

## Psoriasis Pharmacology



PLAY PICMONIC

### Cyclosporine

#### Cycle-spear-gun

Cyclosporine is a calcineurin inhibitor that binds cyclophilin. It prevents IL-2 transcription leading to the inactivation of T-cell, which is the mediated cell for the psoriasis pathogenesis.

### Methotrexate

#### Moth-T-Rex-ate

Methotrexate is an antimetabolite analog of folic acid that reduces DNA synthesis by competitively inhibiting dihydrofolate reductase. It is used if the topical agent fails to treat psoriasis.

### Topical Agents

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Topical agents used to treat psoriasis are corticosteroids, tacrolimus, tazarotene, and vitamin D analogs. It is effective in mild to moderate psoriasis, with less than 5% of the body surface affected, sparing the genitals, hands, feet, and face.

## Antibody Therapy

### Infliximab

#### N-flicks

TNF- $\alpha$  is one of the cytokines involved in the pathogenesis of psoriasis. Interfering this process will help treat moderate to severe psoriasis, defined with more than 5% body surface area or involving hands, feet, face, or genitals. Infliximab is one example of a TNF- $\alpha$  inhibitor. It provides the most rapid clinical response among other biologic therapies.

### Adalimumab

#### A-Dali-mummy

Adalimumab is another example of a TNF- $\alpha$  inhibitor that targets soluble TNF- $\alpha$ . Patients should also be screened for TB, PPD tuberculin test due to the risk of TB reactivation. This is also indicated in patients using infliximab.

### Etanercept

#### E-tan-nurse Interceptor

Etanercept acts by blocking the interaction between TNF and its receptor. It can be used as a treatment option to treat moderate to severe psoriasis.

### **Guselkumab**

[Goose-elephant](#)

IL-23/IL-17 axis is currently thought to involve in the principal pathogenic pathway in psoriasis. Guselkumab is the first drug in its class, IL-23 blocker, to be approved by FDA as a treatment option for moderate-severe plaque psoriasis.

### **Natalizumab (Tysabri)**

[Nature-man](#)

Natalizumab targets  $\alpha$ 4-integrin, which is responsible for WBC adhesion. It can increase the risk of PML in patients infected by the JC virus.

### **Ustekinumab**

[US-Tech-man](#)

Psoriasis patients are found to respond to treatment that interferes with lymphocyte activation, the tumor necrosis factor (TNF) pathway, agents blocking interleukin (IL)-17, or the IL-12/23p40 subunit.

Ustekinumab is a fully human immunoglobulin G1 $\kappa$  (IgG1 $\kappa$ ) monoclonal antibody that targets the p40 subunit shared by IL-12 and IL-23.

### **Ixekizumab**

[Exit-man with I-shaker](#)

Ixekizumab is an IL-17A antagonist used to treat moderate to severe plaque psoriasis. It should be avoided in patients with inflammatory bowel disease.

### **Secukinumab**

[Second \(2nd\)-man](#)

Secukinumab is an IL-17A antagonist used to treat moderate to severe plaque psoriasis.