ABSTRAK

Soygurt merupajan produk inovasi dari yogurt yang berasal dari bahan dasar susu kedelai. Padahal berbagai penelitian lain mengenai bakteri asam laktat dari produk fermentasi lainnya telah melaporkan aktifitas antidiabetik dengan pendekatan *in vivo* melalui inhibisi enzim α-glucosidase. Oleh karena itu, menjadi penting untuk mengeksplorasi efek antidiabetik dari soygurt secara *in vitro* melalui analisa aktifitas inhibisi enzim α-glucosidase, dimana pada beberapa produk fermentasi lain telah dilaporkan memiliki aktifitas inhibisi enzim α-glucosidase serta efek farmakologis lain yang mungkin dimiliki oleh bakteri asam laktat seperti antibakteri maupun antioksidan. Penelitian ini merupakan penelitian eksperimental yang dilakukan dengan pendekatan *in vivo*. Aktifitas antibakteri dari isolate bakteri asam laktat dari soygurt dievaluasi dengan metode difusi cakram terhadap bakteri asam laktat, sementara itu untuk evaluasi aktifitas antioksidan dan inhibisi enzim α-glucosidase dilakukan dari sampel *cell free supernatant* bakteri asam laktat melalui pemeriksan spektroskopik. Hasil hitung jumlah bakteri asam laktat pada soygurt dengan starter yogurt *Lactobacillus acidophilic* 5% sebesar 8.00 x 10^4 CFU/ ml dan hitung jumlah bakteri asam laktat pada soygurt dengan starter yakult sebesar 5.00 x 10^7 CFU/ ml. Isolate bakteri asam laktat dari soygurt dengan starter *Lactobacillus acidophilic* 5% tidak menunjukkan aktifitas antibakteri terhadap bakteri *Staphylococcus aureus* dengan metode difusi cakram. Namun, isolate bakteri asam laktat ini memiliki aktifitas antioksidan dan inhibisi enzim α-glucosidase. Hal ini tercermin dari persentase inhibisi DPPH yang berkisar dari 27.06%-58.63%. Sedangkan aktifitas inhibisi enzim α-glucosidase tercermin dari rata-rata persen inhibisi enzim α-glucosidase sebesar 50.55%. Oleh karena itu, dapat disimpulkan bahwa bakteri asam laktat yang terisolasi dari soygurt dengan starter yogurt *Lactobacillus acidophilic* 5% memiliki aktitfitas antioksidan dan antidiabetic.

Kata Kunci: DPPH, α-glucosidase, Soygurt, *Lactobacillus acidophilic*

ABSTRACT

Soygurt is an innovative product from yogurt which is fermented from soy milk. Whereas various other studies on lactic acid bacteria from other targeted products have reported anti-diabetic activity with an in vivo approach through inhibition of the α-glucosidase enzyme. Therefore, it becomes important to exploring the antidiabetic effect of soygurt in vitro by analyzing the activity of inhibition of the α-glucosidase enzyme, where several products have been reported to have inhibitory activity of the α-glucosidase enzyme as well as other pharmacological effects that may be possessed by acidic bacteria. lactate such as antibacterial and antioxidant. This research is experimental study, that was performed by an in vivo approach. Antibacterial activity of lactic acid bacteria isolates from soygurt was evaluated using the disc diffusion method, meanwhile the evaluation of antioxidant activity and inhibition of α-glucosidase enzymes was evaluated from cell free supernatants of lactic acid bacteria isolate by spectroscopic methods. The results of enumeration of lactic acid bacteria in soygurt with 5% Lactobacillus acidophilic yogurt starter were 8.00 x 104 CFU/ml and enumeration of lactic acid bacteria in soygurt with yakult starter was 5.00 x 107 CFU/ml. Lactic acid bacteria isolates from soygurt with 5% Lactobacillus acidophilic starter did not show any antibacterial activities against Staphylococcus aureus bacteria by the disc diffusion method. However, this lactic acid bacteria isolate had antioxidant activity and inhibited the α-glucosidase enzyme. It was showed by the percent of DPPH inhibition which ranges from 27.06%-58.63%. Meanwhile, the average of inhibitory activity of the α-glucosidase enzyme was 50.55%. Therefore, it can be concluded that lactic acid bacteria isolated from soygurt with 5% Lactobacillus acidophilic yogurt starter have antioxidant and antidiabetic activity.

Keywords: DPPH, α-glucosidase, Soygurt, Lactobacillus acidophilic