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**Record 1 of 1****Patent Number(s):** US2007292874-A1; WO2008064443-A2; WO2008064443-A3; US7732664-B2**Title:** Determining ability of plant to accumulate sugar comprises measuring the expression level a polynucleotide or its encoded polypeptide associated with sucrose content in a plant sample**Inventor Name(s):** SOUZA G M; PAPINI-TERZI F S; ROCHA F R; WACLAWOVSKY A J; VENCIO R Z N; MARQUES J O; DE MARIA F J; TEIXEIRA M M; BUCKERIDGE M; PEREIRA D S A; ULIAN E C; FELIX J D M; DE SOUZA A P**Patent Assignee(s):** UNIV SAO PAULO USP (UYSA-Non-standard); UNIFESP UNIV FEDERAL SAO PAULO (UNIF-Non-standard); UNICAMP UNIV ESTADUAL CAMPINAS (UNIC-Non-standard); FUNDACAO AMPARO A PESQUISA DO ESTADO (AMPA-Non-standard); CENT TECNOLOGIA CANAVIEIRA (TECN-Non-standard); CENT ALCOOL LUCELIA LTDA (ALCO-Non-standard); FAPESP FUNDACAO AMPARO A PESQUISA ESTADO (FAPE-Non-standard)**Derwent Primary Accession No.:** 2008-A47420**Abstract:** NOVELTY - Determining the ability of a plant to accumulate sugar comprises providing a sample of a plant, and measuring the expression level in the plant of a polynucleotide having 65-99% sequence identity to a nucleotide sequence selected from SEQ ID NO. 1-203 and 229-373, their complements, and sequences, which hybridize to the sequences under high stringency conditions. The sequences are available in electronic form from the following website <http://seqdata.uspto.gov/pageRequest=docDetail&DocID=US20070292874A1>.

USE - The methods are useful for determining the ability of a plant to accumulate sugar, and altering the ability of a plant to accumulate sugar. It can be used for producing transgenic plants with increased sugar content.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are:

- (1) a method for altering the ability of a plant to accumulate sugar;
- (2) a transgenic plant comprising a vector expressing or interfering with the expression of a polynucleotide having at least 65-99% sequence identity to a nucleotide sequence selected from SEQ ID NO. 1-203 and 229-373, their fragments, their complements, and sequences, which hybridize to SEQ ID NO. 1-203 and 229-373 under high stringency conditions, where expression of the polynucleotide encoded by the vector increases the plant's sugar content;
- (3) a transgenic plant comprising a vector expressing or interfering with the expression of a polypeptide having at least 65-99% similarity to a polypeptide encoded by a nucleotide sequence selected from SEQ ID NO. 1-203 and 229-373, where expression of the polypeptide increases the plant's sugar content;
- (4) a non-naturally occurring plant with altered expression levels of a polynucleotide having at least 65% sequence identity to a nucleotide sequence selected from SEQ ID NO. 1-203 and 229-373, their complements,

and sequences, which hybridize to SEQ ID NO. 1-203 and 229-373 under high stringency conditions;

(5) a non-naturally occurring plant with altered expression levels of a polypeptide having at least 65% similarity to a polypeptide encoded by a nucleotide sequence selected from SEQ ID NO. 1-203 and 229 to 373; and

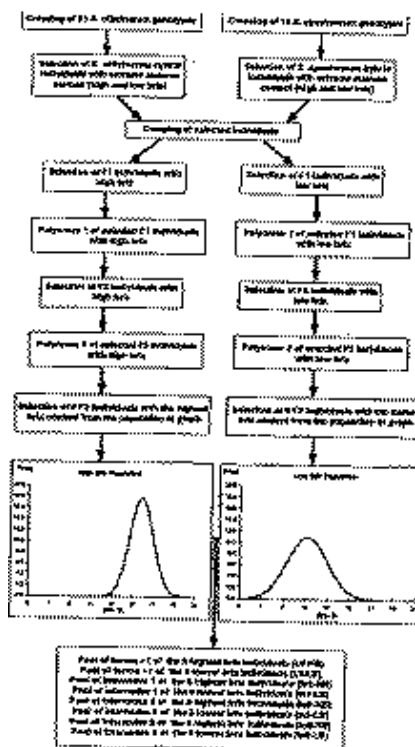
(6) a seed, seed-cane, or sets of the non-naturally occurring plants above.

