

TRYPHTOPHAN METABOLISM IS ABNORMAL IN ALLERGY

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Metabolism of the essential amino acid tryptophan is critically involved in the regulation of immunity in humans. During Th1-type immune response, tryptophan breakdown is enhanced due to the stimulation of the enzyme indoleamine 2, 3-dioxygenase (IDO-1) by cytokines like interferon- γ . Kynurenine derivatives may accumulate as products of IDO-1 activity and can themselves act as immunoregulators and slow-down Th1-type immunity. In conditions with an activated Th1-type immune system, tryptophan breakdown is accelerated which is accompanied by lowering of tryptophan and increase of kynurenine in the blood leading to an increased kynurenine to tryptophan ratio (Kyn/Trp). Kyn/Trp ratio reflects the course of diseases like virus infections, autoimmune syndromes and malignant diseases which is of predictive value. Patients suffering from allergic pollinosis out of pollen season often present with elevated tryptophan levels. Specific immunotherapy was observed to improve these levels. The determination of serum tryptophan and Kyn/Trp levels could fill the gap of a laboratory diagnostic parameter that is useful for monitoring therapy and predicting therapy outcome in patients with pollinosis and other allergies.



Biography

Dietmar Fuchs has completed his PhD (Chemistry) and his Postdoctoral studies from Leopold Franzens University in Innsbruck. He is the Vice Director of Division of Biological Chemistry, Innsbruck Medical University. He has published more than 750 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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