

**Table S3** – Detailed comparative analysis of the metabolomic studies reporting the metabolites isoleucine, asparagine, creatinine, and formate as possible stroke biomarkers. ▼,▲ = increase or decrease, respectively, of metabolite levels.

Study type	Stroke type	Method	People (n)	Place	Age (years)	Sample	Metabolites		Authors
Cohort study	Ischemic & haemorrhagic stroke risk	NMR	197	Long-term care facilities	80-91	Plasma	▼▲ Isoleucine ▲ Asparagine ▲ Formate ▲ Creatinine	▲ Dimethyl sulfone ▲ Unknown 1 ▲ Unknown 3	Present study
Prospective cohort study	Thrombotic	UPLC-MS/MS	400	Hospital	42-53	Serum	▲ L-tryptophan ▲ 3-methoxytyramine ▲ Methionine ▲ Homocysteine sulfinic acid ▲ Cysteine	▲ Isoleucine ▲ Carnitine ▲ Arginine ▲ Linoleic acid ▲ Sphingosine	Khan et. al (13)
Longitudinal cohort study	Ischemic	LC-MS	20	Hospital	57	Serum	▲ Asparagine ▲ Tyrosine	▲ Xylose	Sidorov et. al (20)
Cohort study	Ischemic	UPLC-MS/MS	216	Hospital	63-65	Serum	▲ Ornithine, ▲ Asparagine ▲ Valine ▲ Cysteine	▲ Glutamine ▲ Phenylalanine ▲ Tyrosine ▼ Citrulline	Tao et. al (22)
Cohort study	Cerebral infarction	NMR	58	Hospital	68-69	Plasma	▲ Lactate ▲ Pyruvate ▲ Glycolate	▲ Formate ▼ Glutamine ▼ Methanol	Jung et. al (23)
Cohort study	Ischemic	LC-MS/MS	84	Hospital	≥18	Plasma	▼ Valine ▼ Leucine	▼ Isoleucine	Kimberly et. al (27)
Longitudinal cohort study	Ischemic & haemorrhagic	LC-MS/MS	970	Hospital	67-70	Plasma	▲ Valine ▲ Leucine	▲ Isoleucine	Ruiz-Canela et al. (36)

Study type	Stroke type	Method	People (n)	Place	Age (years)	Sample	Metabolites		Authors
Cohort study	Ischemic and transient ischemic attack	UHPLC - MS/MS	60	Hospital	66-67	Serum	▲ Carnitine ▲ Creatinine ▲ Proline ▲ N-acetylneuraminic acid ▲ Hypoxanthine, ▲ Uric acid ▲ Tyrosine ▲ Kynurenine ▲ Phenylalanine	▲ Sphingosine-1-phosphate ▲ Palmitoylcarnitine ▼ Citric acid ▼ Valine ▼ Isoleucine ▼ Tryptophan ▼ LysoPCs	Liu et al. (38)
Prospective cohort study	Ischemic and haemorrhagic stroke risk	NMR	799	Hospital	54-55	Plasma	▼ Valine ▼ Leucine	▼ Isoleucine	Tobias et al. (39)