Non-steroidal topical formulation for the clinical and sub-clinical inflammatory conditions of the skin

Overview

Despite a variety of emollients available in the market for soothing inflammatory conditions of the skin such as eczema; there is none available with strong anti-inflammatory and antipruritic properties except topical steroids which are often not preferred due to their obvious side effects and safety concerns over long term use.

It is, therefore, an object of the invention to provide a topical formulation suitable to apply on skin that effectively reduces inflammation and other the symptoms of skin conditions, such as eczema or dermatitis. We have completed preliminary screening in cell-culture models to evaluate the effect on inflammatory markers (cytokines and chemokines) and results are very promising.

The figures appended below demonstrates the effects of novel formulations on various inflammatory markers superior to a standard steroid (hydrocortisone). The investigation included various pro-inflammatory cytokines (TNFα, IL-1β, IL-6, IL-13 and IL-4) and chemokines (CCL-5, CCL-17 and TSLP) in cultured human keratinocytes (HaCaT) cells (cells from human skin epidermis).

Benefits

- Non-steroidal topical formulation with similar or superior anti-inflammatory efficacy to steroids (such as hydrocortisone).
- Proven efficacy in human keratinocytes cultured cells to demonstrate a significant reduction in cytokines and chemokines induced inflammation.
- In-vitro evidence to include a reduction in TNF-α, IL-6, IL-1β, IL-13, IL-4 and chemokines CCL-5, CCL-17 and TSP mediated inflammation.
- Comparable safety to topical products in the market demonstrated via MTT assay.

Intellectual Property Status

- Patent Application Number: GB1916398.9
- Lodged on: 11th November 2019
- Status: Technology is available for licensing, commercialisation or further development, prototype formulations are ready for clinical evaluation

Contacts

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Figures

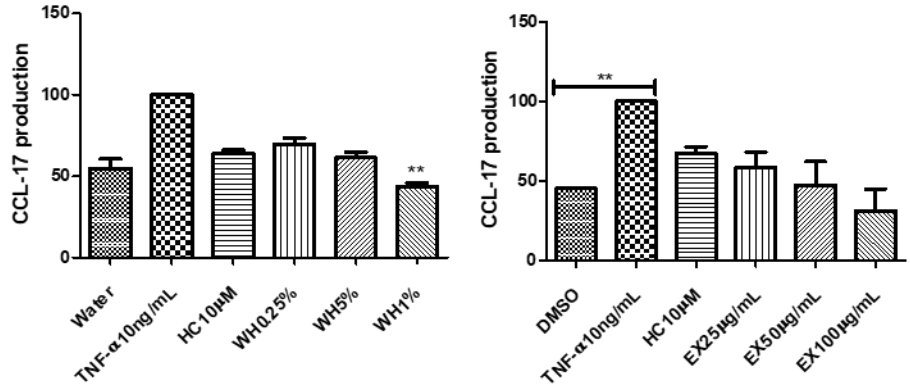

Figure 1. Reduction in CCL-17 in cultured HaCaT cells. HC refers to hydrocortisone, WH and EX refers to novel formulations.

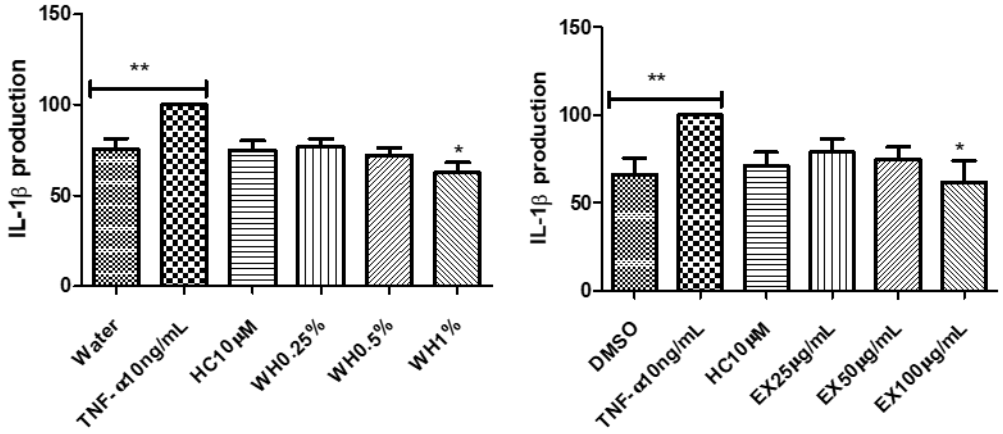

Figure 2. Reduction in IL-1β in cultured HaCaT cells. HC refers to hydrocortisone, WH and EX refers to novel formulations.

