

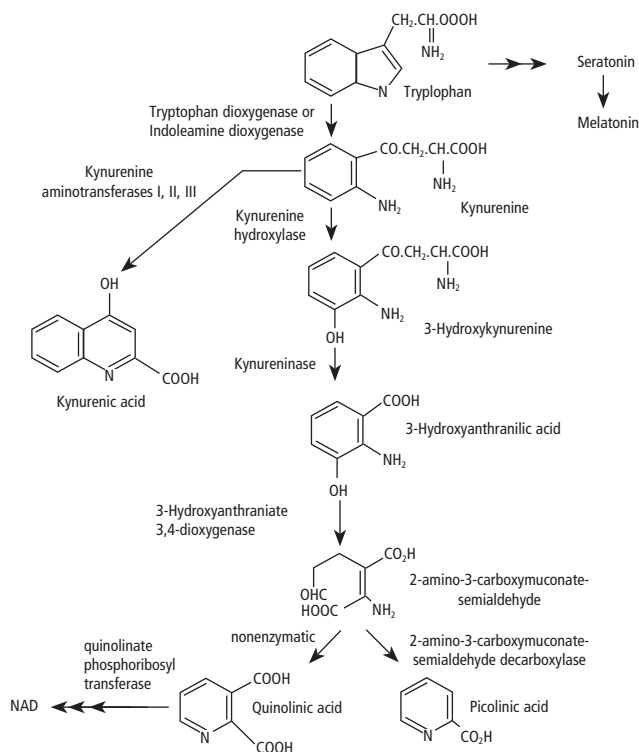
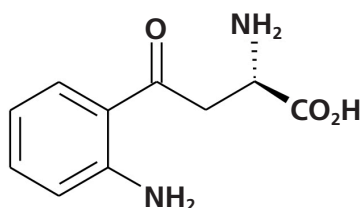


[Phenyl-3,5-³H] L-Kynurenine

L-Kynurenine is derived from tryptophan and is the central metabolite in a complex biological scheme known as the kynurenine pathway.¹ While L-Tryptophan is also a precursor to the neurotransmitter Serotonin (5-hydroxy tryptamine, NET1167), most of the non-protein tryptophan is metabolized by the Kynurenine pathway.

L-Kynurenine is also involved in many physiological functions of human health including behavior and sleep. The first enzyme of the kynurenine pathway, indoleamine 2,3-dioxygenase is upregulated during immune response activation,² and is immunoprotective in corneal transplants.³ It is critical to human health because the metabolic fate of L-Kynurenine is shunted into two separate arms. These two separate pathways end either in Kynurenic acid or in Quinolinic acid. The latter is an NMDA receptor agonist, while kynurenic acid is an antagonist of the same.⁴ Kynurenic acid is possibly a $\alpha 7$ nicotinic acid receptor agonist,⁵ is neuroprotective, anti-inflammatory⁶ and various analogues of kynurenic acid that act as neuroprotectants are used for treatment of stroke and other neurodegenerative diseases.⁷ Kynurenine metabolites such as 3-hydroxy kynurenine and quinolinic acid are used in NAD synthesis but also have been shown to have a potent neurotoxic effect and are involved in neurodegenerative processes in the brain.^{4,8,9} The balance of these endogenous compounds relates directly to a variety of disease states such as the AIDS dementia complex, Alzheimer's disease, Huntington's disease, amyotrophic lateral sclerosis, multiple sclerosis and Parkinson's disease.¹⁰

L-Kynurenine



Source: Wikipedia

To support this critical and emerging research, PerkinElmer now also offers [phenyl-³H] L-kynurenine (NET1214) at high specific activity and radiopurity. Use of this valuable radioligand will no doubt advance important research in this area.

By using radioactive isotopes to directly replace non-radioactive atoms, the biology of the substance you are studying is not altered. The use of radiochemicals is of critical importance in the drug development process for use as radioligands in lead discovery, as metabolic tracers in development, and ADME-Tox studies.

References

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