What is IL-17A?
Interleukin-17A (IL-17A) is one of over a dozen proteins in the body that act like “messengers” to coordinate communication between immune cells, called cytokines. These cytokines usually work by signaling to infection-fighting cells that they need to mount an immune response once a foreign invader has been detected.

IL-17A has also been identified as playing a key role in a number of immune-mediated diseases such as moderate-to-severe plaque psoriasis, and is considered a preferred target for investigational therapies.

What is the role of IL-17A in psoriasis?
Scientific understanding of psoriasis has transformed since IL-17A was first discovered in 1993, shifting from what was previously thought to be a disorder of excess skin cell proliferation to a systemic inflammatory disease of the immune system.

IL-17A is found in higher concentrations in skin affected by psoriasis, with levels up to six times higher than in non-psoriatic skin. Increased IL-17A levels in the skin have also been linked to more severe psoriasis symptoms.

Recent research has established that IL-17A is part of a vicious cycle in psoriasis, where IL-17A signals to skin cells and the immune system, ultimately causing symptoms characteristic of the disease:

- Increased levels of IL-17A are present in the skin.
- IL-17A signals to the most common type of skin cell (a keratinocyte), resulting in the growth of new skin cells at a faster rate than normal and the build-up of cells on the skin’s surface, causing symptoms like thickened skin and plaques (scaly skin).
- IL-17A also signals to infection-fighting cells, triggering inflammatory symptoms like itching and redness.
- These infection-fighting cells also create more IL-17A, thus continuing the cycle.

IL-17A has therefore been identified as a rational target for therapeutic intervention. In addition, research suggests that directly inhibiting IL-17A does not compromise other parts of the immune system, meaning that the body can continue fighting infection.

How does secukinumab (AIN457) neutralize IL-17A?
Secukinumab is a fully human monoclonal antibody that selectively binds to IL-17A, modulating its activity. It is the first IL-17A-targeted agent with available Phase III results, and is currently being explored in the treatment of various autoimmune diseases, including psoriatic arthritis (PsA), ankylosing spondylitis (AS) and rheumatoid arthritis (RA).

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References

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