

## SEQUENCE LISTING

<110> OrganoBalance GmbH

<120> Synthesis of polyunsaturated fatty acids in yeast

<130> P1022 EP S3

<160> 20

<170> PatentIn version 3.3

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<212> DNA

<213> Pichia pastoris

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<223> /note="description of artificial sequence: *Ostreococcus tauri*"

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<213> Artificial sequence

<220>

<221> source

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<220>

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 tggggacgat acgctcttat ctttgatcc ttgatcgctt cctactacgc gcagctcttt 420  
 gtgcctttcg ttgtcgaacg cacatggctt cagggtggtg ttgcaatcat catgggattt 480  
 gcgtgcgcac aagtcggact caaccctctt catgatcgt ctacttttc agtgaccac 540  
 aacccactg tctggaagat tctgggagcc acgcacgact ttttcaacgg agcatcgtac 600

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tttgtcaacc acatcaacca gcacatgttt gttcctttcc tgtacggact gctggcgttc 780
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<210> 12
<211> 1341
<212> DNA
<213> Artificial sequence

<220>
<221> source
<223> /note="description of artificial sequence: Mortierella alpina"

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catcctgggtg gcgttgatac gttattgcta ggagcaggaa gagacgttac accagtcttt 180
gagatgtatc acgcttttgg tgcagccgat gcaatcatga agaagtacta tgtaggcaca 240
ctagtttcca atgagttgcc aatttttccg gaaccaactg tattccacaa gactataaaa 300
acacgtgtag aaggatactt tacagaccgc aatattgatc cgaaaaatag gcctgaaatt 360
tggggtagat acgccttaat cttcggatcg ttgatagcct catactacgc tcaactcttt 420
gtgccttttg tcgtggaaaag aacctgggta caggtggttt tcgccataat catgggtttt 480
gcttgtgctc aagtaggtct aaatccattg catgatgcgt cacacttctc tgtaacccat 540
aaccacacgg tttggaaaat tcttggggca actcatgact tctttaacgg tgccagctat 600
ttagtctgga tgtatcagca catgcttggg catcatccat ataccaacat tgccggtgct 660
gatcctgatg tatctacgtc tgaaccagac gtaagaagga tcaaacccaa tcaaaagtgg 720

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ttcgttaacc acataaatca acacatgttc gttccatttt tgtatggctt acttgcattc 780
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tatcccgata ttttggcgat tattaagaac acttgctcgg agtaciaaagt gccttactta 1260
gtcaaagaca ccttttggca agcattcgct tcacatctag aacacctgag agttcttggt 1320
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<210> 13
<211> 1560
<212> DNA
<213> Thraustochytrium sp.

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<400> 13
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acttaccatg tgcggggcgt ctcgacgcg gtgctgcgca agtaccgcat cggcaagctg 240
ccggacggcc aaggcggcgc gaacgagaag gaaaagcggc cgctctcggg cctctcgtcg 300
gcctcgtact acacgtggaa cagcgacttt tacagggtaa tgcgcgagcg cgtcgtggct 360
cggtcaagg agcgcgggcaa ggcccggcg ggaggctacg agctctggat caaggcggtc 420
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caccatccgt acacgaacct gatcgaggag gagaacggcc tgcaaaaggt gagcggcaag 720
aagatggaca ccaagctggc cgaccaggag agcgatccgg acgtcttttc cacgtacccg 780
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aacaacacgc gcaaggaggt ggaggcggag gcgtccaagt ctggcgccgt ggtcaagtca     1260
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cccgggctca gccacgagac gtactaccac attcaggacg tctttcagtc cacctgcgcc     1440
gagtacggcg tcccgtagca gcacgagcct tcgctctgga ccgcgtactg gaagatgctc     1500
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<210> 14

<211> 1560

<212> DNA

<213> Artificial sequence

<220>

<221> source

<223> /note="description of artificial sequence: Thraustochytrium sp."

