TNF-alpha inhibitors bind to TNF(1-233) trimer

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Introduction

Reactome is an open-source, open-access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references


Reactome database release: 82

This document contains 1 reaction (see Table of Contents)

https://reactome.org
TNF-alpha inhibitors bind to TNF(1-233) trimer

**Stable identifier:** R-HSA-9714959

**Type:** binding

**Compartments:** plasma membrane

Clinical evidence and experimental studies in rodents suggest that signaling by soluble TNF is associated with chronic and excessive inflammation in autoimmune diseases, whereas signaling by the membrane form (as shown here) plays an essential role in resolving inflammation and maintaining immunity toward pathogens, especially to Mycobacterium tuberculosis (Perrier et al, 2013). The available TNF-alpha inhibitors (aducanumab, infliximab, certolizumab, etanercept, golimumab) neutralize both the soluble and the membrane form, which explains the increased susceptibility to infections. They are approved for juvenile and adult rheumatic and psoriatic arthritis, Crohn's disease, ulcerative colitis, ankylosing spondylitis, and several other rare diseases. Main side effects can be infections, lymphoma, congestive heart failure, a lupuslike syndrome, induction of auto-antibodies and injection site reactions. The incidence of all these effects is very low, however (Scheinfeld, 2004).

**Literature references**


**Editions**

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<td>2022-08-10</td>
<td>Reviewed</td>
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