TABLE S2

Arsenite-sensitive haploid YKOs

			Arsenic sensitivity[a]	
ORF Name	Gene Name	Biological Process	100 μM	400 μM
YNL153C	GIM3	actin & tubulin folding	SS	SS
YEL003W	GIM4	actin & tubulin folding	SS	SS
YML094W	GIM5	actin & tubulin folding	SS	SS
YGR078C	PAC10	actin & tubulin folding	SS	SS
YJL179W	PFD1	actin & tubulin folding	SS	SS
YLR200W	YKE2	actin & tubulin folding	SS	SS
YPL161C	BEM4	actin cytoskeleton organization and biogenesis	S	SS
YLR370C	ARC18	actin filament organization	NO	SS
YLR371W	ROM2	actin filament organization	SS	SS
YNL271C	BNI1	actin filament organization	NO	S
YNL084C	END3	actin filament organization; endocytosis	NO	SS
YJR125C	ENT3	actin filament organization; endocytosis	NO	S
YBR200W	BEM1	actin organization; establishment of cell polarity	NO	S
YPR199C	ARR1	arsenite detoxification	SS	SS
YPR201W	ARR3	arsenite detoxification	SS	SS
YDR135C	YCF1	arsenite detoxification	NO	SS
YFL023W	BUD27	bud site selection	SS	SS
YCR063W	BUD31	bud site selection	NO	SS
YKR061W	KTR2	cell wall mannoprotein biosynthesis	NO	S
YCR017C	CWH43	cell wall organization and biogenesis	NO	S
YDR293C	SSD1	cell wall organization and biogenesis	NO	SS
YLR085C	ARP6	chromatin remodeling; transcriptional regulation	NO	S
YOL012C	HTZ1	chromatin remodeling; transcriptional regulation	NO	SS
YOR304W	ISW2	chromatin remodeling; transcriptional regulation	NO	S
YNL192W	CHS1	cytokinesis	NO	S
YOL076W	MDM20	cytoskeleton organization and biogenesis	NO	S
YNL138W	SRV2	cytoskeleton organization and biogenesis	NO	SS
YDL101C	DUN1	DNA damage checkpoint	NO	S
YBL051C	PIN4	DNA damage checkpoint	NO	S
YER177W	BMH1	DNA damage checkpoint; cell polarization	NO	S
YLL002W	RTT109	DNA damage response; DNA transpotision	NO	S
YDL013W	HEX3	DNA repair	NO	S
YPR164W	MMS1	DNA repair	NO	S
YLR320W	MMS22	DNA repair	NO	SS
YMR224C	MRE11	DNA repair	NO	SS
YCR066W	RAD18	DNA repair	NO	S
YNL250W	RAD50	DNA repair	NO	S

YER095W	RAD51	DNA repair	NO	S
YML032C	RAD52	DNA repair	NO	SS
YGL163C	RAD54	DNA repair	NO	S
YDR004W	RAD57	DNA repair	NO	S
YJL047C	RTT101	DNA repair	NO	S
YHR154W	RTT107	DNA repair	NO	S
YER116C	SLX8	DNA repair	NO	S
YDR369C	XRS2	DNA repair	NO	SS
YJR043C	POL32	DNA repair; DNA replication	NO	S
YKL113C	RAD27	DNA repair; DNA replication	NO	SS
YJL115W	ASF1	DNA repair; histone assembly	NO	S
YGL058W	RAD6	DNA repair; histone ubiquitination & methylation	NO	S
YDL020C	RPN4	DNA repair; protein degradation	NO	S
YPR135W	CTF4	DNA repair; sister chromatid cohesion	NO	S
YHR191C	CTF8	DNA repair; sister chromatid cohesion	NO	S
YCL016C	DCC1	DNA repair; sister chromatid cohesion	NO	S
YGL127C	SOH1	DNA repair; transcriptional regulation	NO	S
YOR080W	DIA2	DNA replication	NO	S
YNR006W	VPS27	endosome transport	NO	S
YHR007C	ERG11	ergosterol biosynthesis	SS	SS
YMR202W	ERG2	ergosterol biosynthesis	NO	SS
YNL280C	ERG24	ergosterol biosynthesis	S	SS
YLR056W	ERG3	ergosterol biosynthesis	NO	S
YML008C	ERG6	ergosterol biosynthesis	NO	SS
YHR067W	RMD12	fatty acid biosynthesis	NO	S
YLR372W	SUR4	fatty acid biosynthesis	NO	SS
YLR087C	CSF1	fermentation	NO	SS
YGL084C	GUP1	glycerol transport	NO	S
YLR148W	PEP3	Golgi to endosome transport	NO	S
YMR231W	PEP5	Golgi to endosome transport	NO	S
YLR396C	VPS33	Golgi to endosome transport	NO	S
YER014W	HEM14	heme biosynthesis	S	SS
YCL010C	SGF29	histone acetylation	NO	S
YNL021W	HDA1	histone deacetylation	NO	S
YNL097C	PHO23	histone deacetylation	NO	S
YPR179C	PLO1	histone deacetylation	NO	S
YDR295C	PLO2	histone deacetylation	NO	S
YNL330C	RPD3	histone deacetylation	NO	SS
YMR263W	SAP30	histone deacetylation	NO	S
YIL084C	SDS3	histone deacetylation	NO	S
YOL004W	SIN3	histone deacetylation	NO	SS

