Claims:

1. A pure culture of *Aureobasidium melanogenum* strain W5-2 deposited with Agricultural Research Culture Collection (NRRL) and assigned Accession Number NRRL 67063, wherein the *Aureobasidium melanogenum GDP1* genomic sequence shares 100% identity to over at least 98% of SEQ ID NO:2; and/or wherein the *Aureobasidium melanogenum TEF1A* genomic sequence shares 100% identity to over at least 99% of SEQ ID NO:8; and/or wherein the *Aureobasidium melanogenum RBP1* genomic sequence shares 100% identity to over at least 98% of SEQ ID NO:10.

2. Use of the pure culture of claim 1 for the fermentative production of massoia lactone.

3. A method of fermentative production of massoia lactone comprising culturing an *Aureobasidium melanogenum* species in a culture medium for a period of time to produce massoia lactone in a fermentation product, wherein the *Aureobasidium melanogenum* species is strain W5-2 deposited with Agricultural Research Culture Collection (NRRL) and assigned Accession Number NRRL 67063, wherein the *Aureobasidium melanogenum GDP1* genomic sequence shares 100% identity to over at least 98% of SEQ ID NO:2; and/or wherein the *Aureobasidium melanogenum TEF1A* genomic sequence shares 100% identity to over at least 99% of SEQ ID NO:8; and/or wherein the *Aureobasidium melanogenum RBP1* genomic sequence shares 100% identity to over at least 98% of SEQ ID NO:10.

4. The method of claim 3, wherein the culture medium comprises:

10.0 g/l to 15 g/l, preferably about 12.5 g/l KH_2PO_4, 0.5 g/l to 2.0 g/l, preferably about 1.0 g/l Na_2HPO_4, 3.5 g/l to 6.5 g/l, preferably about 5.0 g/l $(NH_4)_2SO_4$, 1.0 g/l to 4.0 g/l, preferably about 2.5 g/l $MgSO_4 \cdot 7H_2O$ and 0.10 g/l to 0.40 g/l, preferably about 0.25 g/l $CaCl_2 \cdot 2H_2O$;

at least two trace elements selected from the group consisting of Fe^{2+}, Cu^{2+}, Zn^{2+} and MoO_4^{2-}, wherein each trace element in the culture medium is present in an amount from 0.1 μM to 1.0 mM, from 1.0 μM to 1.0 mM, from 10.0 μM to 1.0 mM,, or from 100 μM to 1.0 mM;

1.5 g/l to 2.5 g/l, preferably from 1.8 g/l to 2.2 g/l, more preferably about 2 g/l urea; and

a carbon source selected from the group consisting of glucose, mannose, xylose and mixtures thereof, wherein the carbon source present in the culture medium is from 4% to 12%, preferably from 5% to 12%, preferably from 5% to 11%, more preferably from 5% to 10%,

wherein the pH of the culture medium is from 5.5 to 6.5, preferably 6.0.

5. The method of claim 3 or 4, wherein the period of time for culturing is 4 days to 12 days, preferably 5 days to 12 days, preferably 5 days to 11 days, preferably 6 days to 11 days, more preferably 7 days to 10 days.

6. The method of any of claims 3 to 5, wherein the yield of crude massoia lactone in the fermentation product is at least 10 g/l, or at least 11 g/l, or at least 12 g/l, or at least 13 g/l, or at least 14 g/l or at least 15 g/l, or wherein the yield of crude massoia lactone in the fermentation product is from 10 g/l to 25 g/l, or from 10 g/l to 24 g/l, or from 10 g/l to 23 g/l, or from 10 g/l to 22 g/l, or from 10 g/l to 21 g/l, or from 10 g/l to 20 g/l, or from 10 g/l to 19 g/l, or from 10 g/l to 18 g/l, or from 10 g/l to 17 g/l, or from 10 g/l to 16 g/l, or from 10 g/l to 15 g/l, or from 10 g/l to 14 g/l.

7. The method of any one of claims 3 to 6, which further comprises hydrolyzing the fermentation product by a strong inorganic acid and purifying the massoia lactone from the fermentation product.

8. The method of any one of claims 3 to 7, wherein the fermentation product is substantially free of contaminant 3-hydroxyl delta-decalactone (3-hydroxydecan-5-olide).

9. A culture for the fermentative production of massoia lactone comprising an *Aureobasidium melanogenum* species in a culture medium, wherein the *Aureobasidium melanogenum* species is strain W5-2 deposited with Agricultural Research Culture Collection (NRRL) and assigned Accession Number NRRL 67063, wherein the *Aureobasidium melanogenum GDP1* genomic sequence shares 100% identity to over at least 98% of SEQ ID NO:2; and/or wherein the *Aureobasidium melanogenum TEF1A*

genomic sequence shares 100% identity to over at least 99% of SEQ ID NO:8; and/or wherein the *Aureobasidium melanogenum RBP1* genomic sequence shares 100% identity to over at least 98% of SEQ ID NO:10.

10. The culture of claim 9, wherein the culture medium comprises:

10.0 g/l to 15 g/l, preferably about 12.5 g/l KH_2PO_4, 0.5 g/l to 2.0 g/l, preferably about 1.0 g/l Na_2HPO_4, 3.5 g/l to 6.5 g/l, preferably about 5.0 g/l $(NH_4)_2SO_4$, 1.0 g/l to 4.0 g/l, preferably about 2.5 g/l $MgSO_4 \cdot 7H_2O$ and 0.10 g/l to 0.40 g/l, preferably about 0.25 g/l $CaCl_2 \cdot 2H_2O$;

at least two trace elements selected from the group consisting of Fe^{2+}, Cu^{2+}, Zn^{2+} and MoO_4^{2-}, wherein each trace element in the culture medium is present in an amount from 0.1 μM to 1.0 mM, from 1.0 μM to 1.0 mM, from 10.0 μM to 1.0 mM,, or from 100 μM to 1.0 mM;

1.5 g/l to 2.5 g/l, preferably from 1.8 g/l to 2.2 g/l, more preferably about 2 g/l urea; and

a carbon source selected from the group consisting of glucose, mannose, xylose and mixtures thereof, wherein the carbon source present in the culture medium is from 4% to 12%, preferably from 5% to 12%, preferably from 5% to 11%, more preferably from 5% to 10%,

wherein pH of the culture medium is from 5.5 to 6.5, preferably 6.0.

11. The culture of claim 9 or 10, further comprising more than 10 g/l of massoia lactone.

12. The culture of claim 9 or 10, wherein the amount of crude massoia lactone is at least 11 g/l, or at least 12 g/l, or at least 13 g/l, or at least 14 g/l or at least 15 g/l, or wherein the amount of crude massoia lactone is from 10 g/l to 25 g/l, or from 10 g/l to 24 g/l, or from 10 g/l to 23 g/l, or from 10 g/l to 22 g/l, or from 10 g/l to 21 g/l, or from 10 g/l to 20 g/l, or from 10 g/l to 19 g/l, or from 10 g/l to 18 g/l, or from 10 g/l to 17 g/l, or from 10 g/l to 16 g/l, or from 10 g/l to 15 g/l, or from 10 g/l to 14 g/l.