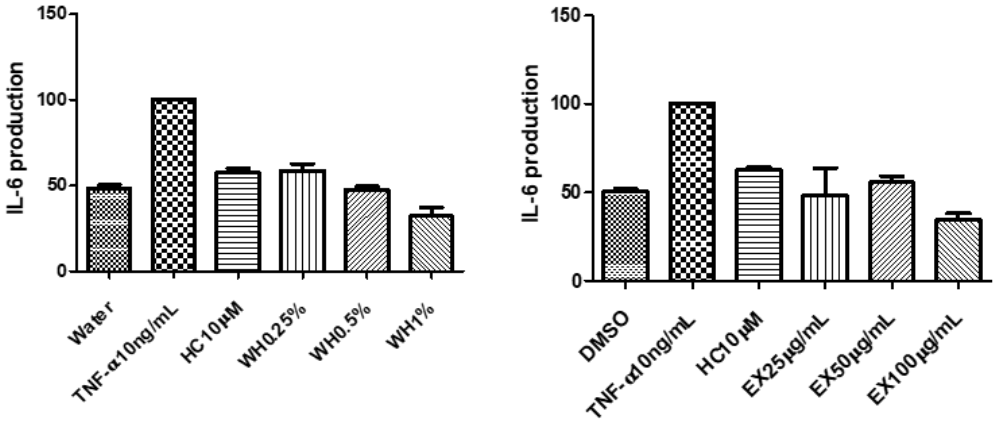

Figure 3. Reduction in IL-IL-6 in cultured HaCaT cells. HC refers to hydrocortisone, WH and EX refers to novel formulations.

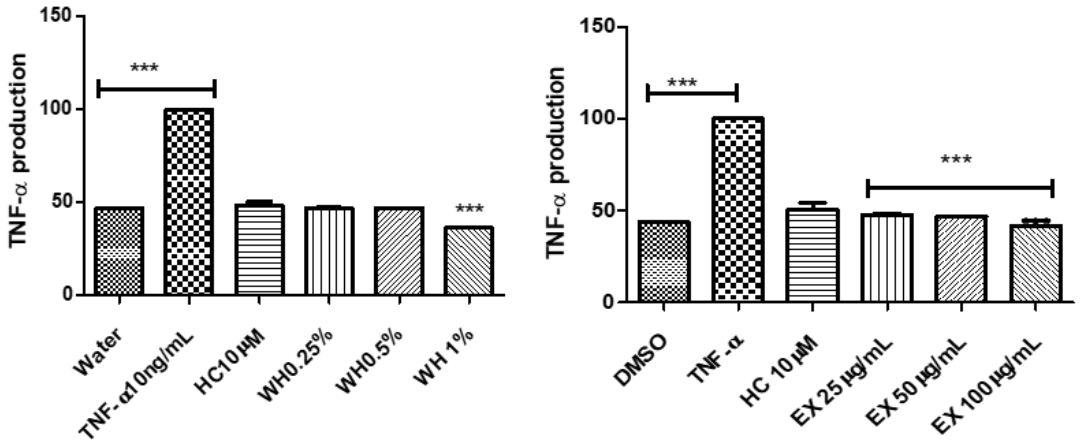

Figure 4. Reduction in IL-TNF-α in cultured HaCaT cells. HC refers to hydrocortisone, WH and EX refers to novel formulations.

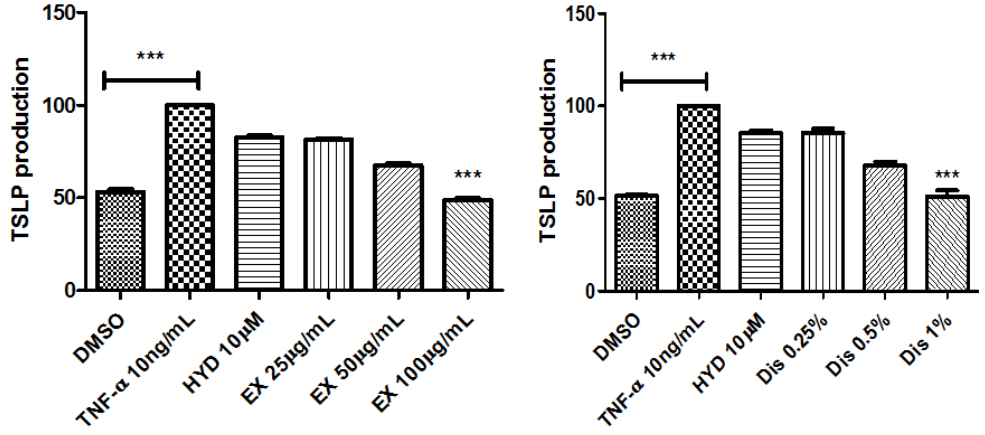

Figure 5. Reduction in TSLP in cultured HaCaT cells. HC refers to hydrocortisone, EX and Dis refers to novel formulations.

