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Aktivitas antifibrosis ekstrak turbinaria decuren terkarakterisasi melalui penghambatan TGF1, smad3 dan mmp13 serta pengaruh terhadap aktivitas decorin pada hati tikus yang diinduksi ccl4 = Antifibrotic activities of turbinaria decuren extract characterized by inhibiting tgf 1 smad3 mmp13 and the effect on the activity of decorin in rat liver induced ccl

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Abstrak

ABSTRAK
Pendahuluan: Fibrosis hati yang diakibatkan oleh stres oksidatif ROS dan transformasifaktor pertumbuhan beta 1 TGF?-1 menjadi salah satu target dalam pencegahan danpengobatan fibrosis hati. Rumput laut coklat Turbinaria decuren diketahui mengandungfukoidan yang bersifat ionik memiliki bioaktivitas berdasarkan spesies dan berat molekulnamun belum diteliti secara intensif. Penelitian ini dilakukan dengan tujuan membuktikanefek antifibrosis ekstrak T. decuren terkarakterisasi eTkar melalui penghambatan aktivitasTGF-?1, MMP 13 dan Smad3 serta pengaruhnya terhadap decorin.

Metode: Penelitian dilakukan di Labkesda Provinsi DKI Jakarta, Laboratorium HistologiFKUI, Laboratorium Farmakologi FKUI dan Laboratorium Terpadu FKUI. EkstrakT.decuren terkarakterisasi eTkar hasil penelitian tahap I akan diuji efeknya sebagaiantifibrosis melalui mekanisme preventif dan kuratif pada tikus jantan galur Sprague Dawley SD yang diinduksi dengan CCl4. 50 dosis 1 ml/100 gram BB dua kali seminggselama 8 minggu. Enam puluh duatikus jantan galur SD dibagi 2 kelompok uji yaitu A: ujipreventif dan B: uji kuratif, masing-masing dibagi menjadi 7 kelompok perlakuan secaraacak. eTkar diberikan pada dosis 27,5, 55, 110 mg/kg BB p.o. Pada uji preventif eTkardiberikan 1 minggu sebelum dan 7 minggu bersamaan pemberian CCl4.. Pada pengujian kuratif diberikan CCl4 selama 2 minggu dan 6 minggu secara bersamaan dengan sampel uji.Pemeriksaan yang dilakukan: ALT, AST, ALP, GGT, MDA, GSH, protein total, TGF?-1,Smad3, MMP 13, decorin dan pemeriksaan histopatologi jaringan hati. Sebagaipembanding positif digunakan fukoidan 50 mg/Kg BB.

Hasil: Pada uji preventif dosis eTkar yang mampu menekan luas fibrosis hati tertinggiadalah 27,5 mg/kg BB sebesar 69,89 lebih tinggi dari fukoidan dan berbeda bermaknadengan kontrol - . Pada dosis ini juga mampu menekan secara bermakna aktivitas TGF?1,MMP 13, ekspresi Smad3, decorin dan meningkatkan kadar GSH secara bermaknadibanding kontrol - , tetapi tidak bermakna untuk MDA. Pada uji kuratif, eTkar dosis 55mg/Kg BB mampu menekan persentase luas fibrosis hati sebesar 62,05 yang berbedabermakna dibanding kontrol - p
<hr /><i>ABSTRACT
Introduction. Liver fibrosis due to oxidative stress ROS and transforming growth factor beta 1 TGF 1 became one of the targets in the prevention and treatment of liver fibrosis. The brown seaweed T.decurens fucoidan containing ionic compounds have a potent bioactive potentials, which depends on species and molecular weight. but still unknown mechanism of action in inhibiting liver fibrosis. This study was

conducted in order to prove the effect of the extract antifibrosis characterized by constraints on the expression of protein TGF 1, Smad3 and its effect on protein MMP 13 and decorin.

Method: The study was conducted in Labkesda DKI Jakarta province, Histology Laboratory, Pharmacology Laboratory and Integrated Laboratory School of Medicine FKUI. Characterized extracts brown seaweed T.decuren eTkar of the results of the phase I study was studied to investigate their effect as antifibrosis in animal model of fibrosis through preventive and curative mechanism on male rats Sprague Dawley SD induced by CCl by 50 CCl ndash 1 mL kg BW twice a week for 8 weeks p.o. Sixty two male rats SD divided into 2 groups, namely A test test preventive and B test curative. Each divided into 7 treatment groups at random. eTkar was given a three level doses, i.e 27,5, 55, 110 mg kg BW p.o. At preventive mechanism, eTkar was delivered for 1 week before and 7 weeks of concurrent CCl 4 administration. On curative mechanism, eTkar was delivered the last 6 weeks for 8 weeks CCl 4 adminstration simulaneously. The test parameters were biomarkers of liver injury ALT, AST, MDA and GSH liver , liver function ALP, GGT and albumin , 4 the degree of fibrosis fibrosis area, TGF 1 and MMP 13 activities, Smad and decorin expression, fatty area hispatologically . Fucoidan was used as positive control at the dose of 50 mg Kg BW.

Results: In the preventive method, the optimum dose of eTkar capable to suppress liver fibrosis was 27,5 mg kg BW by 69,89 of CCl group which was better than comercial fucoidan and significanly different. At this dose eTkar was able to significanly suppress the 4 activity TGF 1, MMP 13, expression Smad3 decorin and increase GSH level significanly different to group p.</i>