



Gamma-aminobutyric acid (GABA) is a non-proteinogenic amino acid that is present in high concentrations in many brain regions. It is involved in many aspects of plant life and a signaling molecule in plants.

GABA metabolism is important for the overall metabolism of the brain, with up to 30% of the TCA cycle turnover in the brain occurring via the GABA shunt. Inhibitors of GABA metabolism can increase brain levels of GABA, which can act as anticonvulsants.

GABA metabolism is a complex process that involves multiple pathways, including the GABA shunt, the GABA-branched pathway, and the polyamine degradation pathway:

- GABA shunt: A closed-loop metabolic pathway that produces and maintains GABA levels. The GABA shunt bypasses part of the tricarboxylic acid cycle (TCA cycle) in the brain. The GABA shunt includes the following steps:
 - Transamination of α -ketoglutarate
 - Decarboxylation of glutamic acid
 - Oxidation of succinic semialdehyde
- Polyamine degradation and synthesis pathway

