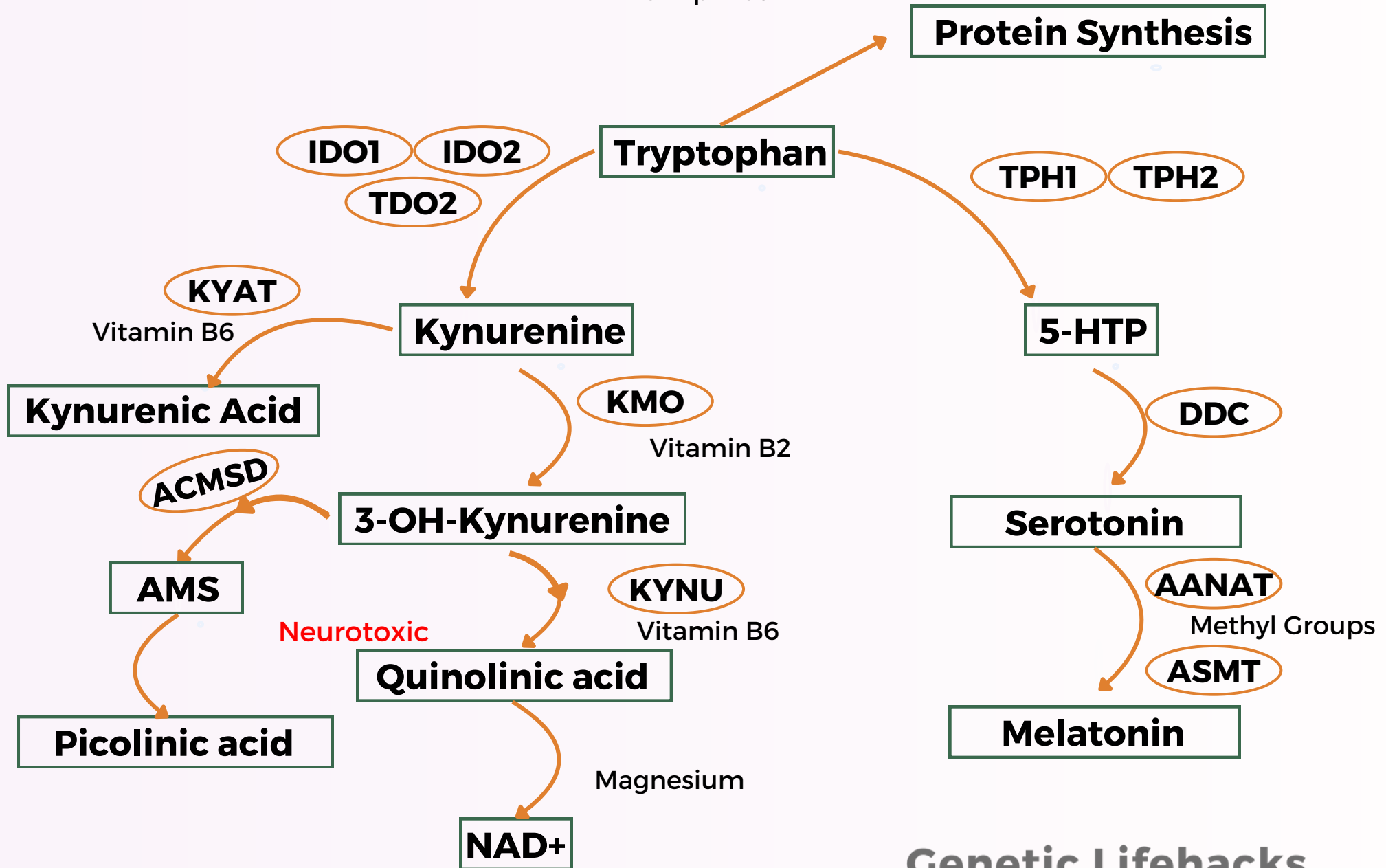


Tryptophan Pathway

Simplified



PMC5676848

Tryptophan Genes

IDO1

- Indoleamine 2,3-dioxygenase
- An enzyme that catalyzes the first and rate-limiting step in tryptophan catabolism to N-formyl-kynurenine.
- Widely expressed in all tissue

KYAT

- Kynurenine aminotransferase 3
- An enzyme that converts kynurenine to form kynurenic acid
- Widely expressed

IDO2

- Indoleamine 2,3-dioxygenase
- An enzyme that catalyzes the breakdown of tryptophan. Similar to IDO1, but less active.
- Mainly expressed in the liver, kidney, and immune system cells

KMO

- Kynurenine 3-monooxygenase
- An enzyme that catalyzes the hydroxylation of L-tryptophan metabolite, L-kynurenine, to form L-3-hydroxykynurenine.
- Widely expressed in most tissues

TDO2

- Tryptophan 2,3-dioxygenase
- An enzyme that plays a critical role in tryptophan metabolism by catalyzing the first and rate-limiting step of the kynurenine pathway
- Expressed in liver, appendix

KYNU

- Kynureninase
- An enzyme that catalyzes the cleavage of L-kynurenine and L-3-hydroxykynurenine into anthranilic and 3-hydroxyanthranilic acids,
- Widely expressed in most tissues

TPH1

- Tryptophan hydroxylase 1
- An enzyme that catalyzes the first and rate-limiting step in the biosynthesis of serotonin
- Widely expressed in many tissues

TPH2

- Tryptophan hydroxylase 2
- An enzyme that catalyzes the first and rate-limiting step in the biosynthesis of serotonin
- Mainly expressed in the brain, pancreas