

## INTISARI

### PENGARUH PEMBERIAN SYNBIOTIC SHAKE YANG MENGANDUNG LACTOBACILLUS ACIDOPHILUS (LA-5) DAN PREBIOTIK TERHADAP KADAR MALONDIALDEHID (MDA) PADA MODEL TIKUS WISTAR HIPERGLIKEMIA

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**Latar Belakang:** Hiperglikemia kronik erat kaitannya dengan penyakit diabetes mellitus (DM). Penyebab utama kematian pada penyandang DM tipe 2 yaitu komplikasi kardiovaskular yang ditandai dengan stress oksidatif. Oleh karena itu diperlukan terapi diet sebagai pencegahan sekunder komplikasi kardiovaskular pada penyandang hiperglikemia kronik, sehingga penelitian mengenai efek *synbiotic shake* terhadap kadar malondialdehid (MDA) pada model tikus hiperglikemia perlu dilakukan.

**Tujuan Penelitian:** Membandingkan produk pangan fungsional berupa *synbiotic shake* yang mengandung *Lactobacillus acidophilus* (LA-5) dengan variasi prebiotik sebagai salah satu ko-terapi pada model tikus Wistar hiperglikemia.

**Metode:** Penelitian ini menggunakan metode quasi eksperimental, rancangan penelitian *pre-post test* dengan *control design*. Pemberian intervensi berupa *synbiotic shake* dilakukan selama 28 hari pada model tikus Wistar Jantan hiperglikemia yang diinduksi dengan STZ-Na. Tikus dibagi menjadi 5 kelompok yaitu kelompok sehat (KS) tanpa induksi dan tanpa intervensi, kelompok negatif (KN) diinduksi serta diberi aquadest, kelompok positif (KP) diinduksi serta diberi metformin, kelompok 1 (K1) diinduksi serta diberi *synbiotic shake* berisi *Lactobacillus acidophilus* (LA-5) dan FOS, dan kelompok 2 (K2) diinduksi serta diberi *synbiotic shake* berisi *Lactobacillus acidophilus* (LA-5) dan inulin.

**Hasil:** Tidak terdapat perbedaan signifikan kadar malondialdehid (MDA) sebelum dan sesudah intervensi pada seluruh kelompok (KS, KN, KP, K1 dan K2) dengan nilai  $p > 0,05$ . Pada kelompok KS ( $p=0,762$ ); KN ( $p=0,763$ ); KP ( $p=0,483$ ); K1 ( $p=0,817$ ); dan K2 ( $p=0,076$ ).

**Kesimpulan:** Pemberian *synbiotic shake* yang berisi *Lactobacillus acidophilus* (LA-5) dan FOS memiliki efek yang sama dengan *synbiotic shake* yang berisi *Lactobacillus acidophilus* (LA-5) dan inulin pada kadar malondialdehid (MDA) model tikus Wistar Jantan hiperglikemia.

**Kata Kunci:** Hiperglikemia, Malondialdehid (MDA), *Synbiotic shake*, *Lactobacillus acidophilus* (LA-5), Prebiotik

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**ABSTRACT**  
**THE EFFECT OF SYNBIOTIC SHAKE CONTAINING LACTOBACILLUS  
ACIDOPHILUS (LA-5) AND PREBIOTICS ON MALONDIALDEHYDE (MDA)  
LEVELS IN WISTAR HYPERGLYCEMIA RAT MODEL**

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**Background:** Chronic hyperglycemia closely related to diabetes mellitus (DM). The main cause of death in people with type 2 diabetes is cardiovascular complications characterized by oxidative stress. Therefore dietary therapy is needed as a secondary prevention of cardiovascular complications in people with chronic hyperglycemia, so research on the effects of synbiotic shakes in malondialdehyde (MDA) levels of hyperglycemic rats models is needed.

**Objective:** To comparing functional food products of synbiotic shakes containing *Lactobacillus acidophilus* (LA-5) with prebiotic variations as one of the co-therapies in Wistar hyperglycemic rat models.

**Methods:** This Study was quasi-experimental research with pre and post test control design, using male Wistar rats induced hyperglycemic with STZ-Na. Synbiotic shakes were administered for 28 days. Samples were divided into 5 groups, healthy groups (KS) without induction and intervention, negative groups (KN) were induced and given aquadest, positive groups (KP) were induced and were given metformin, group 1 (K1) was induced and given synbiotic shake containing *Lactobacillus acidophilus* (LA-5) and FOS, and group 2 (K2) was induced and given a synbiotic shake containing *Lactobacillus acidophilus* (LA-5) and inulin.

**Results:** There were no significant differences of malondialdehyde (MDA) levels before and after intervention in all groups (KS, KN, KP, K1 and K2) with p values > 0.05. The values KS group (p = 0.762); KN (p = 0.763); KP (p = 0.483); K1 (p = 0.817); and K2 (p = 0.076).

**Keywords:** Hyperglycemia, Malondialdehyde (MDA), Synbiotic shake, *Lactobacillus acidophilus* (LA-5), Prebiotics

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