YLR015W	BRE2	histone methylation	NO	S
YDR469W	SDC1	histone methylation	NO	S
YAR003W	SWD1	histone methylation	NO	S
YBR175W	SWD3	histone methylation	NO	S
YDL074C	BRE1	histone ubiquitination & methylation	NO	SS
YPL055C	LGE1	histone ubiquitination & methylation	NO	S
YMR077C	VPS20	late endosome to vacuole transport	NO	SS
YMR165C	PAH1	lipid biosynthesis	NO	SS
YOR349W	CIN1	microtubule biogenesis	NO	SS
YPL241C	CIN2	microtubule biogenesis	S	SS
YOR265W	RBL2	microtubule biogenesis	NO	SS
YML124C	TUB3	microtubule biogenesis	NO	SS
YDR150W	NUM1	microtubule organization and biogenesis	NO	S
YHR129C	ARP1	microtubule-mediated nuclear migration	NO	S
YER016W	BIM1	microtubule-mediated nuclear migration	NO	S
YMR294W	JNM1	microtubule-mediated nuclear migration	NO	S
YDR488C	PAC11	microtubule-mediated nuclear migration	NO	S
YJR118C	ILM1	mitochondrial genome maintenance	NO	SS
YHR038W	FIL1	mitochondrion protein biosynthesis	NO	SS
YPR120C	CLB5	mitotic cell cycle (G1/S and G2/M transition)	NO	S
YER167W	BCK2	mitotic cell cycle (G1/S transition)	NO	S
YFR040W	SAP155	mitotic cell cycle (G1/S transition)	NO	S
YLR079W	SIC1	mitotic cell cycle (G1/S transition)	NO	S
YPR119W	CLB2	mitotic cell cycle (G2/M transition)	NO	S
YFR036W	CDC26	mitotic cell cycle (metaphase/anaphase transition)	SS	SS
YAL024C	LTE1	mitotic cell cycle (mitotic exit)	S	SS
YNL298W	CLA4	mitotic cell cycle (mitotic exit); cell polarization	NO	SS
YPL008W	CHL1	mitotic sister chromatid cohesion	NO	S
YOR073W	SGO1	mitotic spindle checkpoint	NO	S
YEL061C	CIN8	mitotic spindle organization and biogenesis	NO	S
YCR065W	HCM1	mitotic spindle organization and biogenesis	NO	S
YIL153W	RRD1	mitotic spindle organization and biogenesis	NO	S
YGL094C	PAN2	mRNA 3'-end processing; DNA repair	NO	S
YDR497C	ITR1	myo-inositol transport	NO	S
YOR371C	GPB1	negative regulation of cAMP signalling	NO	S
YAL056W	GPB2	negative regulation of cAMP signalling	NO	S
YBR140C	IRA1	negative regulation of cAMP signalling	NO	S
YOL081W	IRA2	negative regulation of cAMP signalling	S	SS
YOR360C	PDE2	negative regulation of cAMP signalling	NO	S
YHR013C	ARD1	N-terminal protein amino acid acetylation	NO	SS
YEL053C	MAK10	N-terminal protein amino acid acetylation	NO	S

