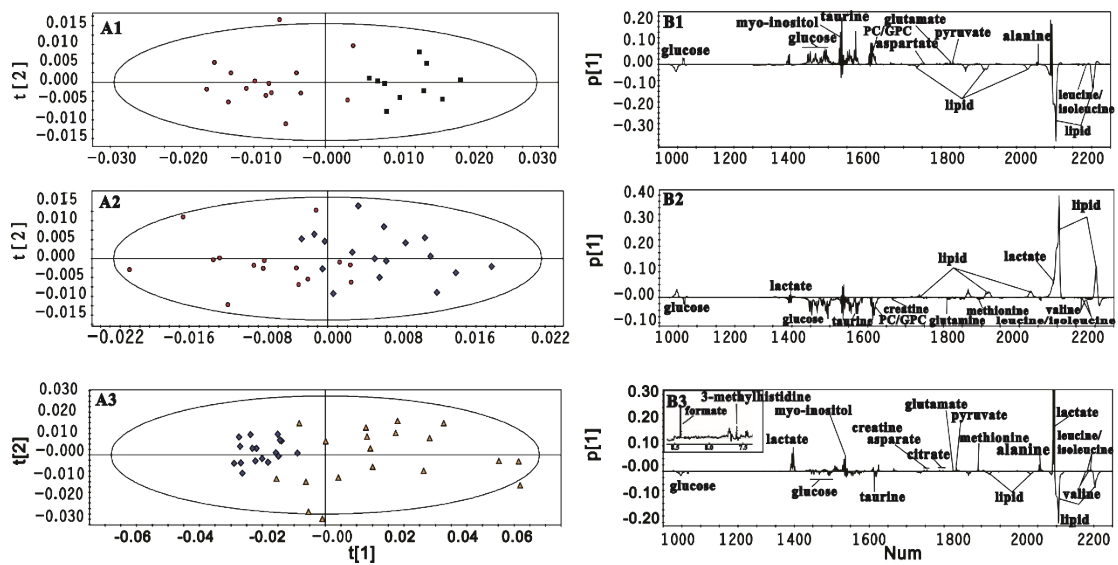


Figure 3 PCA scores plots (A) and PCA loadings plots (B) for MMTV-PyMT transgenic mice at hyperplasia (■, n=9), adenoma (●, n=14), early carcinoma (◆, n=16) and late carcinoma (▲, n=19) stages. A1, $R^2X=0.851$, $Q^2=0.693$; A2, $R^2X=0.740$, $Q^2=0.610$; A3, $R^2X=0.928$, $Q^2=0.885$.