

## Uji efikasi sampo yang mengandung Selenium Sulfida 1% dan Zinc Pyrithione 1% terhadap *Malassezia globosa* secara in vitro = Efficacy test of 1% Selenium Sulfide and 1% Zinc Pyrithione shampoo against *Malassezia globosa* in vitro

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### Abstrak

Ketombe (*Pityriasis capitis*) adalah pengelupasan korneosit lebih cepat dan berlebihan di kulit kepala, tampak sebagai serpihan kecil berwarna putih.<sup>6</sup> Penyebab adalah jamur *Malassezia* sp, aktivitas kelenjar sebacea, dan kerentanan individu. Cara menanggulangi dengan menurunkan produksi sebum dan jumlah jamur penyebab.<sup>5-6</sup> Sampo yang mengandung zinc pyrithione (ZPT) dan selenium sulfida (SeS<sub>2</sub>) berperan untuk membersihkan kulit kepala, menghambat pembelahan korneosit, menurunkan sebum dan membunuh jamur penyebabnya. Penelitian bertujuan untuk uji efikasi sampo selenium sulfida 1% dan sampo zinc pyrithione 1% terhadap *Malassezia globosa* secara in vitro.

Metode eksperimental. Jenis sampo SeS<sub>2</sub> 1%, sampo ZPT 1%, dan sampo kombinasi SeS<sub>2</sub> 1% + ZPT 1%, dan Basis sampo dengan pengenceran 2X, 4X, dan 6X dengan waktu kontak 3 menit dan 5 menit selain itu akuades steril digunakan sebagai kontrol. Jamur yang diuji adalah *Malassezia globosa* (CBS 7966 ATCC 96807) dengan konsentrasi 3-5 x 10<sup>4</sup> sel/ml. Medium inokulasi adalah sabouraud dextrose agar (SDA) + minyak zaitun 2%. Biakan diinkubasi pada suhu kamar, selama 5 hari dan dihitung jumlah koloni jamur *M. globosa* yang tumbuh. Data dianalisis dengan uji Anova ( $p < 0,05$ ) dan uji Fisher's LSD ( $p < 0,05$ ).

Hasil penelitian uji efikasi sampo SeS<sub>2</sub> 1%, ZPT 1% dan kombinasi SeS<sub>2</sub> 1% + ZPT 1% menunjukkan jumlah koloni *M. globosa* yang lebih rendah dibanding jumlah koloni *M. globosa* yang dikontakkan dengan basis sampo maupun akuades steril. Secara statistik hasil ini menunjukkan perbedaan yang sangat bermakna ( $P = 0,000$ ). Pada sampo SeS<sub>2</sub> 1%, sampo ZPT 1% dan sampo kombinasi SeS<sub>2</sub> 1% + ZPT 1% dengan pengenceran 2X, 4X, dan 6X jumlah koloni yang tumbuh tidak menunjukkan perbedaan yang bermakna, hasil yang sama diperoleh pada waktu kontak yaitu 3 menit dan 5 menit yaitu tidak menunjukkan perbedaan bermakna.

Secara in vitro sampo SeS<sub>2</sub> 1%, ZPT 1% dan kombinasi SeS<sub>2</sub> 1% + ZPT 1% mempunyai daya hambat yang sangat kuat terhadap *M. globosa* baik pada pengenceran 2X, 4X, dan 6X maupun pada waktu kontak 3 menit dan 5 menit.

<hr>Dandruff (*Pityriasis capitis*) is the excessive flaking of the scalp epithel, appear as white flakes. *Malassezia* sp has been known as a causatif agent of dandruff. 5 One of the method to treat dandruff is reduce the production of sebum, and the number of fungi.<sup>5-6</sup> Shampoo containing zinc pyrithion (ZPT) and selenium sulfide (SeS<sub>2</sub>) is known as an anti-dandruff shampoo. Despite the widely usage of this shampoo, its effectiveness against the fungi In Vitro has not been known. The aim of this study is determine the efficacy of shampoo containing selenium sulfide and zinc pyrithion against *Malassezia globosa* In Vitro.

The method of this study was experimental. Three types of shampoo were tested (Shampoo containing 1% SeS<sub>2</sub>, shampoo containing 1% ZPT, shampoo containing combination of 1% SeS<sub>2</sub> and 1% ZPT), Basic shampoo with three dilution level (two times, four times and six times) and two level of contact time (3 minutes and 5 minutes), and sterile distilled water were used as control. The sample was *Malassezia globosa* (CBS 7966 ATCC 96807) with a concentration of 3-5 x 10<sup>4</sup> cells/ml. We used sabouraud dextrose agar (SDA) and 2% olive oil as a medium. Inoculated cultures were incubated at room temperature and observed for 5 days. Then the number of *M. globosa* colonies were counted. Data were analyzed using ANOVA test ( $p < 0.05$ ) and Fisher's LSD test ( $p < 0.05$ ).

The results showed that the number of colonies of *M. globosa* that have been contacted with the shampoo containing 1% SeS<sub>2</sub>, the shampoo containing 1% Zinc Pyrithion and the shampoo containing combination of 1% SeS<sub>2</sub> and 1% ZPT have a strong inhibitory to *M. globosa* than control. This result showed statistically significant ( $P = 0.000$ ). There is no significant within the shampoo containing SeS<sub>2</sub> 1%, the shampoo containing 1% ZPT and the shampoo containing combination of 1% SeS<sub>2</sub> and 1% ZPT in all level of dilution. The contact time also did not show any statistical significant.

**Conclusion:** Shampoo containing 1% SeS<sub>2</sub>, shampoo containing 1% ZPT, and shampoo containing combination of both have strong inhibition to *M. globosa* In Vitro in all dilution level and contact time.