solvent, and water, and subjecting the homogenous mixture to an enzymatic hydrolysis with lipase to obtain a hydrolysate, and wherein the hydrolysate comprises fatty acids, sn-regio mono-acylglycerol (MAG), sn-regio diacyl-glycerols (DAG), and glycerol.

There is also provided a process for production of fatty acids and glycerol comprising subjecting said hydrolysate of claim 1 with an ion exchange resin followed by another enzymatic hydrolysis with lipase to obtain a mixture, wherein the mixture comprises fatty acids and glycerol, and wherein said mixture has less than 5% mono-acylglycerol (MAG).

Also, there is provided a process for production of fatty acids, sn-regio mono-acylglycerol (MAG), sn-regio diacyl-glycerols (DAG), and glycerol, wherein the process comprises: preparing a homogeneous mixture of fat, polar organic solvent, and water; subjecting the homogenous mixture to an enzymatic hydrolysis with lipase to obtain a hydrolysate, and wherein the hydrolysate comprises fatty acids, MAG, DAG, and glycerol; and processing the hydrolysate using an ion exchange resin followed by another enzymatic hydrolysis with lipase to obtain a mixture, wherein the mixture comprises fatty acids and glycerol, and wherein the mixture has less than 5% mono-acylglycerol (MAG).

BRIEF DESCRIPTION OF ACCOMPANYING DRAWINGS

The following drawings form part of the present specification and are included to further illustrate aspects of the present invention. The invention may be better understood by reference to the drawings in combination with the detailed description of the specific embodiments presented herein.

Figure 1 shows the hydrolysis of castor oil with different lipases in homogenous media.

Figure 2 shows the ternary phase diagram of castor oil, t-butanol and water.

Figure 3 shows the free fatty acid conversion (%) obtained after 6hrs under batch conditions using HypLIP (immobilized *Thermomyces langinousa* lipase) without solvent and in different polar organic solvents.

Figure 4 shows the scheme for semi-continuous process for oil hydrolysis.

Figure 5 shows the scheme of continuous process for production of diacylglycerol and fatty acids.

Figure 6 shows the process for production of sn-2 monoglycerides and fatty acids.

9. The process as claimed in claim 8, wherein the lipase is immobilized on a support, wherein the base material of the support is selected from the group consisting of co-polymer of polystyrene and divinyl benzene, polyacrylic, polystyrene, and polymethacrylate.

10. The process as claimed in claim 2, wherein said ion exchange resin is a strongly acidic cation exchange resin.

~~11. The process as claimed in claim 10, wherein said ion exchange resin is selected from the group consisting of sulphonated polymeric resins, Indion130, Indion140, Indion190, Indion770, DIAION(R) SK1B, DIAION(R) SK104, DIAION(R) SK110, DIAION(R) SK112, DIAION(R) SK116, DIAION(R) PK208, DIAION(R) PHK212, DIAION(R) PK216, DIAION(R) PK220, DIAION(R) PK228, and DIAION(R) HPK25.~~

~~12.~~11. The process as claimed in claim 1, wherein said enzymatic hydrolysis with lipase is carried out at a temperature ranging from 30°C to 80°C.

~~13.~~12. The process as claimed in claim ~~12~~11, wherein the enzymatic hydrolysis with lipase is carried out at a temperature ranging from 50 to 65°C, preferably 60°C.

~~14.~~13. The process as claimed in claim 1, wherein said process results in more than 99% conversion of said fat to fatty acids, sn-regio mono-acylglycerol (MAG), sn-regio diacyl-glycerols (DAG) and glycerol.

~~15.~~14. The process as claimed in claim 1, wherein said homogenous mixture comprises fat, a polar organic solvent and water in the ratio of 1:4:0.15 to 1:7:0.5.

~~16.~~15. The process as claimed in claim 1, wherein the ratio of said fat to polar organic solvent is in the range of 1:4 to 1:7.

~~17.~~16. The process as claimed in claim 1, wherein the ratio of said fat to water, is 1:0.15 to1: 0.5.

~~18.~~17. The process as claimed in claim 1, wherein said enzymatic hydrolysis with lipase is carried out either in a batch reactor, continuous reactor or a semi-continuous reactor.

~~19.~~18. The process as claimed in claim 1, wherein said enzymatic hydrolysis with lipase is carried out in a continuous reactor with a residence time of 10 to 60 minutes.

~~20.~~19. The process as claimed in claim 2, wherein said enzymatic hydrolysis with lipase is carried out in a continuous reactor with a residence time of 10 to 150 minutes.

~~21.~~20. The process as claimed in claim 1, wherein said enzymatic hydrolysis with lipase is carried out in a batch or semi-continuous reactor with a residence time of 0.5 hour to 2 hours.

~~22.~~21. The process as claimed in claim 2, wherein said enzymatic hydrolysis with lipase is carried out in a batch or semi-continuous reactor with a residence time of 0.5 hour to 24 hours.

~~23.~~22. A process for production of fatty acids, sn-regio mono-acylglycerol (MAG), sn-regio diacyl-glycerols (DAG), and glycerol, wherein said process comprises:

preparing a homogeneous mixture of fat, polar organic solvent, and water;

subjecting said homogenous mixture to an enzymatic hydrolysis with lipase to obtain a hydrolysate, and wherein the hydrolysate comprises fatty acids, MAG, DAG, and glycerol; and

processing said hydrolysate using an ion exchange resin followed by another enzymatic hydrolysis with lipase to obtain a mixture, wherein the mixture comprises fatty acids and glycerol, and wherein said mixture has less than 5% mono-acylglycerol (MAG).