**Technology Focus/Extension Abstract:** TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: Determining the ability of a plant to accumulate sugar also comprises providing a sample of a plant, and measuring the expression level in the plant of a polynucleotide comprising a fragment of at least 14 nucleotides of a nucleotide sequence selected from SEQ ID NO. 1-203 and 229-373, their complements, and sequences, which hybridize to SEQ ID NO. 1-203 and 229-373 under high stringency conditions. Determining the ability of a plant to accumulate sugar also comprises: (a) providing a sample of a plant; and measuring the expression level in the plant of a polypeptide encoded by a polynucleotide having 65-99% sequence identity to a nucleotide sequence selected from SEQ ID NO. 1-203 and 229-373, their complements, and sequences, which hybridize to SEQ ID NO. 1-203 and 229-373 under high stringency conditions; or (b) providing a sample of a plant; and measuring the expression level in the plant of a polypeptide having 65% similarity to a polypeptide encoded by a polynucleotide sequence selected from SEQ ID NO. 1-203 and 229-373. Altering the ability of a plant to accumulate sugar comprises providing a plant, and modulating the expression level in the plant of a polynucleotide selected from SEQ ID NO. 1-203 and 229-373. The expression level is modulated by mutagenesis, which is chemically induced. Altering the ability of a plant to accumulate sugar also comprises providing a plant, and expressing in the plant or interfering with the expression in the plant of a polynucleotide having 65-99% sequence identity to SEQ ID NO. 1-203 and 229-373, their fragments, their complements, and sequences, which hybridize to SEQ ID NO. 1-203 and 229-373 under high stringency conditions. Expression of the polynucleotide is interfered with by using anti-sense nucleic acid or RNA interference. Altering the ability of a plant to accumulate sugar also comprises providing a plant, and expressing or interfering with the expression of a polypeptide having at least 65-99% similarity to a polypeptide encoded by a nucleotide sequence selected from SEQ ID NO. 1-203 and 229-373. Expression of the polypeptide is interfered with by using anti-sense nucleic acid or RNA interference to interfere with the expression of the polynucleotide encoding the polypeptide.

SPECIFIC SEQUENCES - Specifically claimed are nucleic acids associated with sucrose content and its encoded polypeptides available in electronic form from the following website <http://seqdata.uspto.gov/pageRequest=docDetail&DocID=US20070292874A1>.

EXAMPLE - No example given.

**Drawing:**



**Derwent Class Code(s):** C06 (Biotechnology, plant genetics, veterinary vaccines); D16 (Fermentation industry); P13 (Plant culture, dairy products); T01 (Digital Computers)

**Derwent Manual Code(s):** C04-A0800E; C04-A09F0E; C04-E02F; C04-E03F; C04-E08; C12-K04D; C14-S03B; C14-S03C; D05-H09; D05-H16B; T01-J13A

**IPC:** A01H-005/00; C12N-015/01; C12N-015/87; C12Q-001/68; A01H-005/10; C12N-015/82; A01H-005/04; C12N-015/00

**Patent Details:**

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WO2008064443-A2	05 Jun 2008		200838		English
WO2008064443-A3	02 Apr 2009	A01H-005/00	200925		English
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US2007292874-A1	US716262	08 Mar 2007
WO2008064443-A2	WOBR000282	22 Aug 2007
WO2008064443-A3	WOBR000282	22 Aug 2007
US7732664-B2	US716262	08 Mar 2007

**Further Application Details:**

US2007292874-A1	Provisional	Application	US780693P
US2007292874-A1	Provisional	Application	US861496P
US7732664-B2	Provisional	Application	US780693P
US7732664-B2	Provisional	Application	US861496P

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WO2008064443-A2:

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(Regional): AT; BE; BG; BW; CH; CY; CZ; DE; DK; EA; EE; ES; FI; FR; GB; GH; GM; GR; HU; IE; IS; IT; KE; LS; LT; LU; LV; MC; MT; MW; MZ; NA; NL; OA; PL; PT; RO; SD; SE; SI; SK; SL; SZ; TR; TZ; UG; ZM; ZW

WO2008064443-A3:

(National): AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; SV; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; ZA; ZM; ZW

(Regional): AT; BE; BG; BW; CH; CY; CZ; DE; DK; EA; EE; ES; FI; FR; GB; GH; GM; GR; HU; IE; IS; IT; KE; LS; LT; LU; LV; MC; MT; MW; MZ; NA; NL; OA; PL; PT; RO; SD; SE; SI; SK; SL; SZ; TR; TZ; UG; ZM; ZW

**Field of Search:** x

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