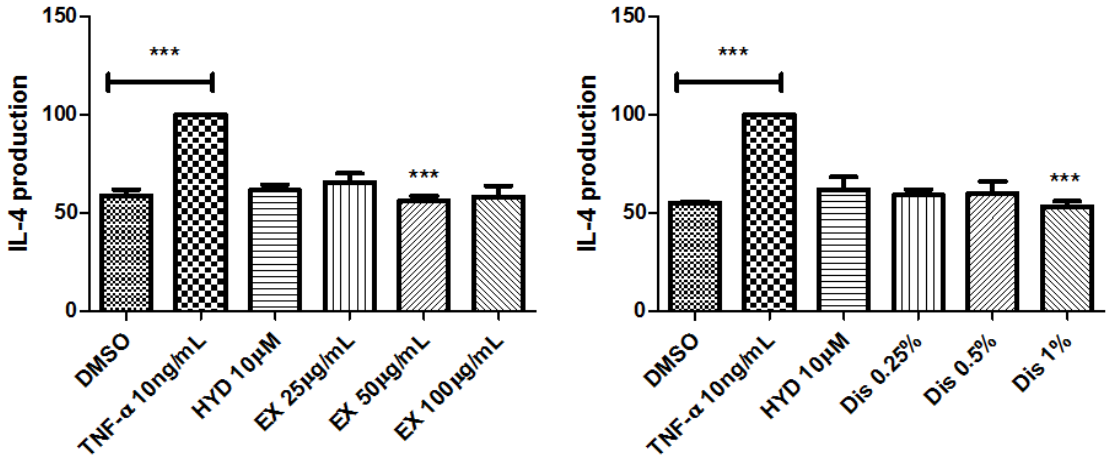

Figure 6. Reduction in IL-4 in cultured HaCaT cells. HC refers to hydrocortisone, EX and Dis refers to novel formulations.

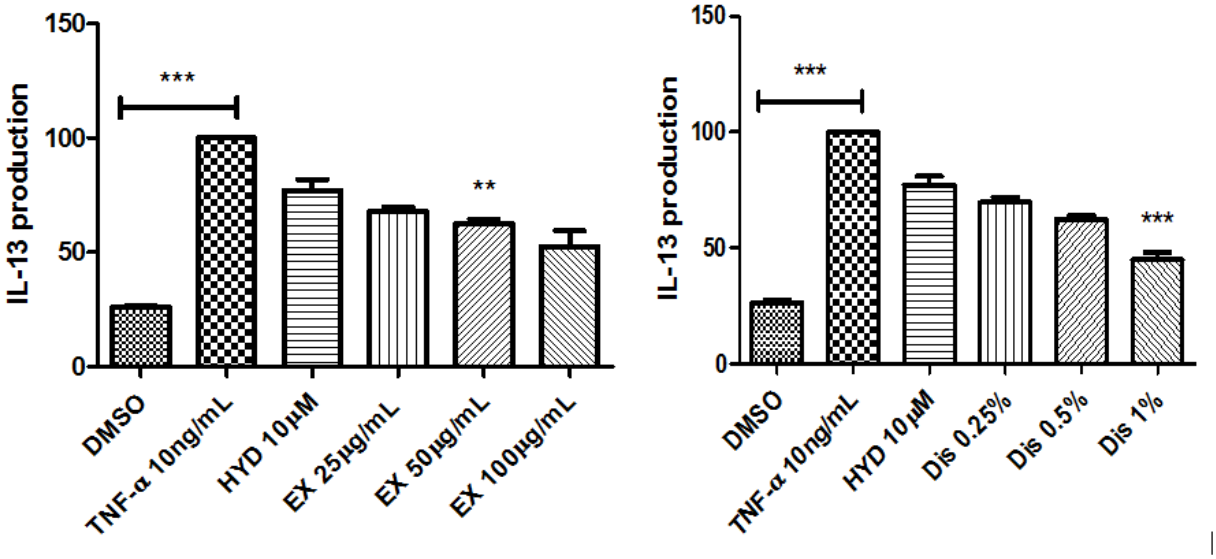

Figure 7. Reduction in IL-13 in cultured HaCaT cells. HC refers to hydrocortisone, EX and Dis refers to novel formulations containing.