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Biologic response modifiers

Biological response modifiers or 'biologics' are drugs derived from living material (human, plant, animal, or micro-organism). They interfere with specific parts of the body's immune system to treat and prevent immune-mediated inflammatory disorders such as [rheumatoid arthritis](#), Crohn disease, [psoriasis](#) and [psoriatic arthritis](#).

Whilst some biologics such as [infliximab](#) are currently registered for treating [Crohn disease](#) and severe rheumatoid arthritis, their use in the treatment of psoriasis is still fairly new. Biologics are the newest medications currently being approved for the treatment of psoriasis. Included in this class of drugs are:

- [Alefacept](#)
- [Efalizumab](#)
- [Infliximab](#)
- [Etanercept](#)
- [Adalimumab](#)

How do biologics work?

Evidence from recent research in psoriasis strongly suggests that this is a disorder of the immune system. Known as an autoimmune disease, this basically means that an individual's immune system starts reacting against his or her own tissue. In this particular instance, abnormally large numbers of T cells (a type of white blood cell) trigger the release of cytokines (chemicals in the body's immune system) that can cause inflammation, redness, itching and flaky skin patches characteristic of psoriasis.

Biologics work by interfering with specific components of the autoimmune response. Unlike general immunosuppressants that suppress the entire immune system, biologics can fight more selectively and target only those chemicals involved in causing psoriasis.

Etanercept and infliximab belong to the class of biological medicines called tumour necrosis factor (TNF) blockers. These work by blocking the activity of TNF, the primary cytokine involved in psoriasis. Alefacept and efalizumab are T-cell blockers and block the overactive T-cells.

How are biologics given?

All these biological medicines are given by injection at defined intervals. The interval between doses is dependent on each individual biological medicine. Alefacept and efalizumab are usually given once weekly. Infliximab given 3 times over a period of 6 weeks appears successful in inducing prolonged periods of remission in many patients.

Treatments are administered by your doctor and usually managed on an outpatient basis.

What are the possible side effects of biologics?

To date, biologics appear to have very few side effects. Because of their precise targets, they appear not to damage the entire immune system the way that general immunosuppressants do. However, biologics should still be considered immunosuppressive and may increase the risk of infection and reactivation of TB or some lymphomas. Further use and research are needed to establish the long-term safety of these medicines.

When should biologics be used?

Due to the high cost of these medicines it is likely their use will be limited to patients with moderate to severe psoriasis where:

- all other treatments have failed
- side effects of other treatments become intolerable or toxicity has occurred
- concurrent diseases such as congestive heart failure or liver disease preclude the use of currently available systemic therapies.

Related information

References:

- Mehlis SL, Gordon KB. The immunology of psoriasis and biologic immunotherapy. J Am Acad Dermatol 2003;49:S44–50
- Menter MA, Krueger GC, Feldman SR, Weinstein GD, Psoriasis treatment 2003 at the new millennium: Position paper on behalf of the authors. J Am Acad Dermatol 2003;49:S39–43
- Immunomodulatory drugs for psoriasis. Editorial. BMJ 2003;327:634–635

On DermNet NZ:

- [Psoriasis](#)
- [Psoriatic arthritis](#)
- [Alefaccept](#)
- [Infliximab](#)
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Other websites:

Books about skin diseases:

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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