WHAT IS CLAIMED IS:

1. A method for *Agrobacterium*-mediated transformation of Stevia plants comprising:

(a) co-culturing leaf explants with *Agrobacterium* on a solid co-culturing medium which comprises MS mineral salts, MS vitamins, sucrose, acetosyringone (AS) and 2,4-dichlorophenoxyacetic acid (2,4-D) in the dark for a period of time to produce transgenic leaf explants, wherein the *Agrobacterium* contains a Stevia nucleic acid construct bearing Stevia genes to be integrated into the Stevia plant genome;

(b) culturing transgenic leaf explants on a solid callus induction medium which comprises MS mineral salts, MS vitamins, sucrose, 6-benzylaminopurine (BA), 3-indoleacetic acid (IAA), a selective agent and an *Agrobacterium* eradicant in the dark for a period of time to produce transgenic leaf explants with transgenic callus tissue;

(c) culturing the transgenic callus tissue on a solid shoot induction medium which comprises MS mineral salts, MS vitamins, sucrose, BA, IAA, a selective agent and an *Agrobacterium* eradicant in the dark for a period of time to produce transgenic shoots; and

(d) culturing the transgenic shoots on a solid rooting medium which comprises MS mineral salts, MS vitamins, sucrose and IAA in a light/dark cycle for a period of time to produce transgenic plants expressing Stevia genes.

2. The method of claim 1, wherein the transgenic plants are propagated and maintained *in vitro* by cutting and transferring apical tissue onto the solid rooting medium every three to four weeks and culturing in a light/dark cycle to produce transgenic plants.

3. The method of claim 1 or 2, wherein the concentrations of media components are:

(a) about 3% sucrose, about 0.25 mg/L 2,4-D and about 100 μM AS in the co-culturing medium;

(b) about 3% sucrose, about 1.0 mg/L BA and about 0.5 mg/L IAA in the callus induction medium;

(c) about 3% sucrose, about 1.0 mg/L to about 2mg/L BA and about 0.25 mg/L to about 0.5 mg/L IAA in the shoot induction medium; and

(d) about 3% sucrose and about 0.5 mg/L IAA in the rooting medium;

4. The method of claim 3, wherein the concentration of the components in the shoot induction medium are about 2mg/L BA and about 0.25 mg/L IAA.

5. The method of any one of claims 1-4, wherein periods of time for the culturing are:

(a) about 2-3 days on the co-culturing medium;

(b) about three weeks to about four weeks, preferably about three weeks on the callus induction medium;

(c) about three weeks to about four weeks, preferably about three weeks on the shoot induction medium; and

(d) about three weeks to about four weeks, preferably about three weeks on the rooting medium.

6. A method for regeneration of Stevia plants comprising:

(a) culturing transgenic leaf explants on a solid callus induction medium which comprises MS mineral salts, MS vitamins, sucrose, 6-benzylaminopurine (BA) and 3-indoleacetic acid (IAA) in the dark for a period of time to produce leaf explants with callus tissue;

(b) culturing the callus tissue on a solid shoot induction medium which comprises MS mineral salts, MS vitamins, sucrose, BA and IAA in the dark for a period of time to produce shoots; and

(c) culturing the shoots on a solid rooting medium which comprises MS mineral salts, MS vitamins, sucrose and IAA in a light/dark cycle for a period of time to produce plants.

7. The method of claim 6, wherein the leaf explants are first co-cultured on a solid co-culturing medium which comprises MS mineral salts, MS vitamins, sucrose and 2,4-dichlorophenoxyacetic acid (2,4-D) in the dark for a period of time to produce co-cultured leaf explants.

8. The method of claim 7, wherein the co-culturing medium comprises acetosyringone (AS).

9. The method of claim 6, 7 or 8, wherein the transgenic plants are propagated and maintained *in vitro* by cutting and transferring apical tissue onto the solid rooting

medium every three to four weeks and culturing in a light/dark cycle to produce transgenic plants.

