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Glucose transport in *Saccharomyces cerevisiae* effects on growth and metabolism

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Abbreviations

<i>ADH2</i>	alcohol dehydrogenase II encoding gene
Adr1	positive transcriptional regulator of <i>ADH2</i> and peroxisomal protein genes
Cat8	transcription factor required for derepression of gluconeogenic enzymes
C_p'	control coefficient of enzyme <i>P</i> on flux <i>J</i>
CMAC-Arg	7-amino-4-chloromethylcoumarin-L-arginine amide-dihydrochloride
conA-TR	Texas Red-conjugated concanavalin A
Cy3	Indocarbocyanine, a fluorescent labeling reagent
<i>CYC1</i>	iso-1-cytochrome <i>c</i> encoding gene
Da	dalton
E_0	total enzyme
<i>END3</i>	a gene coding for a protein required for the internalization step of <u>endocytosis</u>
<i>GALS</i>	the genes coding for the enzymes required for the catabolism of <u>galactose</u>
GFP	<u>green fluorescent protein</u>
Glc7	<u>glycogen accumulation</u> , the catalytic subunit of a type 1 protein phosphatase and required for glucose repression
Grr1	<u>glucose repression-resistant</u> , required for glucose repression and for glucose and cation transport
<i>GUT2</i>	glycerol-3-phosphate dehydrogenase encoding gene
Hap/2/3/4/5 complex	<u>haem-activated proteins</u>
Hxk2	hexokinase II
Hxt	<u>hexose transporter</u>
k_{cat}	turnover number
K_m	Michaelis constant
LB	<u>Luria-Bertani medium</u> , 1% tryptone, 0.5% yeast extract and 1% NaCl
<i>MALS</i>	the genes encoding enzymes for maltose metabolism and regulation
MCA	<u>Metabolic Control Analysis</u>
Mig1	<u>multicopy inhibitor of GAL</u> gene expression
Mth1	<u>metallothionein</u> -encoding gene, negative regulator of <i>HXT</i> gene expression
OD	optical <u>density</u>

Abbreviations

ORF	open reading frame
Pdr1	pleiotropic drug resistance, zinc-finger transcription factor of the Zn(2)-Cys(6) binuclear cluster domain type
Pol II	RNA polymerase II
PuPuPyPuPu	transcription initiator consensus sequence, a pyrimidine nucleotide (T/C) flanked on either side by two purine nucleotides (A/G)
Reg1	regulatory subunit for protein phosphatase Glc7, a negative regulator of glucose-repressible genes
RGT2	restores glucose transport gene, encodes a high glucose sensor
S	substrate concentration
SEC6	a gene coding for a protein required for fusion of post-Golgi secretory vesicles with the plasma membrane
Sip4	a Snf1 kinase-dependent transcriptional activator
Sks1	suppressor kinase of snf3, multicopy suppressor of snf3 and grr1 mutants
Snf1	encoded by <i>SNF1</i> gene, the product is required to derepress expression of many glucose-repressible genes in <i>Saccharomyces cerevisiae</i>
SNF3	sucrose nonfermenting gene, encodes a low glucose sensor
Ssn6	suppressor of snf1, general repressor of transcription (with Tup1p); mediates glucose repression
Std1	sugar transport defective, modulates the regulatory response to glucose and may couple the Snf1 pathway to transcription.
SUC2	sucrose nonfermenting gene, coding for invertase
TATA box	a TATAAA sequence in promoter region which is necessary for initiation of transcription
TFIID	the TATA box-binding factor IID
TRITC	tetramethyl rhodamine isothiocyanate, a red fluorescent dye for DNA and protein staining
Tup1	deoxythymidine 5'-monophosphate (dTMP) uptake, glucose repression regulatory protein
UASs	upstream activating sequences
URSs	upstream repressing sequences
v	the rate of glucose transport
V_{\max}	the maximum rate of glucose transport
YP	a culture medium composed by 1% yeast extract and 2% peptone