<400> 14

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catccagggg gtgacatcat actattagca gctggtaaag aagcgaccgt actatacgag     180
acgtaccatg tcaggggtgt ctctgatgcg gtactgagga aatacagaat aggcaagttg     240
cctgatggtc aaggcgggtgc taatgaaaag gaaaagcgca ctttatccgg attgtcatcg     300
gcttcgtact acacatggaa cagtgacttc tacagagtca tgagagaacg tgtggttgct     360
agacttaaag aaagagggaa agcacgaaga ggtggatatg agttatggat aaaggccttt     420
ttattgctgg ttggtttttg gtctagcttg tattggatgt gcacgttaga tccgtctttc     480
ggagccattc ttgcagccat gagcttaggt gtatttgctg cttttgttgg tacttgcata     540
cagcacgatg gtaatcatgg cgcttttgct caatctagat gggatgaaca agtggtggt      600
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caccatccat ataccaatth gattgaggaa gaaaatggct tgcagaagggt atctggcaaa     720
aagatggaca caaaactagc ggatcaggaa tctgatccag atgtgttttc cacttatccg     780
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ggtcccttca ttttcggatt catgacgatt aacaagggtt ttaccaaga ttaggtgtt 900  
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 gaagtcttag cgactatgtt catagttaat cacatcattg aagggtgttc gtatgcctca 1140  
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 gaatatggcg tcccatatca gcacgaacca tctttgtgga cagcctactg gaaaatgctg 1500  
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<210> 15

<211> 1353

<212> DNA

<213> *Mortierella alpia*

<400> 15

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 attcgagatg cgatccctgc ccacctcttc atccgtgata ccacaaagtc gatcctgcat 180  
 gtcgtcaagg atctggtcac catcgccatc gtcttttact gtgcaacctt cattgagact 240  
 ctgccctcgc tcgctctgcg agttcctgcc tggatcacct actggatcat ccaaggaact 300  
 gtcattggtc gccctggat cttgggtcat ggtaaggaaa cgaaaaatcc catgtgtatt 360  
 tctgtactac agaaggcgaa gtttgtacct gaaaagatca gcgtcgtccc ttgatttaga 420  
 atgtaactaa ccttgcaatc gtatgaccta aattttcttg tgtcaacgac agagtgcggc 480  
 cacggagctt tctcgatag caagacgatc aacaccatct ttggatgggt cctccactct 540  
 gctcttttgg tgccctacca ggctgggct atgtcacact ccaagcatca caagggtact 600  
 ggatcgatga ccaaagatgt cgttttcatc cctgccactc gttcctacaa gggcctccca 660  
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 gagtccatct ttgccgaaac tcccatctac acgctcggag cgcttttgtt cgtcttgacc 780  
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aaccatttcc agactgtcgc tcctctctat gagcctcacc agcgcaagaa catcttctac    900
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cccttgactg tcttcatgta ctatggcatc ccttacctcg gagtcaacgc ctggatcgtc    1020
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tacaatgctg tggaggctac aaagtacttg aaggccaaac ttggcaagta ctacatattt    1260
gacgacacgc ccattgccaa agccctctac cgcaattgga gagagtgcaa attcgtggag    1320
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<210> 16
<211> 1353
<212> DNA
<213> Artificial sequence

<220>
<221> source
<223> /note="description of artificial sequence: Mortierella alpina"

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<400> 16
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attagagatg ccattccagc ccacttgttc attcgcgaca ctacgaagtc aatacttcac    180
gtgggttaaag accttgtgac tatagcgata gtgttctatt gtgctacctt tatcgaaact    240
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gttatggtcg gaccatggat tttggcgcat ggtaaggaga ccaaaaaccc catgtgcatt    360
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gcattgcttg taccatatca agcatgggct atgtcacact ctaagcacca taaaggtaca    600
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gaaagcatat ttgcagaaac ccctatatac acattaggcg ctttactgtt tgttttgaca    780
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aatcacttcc agacagttgc tcctctatat gaaccacatc aaaggaagaa catcttttac    900
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ccattgacag tctttatgta ctatggcatt ccgtatttgg gtgttaacgc ttggattgtg 1020  
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 ctgcatcatc atattggaga tagtcatcag tgccatcaca tgttctcaca aatgccattt 1200  
 tacaatgccg ttgaagcgac taagtatctc aaagccaaat taggcaaata ctacatcttc 1260  
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<210> 17  
 <211> 8760  
 <212> DNA  
 <213> pFlat1

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 tgcgccttat tcaatctttg ctataaaaaa tggcccaaaa tctcacattg gaagacattt 180  
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