10. The method of any one of claims 6-9, wherein the concentrations of media components are:

(a) about 3% sucrose, about 0.25 mg/L 2,4-D and, if present, about 100 μM AS in the co-culturing medium;

(b) about 3% sucrose, about 1.0 mg/L BA and about 0.5 mg/L IAA in the callus induction medium;

(c) about 3% sucrose, about 1.0 mg/L to about 2mg/L BA and about 0.25 mg/L to about 0.5 mg/L IAA in the shoot induction medium; and

(d) about 3% sucrose and about 0.5 mg/L IAA in the rooting medium;

11. The method of claim 10, wherein the concentration of the components in the shoot induction medium are about 2mg/L BA and about 0.25 mg/L IAA.

12. The method of any one of claims 6-11, wherein periods of time for the culturing are:

(a) about 2-3 days on the co-culturing medium;

(b) about three weeks to about four weeks, preferably about three weeks on the callus induction medium;

(c) about three weeks to about four weeks, preferably about three weeks on the shoot induction medium; and

(d) about three weeks to about four weeks, preferably about three weeks on the rooting medium.

13. A transgenic Stevia plant comprising a polynucleotide selected from the group consisting of:

(a) a polynucleotide encoding SrDXS1 having the amino acid sequence set forth in SEQ ID NO:2;

(b) a polynucleotide encoding SrKAH having the amino acid sequence set forth in SEQ ID NO:4;

(c) a polynucleotide encoding SrUGT76G1 having the amino acid sequence set forth in SEQ ID NO:30;

(d) a polynucleotide encoding SrUGT74G1 having the amino acid sequence set forth in SEQ ID NO:32; and

(f) a polynucleotide encoding SrUGT85C2 having the amino acid sequence set forth in SEQ ID NO:34.

14. The transgenic Stevia plant of claim 13, wherein the transgenic Stevia plant overexpress SrDXS1 and has an enhanced content of steviol glycosides of about 42% to about 54% compared to a wild type Stevia plant.

15. The transgenic Stevia plant of claim 13, wherein the transgenic Stevia plant overexpress SrKAH and has an enhanced content of steviol glycosides of about 67% to about 88% compared to a wild type Stevia plant.

16. A method for producing a transgenic Stevia plant comprising introducing a polynucleotide into a Stevia plant, wherein the polynucleotide is stably integrated into the genome of the transgenic plant and wherein the polynucleotide is selected from the group consisting of:

(a) a polynucleotide encoding SrDXS1 having the amino acid sequence set forth in SEQ ID NO:2;

(b) a polynucleotide encoding SrKAH having the amino acid sequence set forth in SEQ ID NO:4;

(c) a polynucleotide encoding SrUGT76G1 having the amino acid sequence set forth in SEQ ID NO:30;

(d) a polynucleotide encoding SrUGT74G1 having the amino acid sequence set forth in SEQ ID NO:32; and

(f) a polynucleotide encoding SrUGT85C2 having the amino acid sequence set forth in SEQ ID NO:34.

17. The method of claim 16, wherein the transgenic Stevia plant overexpress SrDXS1 and has an enhanced content of steviol glycosides of about 42% to about 54% compared to a wild type Stevia plant.

18. The method of claim 16, wherein the transgenic Stevia plant overexpress SrKAH and has an enhanced content of steviol glycosides of about 67% to about 88% compared to a wild type Stevia plant.

19. The transgenic plant of claim 13, wherein the transgenic plant overexpresses SrUGT76G1 and has an enhanced ratio of rebaudioside A (Reb A) to stevioside of about 207% to about 517% compared to a wild type Stevia plant.

20. The transgenic plant of claim 19, wherein the transgenic plant overexpresses SrUGT76G1 and has an enhanced ratio of rebaudioside C (Reb C) to dulcoside A of about 135% to about 222% compared to a wild type Stevia plant.

21. The transgenic plant of claim 16, wherein the transgenic plant overexpresses SrUGT76G1 and has an enhanced ratio of rebaudioside A (Reb A) to stevioside of about 207% to about 517% compared to a wild type Stevia plant.

22. The transgenic plant of claim 21, wherein the transgenic plant overexpresses SrUGT76G1 and has an enhanced ratio of rebaudioside C (Reb C) to dulcoside A of about 135% to about 222% compared to a wild type Stevia plant.