Scutellaria baicalensis ameliorates psoriasis-like lesions via modulating the multiple cells in skin microenvironment

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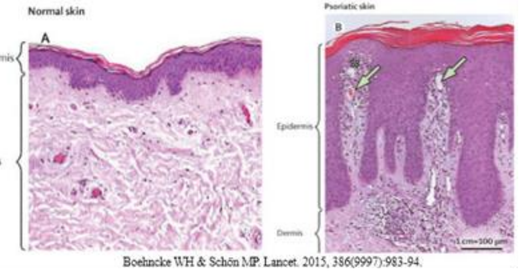
- This work was supported by a grant from the National Science and Technology Council, Taiwan.

✓ Background

- Psoriasis, characterized by hyperproliferation as well as abnormal differentiation of keratinocytes, is a chronic and immune-mediated inflammatory disorder affecting 2~3% of the global population. Psoriasis leads to a severe impact on the public health due to its high prevalence and the cost of long-term management.
- The clinical treatment of psoriasis has been challenged due to drug resistance, unwanted side effects including drug–drug interactions and cumulative organ toxicities for long-term usage or gap in the knowledge of this multifactorial disease.
- Chinese remedies have been considered as complementary and alternative methods for treating dermatological diseases. In addition, the major pathogenesis of psoriasis is caused by dysregulated interplays between epidermal keratinocytes and immune system, which results in inflammation, abnormal proliferation, and differentiation of keratinocytes.



✓ Objective

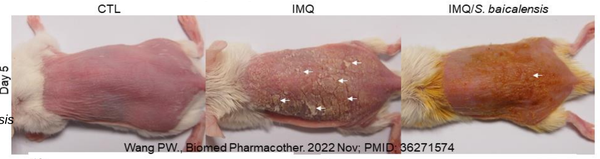
- We explore the pharmaceutical efficacy of *Scutellaria baicalensis* in modulating the microenvironment created by macrophages and keratinocytes in psoriasis.

✓ Results

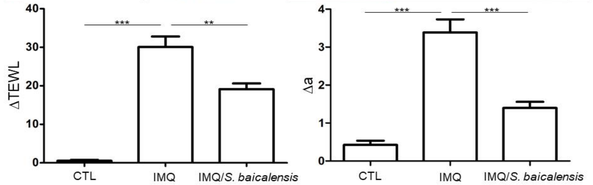
- *In vivo*

imiquimod (IMQ)

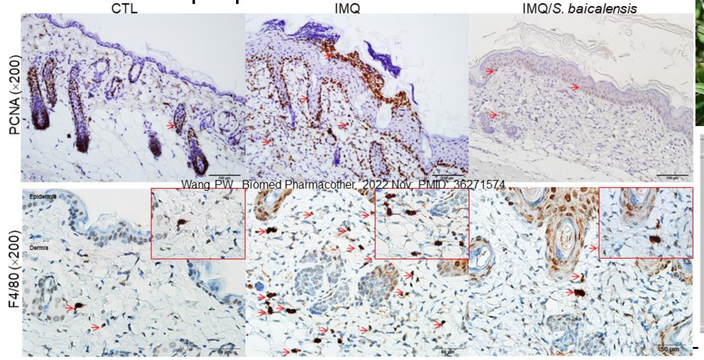
- Skin macroscopic phenomena



Wang PW., Biomed Pharmacother. 2022 Nov; PMID: 36271574



- Skin microscopic phenomena



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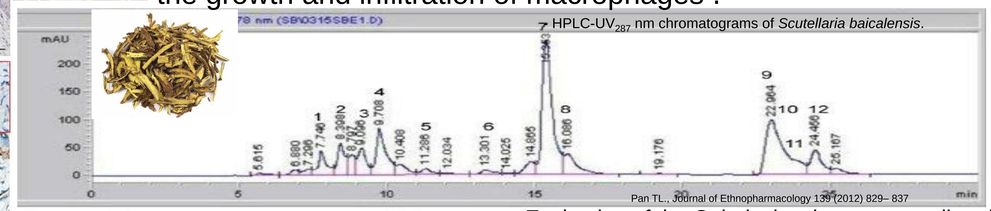
- *Scutellaria baicalensis* (*S. baicalensis*) shows a variety biological activities including heat-clearing, immune regulation and detoxifying. It also significantly suppresses the proliferation of keratinocytes and attenuates psoriatic injuries via inhibiting the growth and infiltration of macrophages .

