Potensi Dadih yang Mengandung Lactococcus lactis subsp. lactis sebagai Antiinflamasi pada Peradangan Kolon Mencit Balb/c yang Diinduksi Dextran Sulfat Sodium = The Potency of Dadih Containing Lactococcus lactis subsp. lactis as An Anti-Inflammatory in Balb/c Mice with Colon Inflammation Induced by Dextran Sodium Sulfate.

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Abstrak

ABSTRAK
Peradangan kronik saluran cerna seperti Inflammatory Bowel Disease (IBD) berisiko menjadi karsinoma kolorektal, disebabkan oleh ketidakseimbangan mikrobiota komensal dan patogen. Dadih sebagai probiotik dapat mempertahankan keseimbangan mikrobiota usus sehingga mengurangi risiko radang usus. Untuk melihat keefektifan probiotik susu kerbau hasil fermentasi lokal berasal dari Sumatera Barat yang mengandung Bakteri Asam Laktat, dilakukan penelitian menggunakan hewan coba. Desain penelitian eksperimental menggunakan 4 kelompok mencit Balb/c terdiri dari 6 ekor per kelompok yakni, kelompok normal diberi aquades 8 minggu, kelompok (+) dadih diberi dadih 8 minggu (112 mg/20g/BB), kelompok (+) DSS mencit diberi DSS konsentrasi 3% sebanyak 3 siklus 6 minggu, serta kelompok uji diberi dadih 8 minggu dan DSS sebanyak 3 siklus. Mencit kemudian di-euthanasia dan diambil darah intrakardiak. Kadar sitokin TNF-alpha, IL-1 dan IL-10 diperiksa menggunakan Luminex dari serum. Dadih yang digunakan mengandung bakteri Lactococcus lactis subsp. lactis sebanyak 3x107 CFU/gram. Ada beda signifikan kadar TNF-alpha (p=0,033) dan IL-1 (p=0,007) antar kelompok namun tidak terdapat perbedaan signifikan IL-10 antar kelompok (p=0,091). Serta, ada beda signifikan kadar sitokin TNF-alpha mencit diberi dadih dan DSS dengan median kadar sitokin 26,641 (16,027-35,206) lebih rendah dibandingkan mencit yang hanya diberi DSS 41,220 (36,226-101,920) namun, median kadar sitokin IL-10 lebih tinggi sebesar 109,951 (92,621-130,436) dibandingkan mencit DSS sebesar 85,164 (57,292-111,548) serta tidak terdapat perbedaan signifikan untuk IL-1. Dadih sebagai probiotik dapat meningkatkan kadar sitokin anti-inflamasi dan menurunkan sitokin pro-inflamasi dalam keadaan radang. Sehingga dapat disimpulkan bahwa dadih dapat digunakan untuk mencegah terjadinya peradangan usus.
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ABSTRACT
Chronic inflammation in the gastrointestinal tract, such as Inflammatory Bowel Disease (IBD), is a risk factor for colorectal cancer (CRC) causes the imbalance between commensal and pathogen microbiota in the intestine. Dadih could improve the balance between commensal and pathogen bacteria, and also between pro-inflammatory and anti-inflammatory responses. Aim of this research is to see the effectiveness of probiotic made from locally fermented buffalo milk originating from West Sumatra using animal model. This in vivo experimental research used 4 groups of Balb/c mice consisted of 6 mice per group there are normal group mice indued by aquades for 8 weeks, DSS(+) group mice induced by dadih for 8 weeks with doses 112mg/20g/BB, DSS(+) group mice induced DSS with concentration 3% as much as 3 cycle for 6 weeks and the last treatment group mice induced dadih for 8 weeks and DSS dor 6 weeks. The further more, mice doing euthanasia and taking blood to get the serum. Serum will be using for cytokine investigation

consist of TNF-alpha, IL-1 and IL-10 with Luminex. The results showed dadih contained Lactococcus lactis ssp. lactis with 3x107 CFU/gram. The significant differences in TNF-alpha and IL-1 level with p = 0,033 and 0.007 respectively. However, there was no significant difference in IL-10 (p = 0.091). A further test was conducted to see the differences between groups the results showed that there were significant differences in TNF-alpha mice induced dadih+DSS group has median cytokine lower than DSS group equal to 26,641 (16,027-35,206) than 41,220 (36,226-101,920) but IL-10 cytokine dadih+DSS group has higher median cytokine 109,951 (92,621-130,436) than DSS group has 85,164 (57,292-111,548), but was no significant different at IL-1 cytokine. This research showed that dadih could enhance anti-inflammatory cytokines and suppress pro-inflammatory cytokines. Therefore, as locally made probiotic, dadih could be used to prevent intestinal inflammation.