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**Review of 10 years of research on breast cancer patients: Focus on indoleamine
2, 3-dioxygenase**

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Abstract

Therapeutic manipulation of immune system in cancer has been an extensive area of research in the field of oncoimmunology. Immunosuppression regulates the antitumor immune responses. An immunosuppressive enzyme, indoleamine 2,3-dioxygenase (IDO) mediates tumor immune escape in various malignancies including breast cancer. IDO up-regulation in breast cancer cells may lead to

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Indoleamine 2,3-dioxygenase (IDO) is an interferon-inducible immune checkpoint expressed on tumor-infiltrating lymphocytes (TILs). **IDO** is known as a poor prognostic marker in esophageal squamous cell cancer, while a positive effect was shown for breast cancer. A comprehensive **analysis** of **IDO** expression in a well-defined cohort of esophageal adenocarcinoma (EAC) is ...

Author: Heike Loeser, Max Kraemer, Floria... **Publish Year:** 2020

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Recent **studies** have consistently shown expression of **indoleamine 2,3dioxygenase (IDO)**, the initial and rate-limiting enzyme of **the kynurenine** pathway, in a variety of human tumors, including breast...

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Feb 08, 2021 · Indoleamine 2,3-dioxygenase 1 (IDO1), a monomeric heme-containing enzyme, catalyzes the first and rate-limiting step in the kynurenine pathway of tryptophan metabolism, which plays an important role in immunity and neuronal function. Its implication in different pathophysiologic processes including cancer and neurodegenerative diseases has inspired the development of IDO1 inhibitors in ...

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The Role of Indoleamine-2,3-Dioxygenase in Cancer ...

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Indolamine-2,3-dioxygenase 1 is a cytosolic enzyme with a heme (Fe2+) prosthetic group that catalyzes the first and rate-limiting step of tryptophan (Trp) catabolism (Figure 1A). IDO1 converts the essential amino acid Trp to kynurenine (Kyn) by cleaving the 2,3-double bond of the indole ring while a molecular oxygen (O2) merges into the unsealed molecule. The product is N-formylkynurenine that becomes rapidly and spontaneously transformed into Kyn (1). In the next steps, Kyn is further converted to other active ...

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