# ABSTRAK

## *REVIEW*: AKTIVITAS IMUNOMODULATOR DAN ANTIINFLAMASI DARI EKSTRAK SAMBILOTO (*Andrographis paniculata* (Burm. f.) Nees) DAN ISOLAT ANDROGRAPHOLIDE

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**Latar belakang:** Sambiloto (*Andrographis paniculata* (Burm. f.) Nees) telah terbukti memiliki berbagai aktivitas farmakologi. Penelitian ini bertujuan untuk mengetahui aktivitas imunomodulator dan antiinflamasi pada ekstrak sambiloto dan isolat andrographolide, sehingga berpotensi sebagai obat.

**Metodologi:** Penelitiaan non eksperimental ini menggunakan desain penelitian literatur *review* terhadap 19 artikel. Pencarian literatur secara elektronik menggunakan PubMed, ScienceDirect, dan Google Scholar. Penentuan literatur berdasarkan kriteria inklusi dan eksklusi. Proses literatur *review* terdiri dari identifikasi, seleksi, eligibilitas, dan inklusi. Data aktivitas farmakologi sambiloto dianalisis secara deskriptif kualitatif dalam bentuk tabel.

**Hasil Penelitian:** Hasil penelitian menunjukkan bahwa ekstrak, fraksi maupun filtrat sambiloto serta senyawa aktif andrographolide dan turunannya terbukti memiliki aktivitas sebagai imunomodulator dan antiinflamasi pada studi *in vitro* dan *in vivo* dengan menurunkan sitokin dan kemokin proinflamasi serta meningkatkan aktivitas fagositosis dan sel limfosit T.

**Kesimpulan:** Inflamasi merupakan respon cepat tubuh ketika terjadi kerusakan, sehingga mengeluarkan sitokin. Sitokin berperan membawa sinyal regulasi imunitas bawaan maupun adaptif untuk melawan patogen. Ekstrak sambiloto (*Andrographis paniculata* (Burm. f.) Nees) dan isolat andrographolide diketahui dapat menyeimbangkan antara sitokin proinflamasi dan sitokin antiinflamasi, sehingga berperan sebagai imunomodulator dan antiinflamasi.

**Kata kunci:** *Andrographis paniculata* (Burm. f.) Nees, andrographolide, imunomodulator, antiinflamasi

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# ABSTRACT


## *REVIEW*: IMUNOMODULATOR AND ANTIINFLAMATION ACTIVITIES FROM SAMBILOTO EXTRACT (*Andrographis paniculata* (Burm. F.) Nees) AND ANDROGRAPHOLIDE ISOLATE

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**Background:** Sambiloto (*Andrographis paniculata* (Burm. F.) Nees) has been shown to have various pharmacological activities. This study aims to determine the immunomodulatory and anti-inflammatory activity of sambiloto extract and andrographolide isolate, so that they have potential as medicine.

**Methodology:** This non-experimental study used a literaturestudy design *review* of 19 articles. Search for literature electronically using PubMed, ScienceDirect, and Google Scholar. Determination of literature based on inclusion and exclusion criteria. The literatureprocess *review* consists of identification, selection, eligibility, and inclusion. Sambiloto pharmacological activity data were analyzed descriptively qualitatively in tabular form.

**Results:** The results showed that the extract, fraction and filtrate of sambiloto as well as the active compound andrographolide and its derivatives were proven to have immunomodulatory and anti-inflammatory *activity in in vitro* and *in vivo studies* by reducing proinflammatory cytokines and chemokines and increasing phagocytosis activity and T lymphocyte cells.

**Conclusion:** Inflammation is the body's quick response to damage, thereby releasing cytokines. Cytokines play a role in carrying signals of innate and adaptive regulation of immunity to fight pathogens. Sambiloto extract (*Andrographis paniculata* (Burm. F.) Nees) and andrographolide isolate are known to balance pro-inflammatory cytokines and anti-inflammatory cytokines, thus acting as immunomodulators and anti-inflammatory.



**Key words:** *Andrographis paniculata* (Burm. f.) Nees, andrographolide, immunomodulator, anti-inflammatory



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