

**Supplementary Table 1.** Results of correlation analysis between metabolic combinations of diagnostic potential and MMSE score in groups of different sex

Groups	Variables	r	p
Males	TPA2+HDA2+H4A1+H4A2	-0.757	<0.001
	H1CH+H4CH+H1FC	-0.758	<0.001
Females	LDAB+L1AB+L2AB+L3AB	-0.360	0.011
	LDCH+L1CH+L2CH+L3CH	-0.337	0.018
	LDFC+L1FC+L2FC+L3FC	-0.325	0.023
	LDCH+L1CH+L2CH+L3CH+LDFC+L1FC+L2FC+L3FC	-0.445	0.001
	L2TG+L3TG	-0.367	0.010
	LDPN+L1PN+L2PN+L3PN	-0.326	0.011
	LDPL+L1PL+L2PL+L3PL	-0.344	0.016

MMSE, mini-mental state examination; TPA2, total apolipoprotein-A2; HDA2, HDL apolipoprotein-A2; H4A1, HDL-4 apolipoprotein-A1; H4A2, HDL-4 apolipoprotein-A2; H1CH, HDL-1 cholesterol; H4CH, HDL-4 cholesterol; H1FC, HDL-1 free cholesterol; LDAB, LDL apolipoprotein-B; L1AB, LDL-1 apolipoprotein-B; L2AB, LDL-2 apolipoprotein-B; L3AB, LDL-3 apolipoprotein-B; LDCH, LDL-cholesterol; L1CH, LDL-1 cholesterol; L2CH, LDL-2 cholesterol; L3CH, LDL-3 cholesterol; LDFC, LDL free cholesterol; L1FC, LDL-1 free cholesterol; L2FC, LDL-2 free cholesterol; L3FC, LDL-3 free cholesterol; L2TG, LDL-2 triglycerides; L3TG, LDL-3 triglycerides; LDPN, LDL particle number; L1PN, LDL-1 particle number; L2PN, LDL-2 particle number; L3PN, LDL-3 particle number; LDPL, LDL phospholipids; L1PL, LDL-1 phospholipids; L2PL, LDL-2 phospholipids; L3PL, LDL-3 phospholipids; HDL, high-density lipoprotein; LDL, low-density lipoprotein