Kav001 – A Candidate to Reduce Inflammation

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Background

Kav001is a Kavain analogue that we designed and synthesized to avoid kavain toxicity to mammalian cells. Previously we found that Kav001 inhibits production of the inflammatory cytokine TNF-a.

We hypothesize that Kav001 may mediate a novel link that may be targeted as a key inhibitor to LPS-induced inflammation/inflammatory disease.

Aim

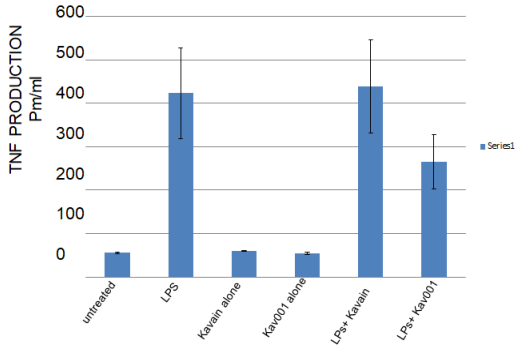
To determine factors involved in Kav001-mediated signaling pathway in response to LPS in macrophage cells.

Materials and Methods

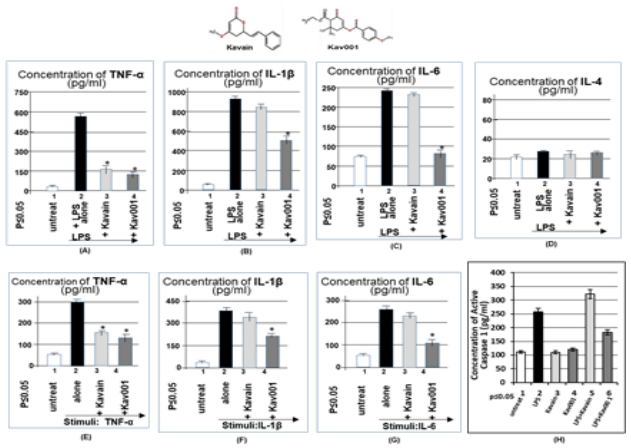
- RAW cells, THP-1 cells, and wild-type mice.
- Compounds: Commercial Kavain and custom synthesized analogue Kav001
- ELISA to determine TNF-a, IL-1, IL-1β, IL-6.
- Neutrophil infiltration assay
- Cytometry profiling assay

Results

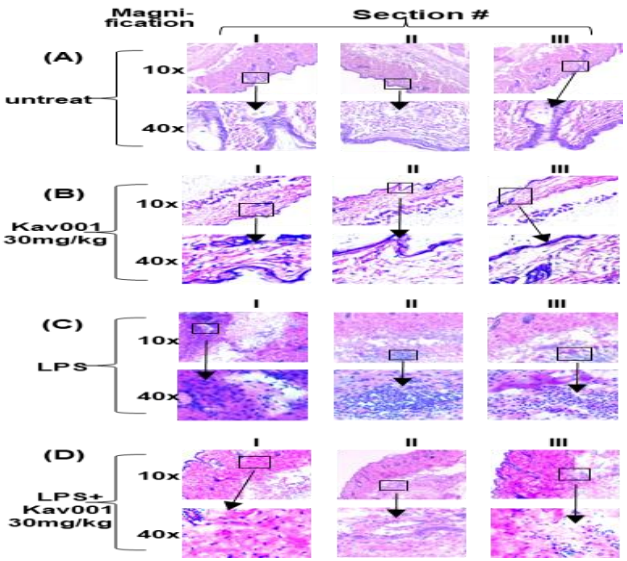
Kav001 inhibits LPS-induced TNF-α production



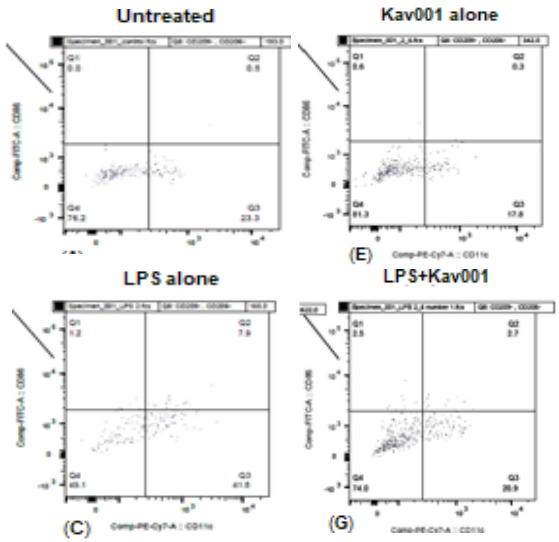
Kav001 inhibits the production of cytokines induced by various stimuli such as TNF-α, IL-1β, or IL-6 but not IL-4

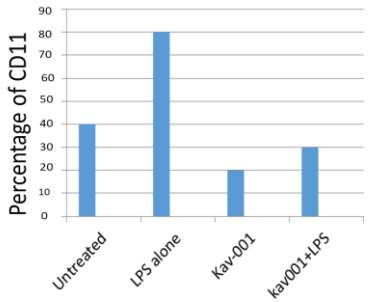


Treatment of mice with Kav001 significantly decreases LPS-induced Neutrophil infiltration



Discrimination of M1 BMM via CD11b flow cytometry profiling assay.





Conclusion

1. Kav001 Inhibits LPS-induced cytokine production and neutrophil infiltration.
2. Kav001 affects macrophages M1 via regulation of factor such as CD11.