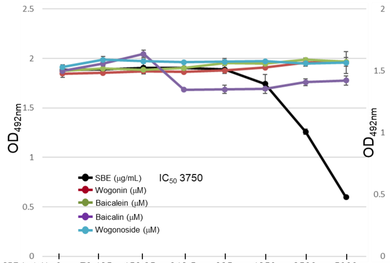


- HPLC-UV$_{287}$ nm chromatograms of *Scutellaria baicalensis*.

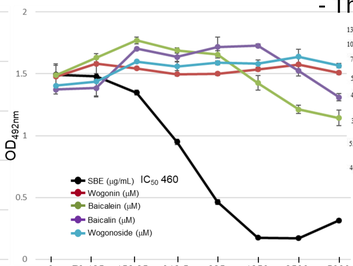
Pan TL., Journal of Ethnopharmacology 139 (2012) 829– 837

- *In vitro*

- HaCaT Cell



- RAW Cell



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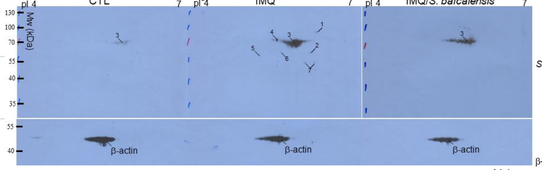
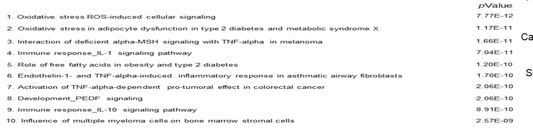
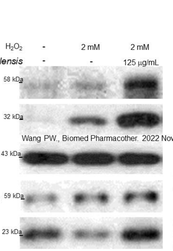
- The antioxidant ability of *S. baicalensis* extract in the IMQ-applied skin







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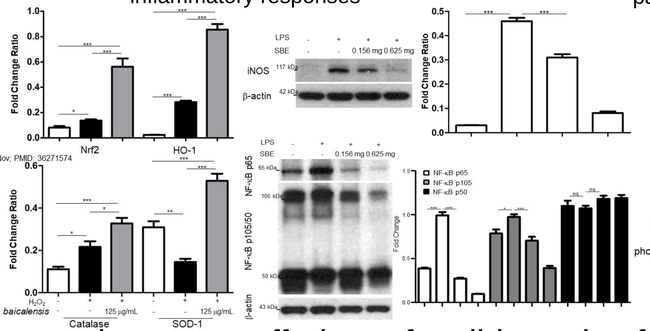
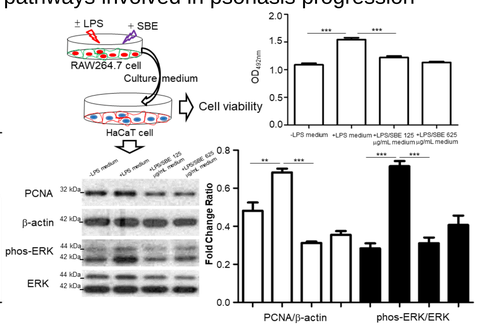
- Effects of *S. baicalensis* extract upon LPS-induced inflammatory responses



- Evaluation of the *S. baicalensis* extract mediated pathways involved in psoriasis progression



✓ Conclusion: Taken together, administration of *S. baicalensis* could rearrange the psoriatic microenvironment, offering a feasible and safe intervention for long-term psoriatic therapy.

Reference:
Wang PW., et al., Therapeutic efficacy of *Scutellaria baicalensis* Georgi against psoriasis-like lesions via regulating the responses of keratinocyte and macrophage. Biomed Pharmacother. 2022 Nov;155:113798. PMID: 36271574