

Decreased expression of caspase3 in penis and prostate tissues of rat after the treatment with buceng (*Pimpinella alpina* Molk & *Eurycoma longifolia* Jack)

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Abstrak

Latar belakang: Buceng {kombinasi pasak bumi (*Eurycoma longifolia* Jack) dan purwoceng (*Pimpinella alpina* Molk)} telah terbukti meningkatkan kadar testosteron (Te) dan menurunkan apoptosis. Namun belum ada bukti apakah efek tersebut dimediasi oleh penurunan ekspresi caspase3. Tujuan penelitian ini adalah untuk mempelajari apakah pemberian buceng dapat menurunkan ekspresi caspase3 sel penis dan prostat pada tikus jantan Sprague Dawley. Metode: Studi eksperimental dilakukan pada 24 tikus jantan galur Sprague Dawley, umur 90 hari dengan berat badan (BB) + 300 g, dibagi menjadi 4 kelompok secara acak masing-masing terdiri dari 6 ekor. Kelompok A, tikus dikastrasi dan diberi buceng 50 mg. Kelompok B, tikus tanpa dikastrasi, langsung dimatikan sebagai kontrol positif. Kelompok C, tikus dikastrasi dan diberi akuades 2 mL, sebagai kontrol negatif. Kelompok D, tikus dikastrasi dan diberi mesterolone 6,75 mg yang dilarutkan dalam air. Analisis statistik yang digunakan untuk menguji perbedaan ekspresi caspase3 adalah uji MANOVA, dilanjutkan dengan Post Hoc.

Hasil: Analisis MANOVA pada empat kelompok menunjukkan perbedaan ekspresi caspase3 yang bermakna ($p = 0,000$). Analisis tes Post Hoc menunjukkan bahwa ekspresi caspase3 penis dan prostat pada kelompok A (buceng) (33,56; 35,83) lebih rendah bermakna dibanding kelompok C (kontrol negatif) (54,33; 60,07) dan kelompok D (mesterolone) (51,91; 56,21), $p = 0,000$, dan lebih tinggi dibanding kelompok B (kontrol positif atau tikus normal) (29,40; 27,72), namun secara statistik tidak bermakna ($p = 0,826$).

Kesimpulan: Pemberian buceng 50 mg/hari selama 30 hari berturut-turut dapat menurunkan ekspresi caspase3 pada sel penis dan prostat.

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Abstract

Background: Buceng {combination of pasak bumi (*Eurycoma longifolia* Jack) and purwoceng (*Pimpinella alpina* Molk)} has been proven to increase testosterone (Te) level and decrease apoptosis. Unfortunately, there is no evidence whether these effects are mediated by the declining of caspase3. Objective of this study was to evaluate whether buceng could decrease the expression of caspase3 of penis and prostate cells in Sprague Dawley male rats.

Methods: Twenty four Sprague Dawley male rats weighing 300 g (90 days old) were randomly assigned into 4 groups of 6 male rats. Group A, rats were castrated and received buceng 50 mg. Group B, rats were not castrated, sacrifices as positive control. Group C, rats were castrated and given 2 mL aquadest as negative control. Group D, rats were castrated and got of 6.75 mg mesterolone, dissolved in 2 mL water. MANOVA statistical analysis was adopted to examine the difference expression of caspase3 in all groups. The comparison of caspase3 expression between two groups exhibiting difference values were evaluated by Post Hoc test.

Results: MANOVA revealed statistically significant differences in the expression of caspase3 of penis and prostate tissues among the four groups. Post Hoc test also indicated that expression of caspase3 in group A

(buceng) (33.56; 35.83) was significantly lower compared to group C (negative control) (54.33; 60.07) and group D (mesterolone) (51.91;56.21), $p = 0.000$, and higher compared than group B or normal rats (29.40; 27.72), but statistically not significant ($p = 0.826$).

Conclusion: The treatment of 50 mg buceng/day for 30 consecutive days could decrease caspase3 expression in penis and prostate cells.