

## Bidens Pilosa Research Paper

### APPEARS INS



Bidens Pilosa Extract, also known as bio-retinol, is a safe, stable, plant-based alternative to retinoids for targeting skin concerns like fine lines, acne, dark spots and uneven skin texture. Three Ships uses Bidens Pilosa Extract in our [Dream Bio-Retinol + Shorea Butter Night Cream](#).

While it is not actually a retinoid, the Bidens Pilosa Extract acts in a similar way to produce beneficial skin results.

### A PLANT BASED ALTERNATIVE TO RETINOIDS

Traditional retinoids are known for their collagen stimulating and acne fighting properties, however, these vitamin A derivatives have potential adverse side effects such as dryness, burning, and photosensitivity.

Bidens Pilosa acts as a retinoid alternative, mimicking the positive effects of retinoids without those side effects. Bidens Pilosa is a herbaceous plant that is predominantly native to tropical areas of South America and the flower has been known for its applications in herbal and popular medicine.



The Bidens Pilosa Flower is harvested and cleaned before it is processed. Bidens Pilosa Extract is made using supercritical carbon-dioxide extraction to concentrate phytol (the powerhouse chemical in the extract) and its derivatives. The extraction of supercritical fluids provides advantages over the conventional process for obtaining active ingredients from plant cells because it promotes the collection and separation of more purified compounds in higher concentrations.

The exact process of extraction method for the Bidens Pilosa Extract that Three Ships sources is proprietary information.

**TARGETS SKIN CONCERNS LIKE WRINKLES, ACNE,  
DARK SPOTS AND UNEVEN SKIN TEXTURE**

Retinoids travel to the nucleus of cells and bind to receptors there: RXRs (Retinoids X Receptors) and RARs (Retinoic Acid Receptors). Binding to these receptors stimulates the transcriptional activity, allowing retinoids to work. The powerhouse chemical that is extracted from the Bidens Pilosa Flower is phytol.

Phytol is present as part of the chlorophyll pigment and, when metabolized, it converts to phytanic acid that is able to bind to RXR receptors in cells, activating them as retinoids and their derivatives in low concentrations. It also stimulates the transcriptional activity of RAR in cells, giving it “retinol-like” properties.

**SCIENTIFIC STUDY**

Antiaging Mechanisms of a Standardized Supercritical CO2 Preparation of Black Jack (Bidens Pilosa L.) in Human Fibroblasts and Skin Fragments

One study measured Bidens Pilosa Extract’s effect on anti-aging related factors. Overall, it was found that the extract showed promising results, with significant increases in the synthesis of collagen and elastin.

The extract did not show significant impacts on the gene expression of RARs, however, it did show significant increases in the RXR receptor gene expression with 3.6, 3.7, and 1.6-fold increases seen with 0.05, 0.10, and 0.20 mg/mL concentrations of Bidens Pilosa Extract, respectively. Furthermore, phytol was found to have a similar effect on RXR as the Bidens Pilosa Extract, supporting the idea that phytol is the component driving the results seen from the extract.

Bidens Pilosa Extract (bio-retinol) is a plant-based compound that exhibits similar properties to traditional retinoids, without the undesirable side effects, thus acting as an effective retinol alternative or “bio-retinol”.

Studies have shown the skincare benefits of the extract when compared to retinol, making the Bidens Pilosa Extract a powerful and practical skincare ingredient. This is found as one of the hero ingredients in the Three Ships Dream Bio-Retinol + Shorea Butter Night Cream.