Main functions of the modules in brain specific metabolic network

module	main functions	Neurotransmittera
1	Tyrosine metabolism; Phenylalanine metabolism; Aspartate and asparagine metabolism;	Aspartate; Glycine; Tyramine; Histamine; L-Phenylalanine; L-tyrosine; Vitamin C
	beta-alanine metabolism; Histidine metabolism;	
	cycle;	
	Vitamin C metabolism	
2	neolactoseries	
3	Tyrosine metabolism;	Norepinephrine; Epinephrine
	Neural signal metabolites metabolism	
4	Glycolysis and Gluconeogenesis	
5	Purine metabolism; biopterin metabolism	
6	Glutathione metabolism	
7	proline and glutamate; Vitamin B9 (folate) metabolism	glutamate
8	Squalene and cholesterol biosynthesis	
9	Phosphatidylinositol phosphate metabolism	
10	Vitamin B1 (thiamin) metabolism	
11	Squalene and cholesterol biosynthesis;	
	C21-steroid hormone biosynthesis and metabolism	
12	Leukotriene metabolism	
13	unsaturated fatty acid beta-oxidation	
14	Estrogen biosynthesis and metabolism	
15	Lysine metabolism;	
	Saturated fatty acids beta-oxidation	
16	Purine metabolism	
17	Pyrimidine metabolism; Aminosugars metabolism	
18	Androgen metabolism;	
	C21-steroid hormone biosynthesis and metabolism	
19	Vitamin B5 - CoA biosynthesis from pantothenate;	
	Methionine and cysteine metabolism	Methionine
20	De novo fatty acid biosynthesis	
21	Phytanic acid peroxisomal oxidation; TCA cycle	
22	3-oxo-10R-octadecatrienoate beta-oxidation	
23	Vitamin H (biotin) metabolism	
24	Arachidonic acid metabolism	
25	Galactose metabolism;	
	metabolism	Acetylcholine
26	Glycerophospholipid metabolism;	
	Linoleate metabolism	
27	Tryptophan metabolism	Serotonin; Melatonin; L-Tryptophan
28	Vitamin B3 metabolism	

[a] This column shows the neurotransmitters and precursors of neurotransmitters included in the modules in brain specific metabolic network.