YDL040C	NAT1	N-terminal protein amino acid acetylation	S	SS
YLR293C	GSP1	nucleocytoplasmic transport	S	SS
YLR113W	HOG1	osmotic stress response; regulation of arsenic uptake	NO	SS
YLR006C	SSK1	osmotic stress response; regulation of arsenic uptake	NO	SS
YNR031C	SSK2	osmotic stress response; regulation of arsenic uptake	NO	SS
YJL128C	PBS2	osmotic stress response; regulation of arsenic uptake	NO	SS
YMR038C	LYS7	oxidative stress response	S	SS
YNL099C	OCA1	oxidative stress response	NO	S
YHR206W	SKN7	oxidative stress response	NO	S
YJR104C	SOD1	oxidative stress response	SS	SS
YML028W	TSA1	oxidative stress response	NO	S
YML007W	YAP1	oxidative stress response	NO	SS
YCR028C	FEN2	pantothenate transport	NO	SS
YKL197C	PEX1	peroxisome organization and biogenesis	NO	S
YDR265W	PEX10	peroxisome organization and biogenesis	NO	S
YLR191W	PEX13	peroxisome organization and biogenesis	NO	S
YGL153W	PEX14	peroxisome organization and biogenesis	NO	S
YOL044W	PEX15	peroxisome organization and biogenesis	NO	S
YNL214W	PEX17	peroxisome organization and biogenesis	NO	S
YDL065C	PEX19	peroxisome organization and biogenesis	NO	S
YJL210W	PEX2	peroxisome organization and biogenesis	NO	S
YAL055W	PEX22	peroxisome organization and biogenesis	NO	S
YDR329C	PEX3	peroxisome organization and biogenesis	NO	S
YGR133W	PEX4	peroxisome organization and biogenesis	NO	SS
YDR244W	PEX5	peroxisome organization and biogenesis	NO	S
YNL329C	PEX6	peroxisome organization and biogenesis	NO	SS
YGR077C	PEX8	peroxisome organization and biogenesis	NO	S
YJR073C	OPI3	phosphatidylcholine biosynthesis	NO	S
YHL020C	OPI1	phospholipid biosynthesis	NO	S
YGR123C	PPT1	protein amino acid dephosphorylation	NO	S
YJL183W	MNN11	protein amino acid glycosylation	S	SS
YGL038C	OCH1	protein amino acid N-linked glycosylation	NO	SS
YML115C	VAN1	protein amino acid N-linked glycosylation	NO	SS
YOR124C	UBP2	protein deubiquitination	NO	SS
YPL106C	SSE1	protein folding	NO	S
YER110C	KAP123	protein import into nucleus	NO	S
YBR171W	SEC66	protein targeting to membrane	NO	S
YCL008C	STP22	protein targeting to membrane	NO	S
YPL084W	BRO1	protein targeting to vacuole	NO	SS
YPL002C	SNF8	protein targeting to vacuole	NO	SS
YJR102C	VPS25	protein targeting to vacuole	S	SS

YLR417W	VPS36	protein targeting to vacuole	S	SS
YDR136C	VPS61	protein targeting to vacuole	NO	SS
YNL297C	MON2	protein targeting to vacuole; endocytosis	NO	SS
YKL176C	LST4	protein transport Golgi to plasma membrane	NO	SS
YGR057C	LST7	protein transport Golgi to plasma membrane	NO	SS
YMR275C	BUL1	protein ubiquitination	S	SS
YPL139C	UME1	regulation of meiosis	NO	S
YNL229C	URE2	regulation of nitrogen utilization	NO	S
YNL201C	PSY2	response to drug	NO	S
YER083C	GET2	retrograde vesicle-mediated transport	NO	S
YFL001W	DEG1	RNA processing	S	SS
YML016C	PPZ1	sodium ion homeostasis	NO	SS
YDR001C	NTH1	Stress response	NO	S
YNL307C	MCK1	Stress response; DNA repair	NO	SS
YAL012W	CYS3	sulfur amino acid metabolism	S	SS
YOL138C	YOL138C	telomere maintenance	NO	SS
YDR195W	REF2	transcriptional regulation	NO	SS
YBR095C	RXT2	transcriptional regulation	NO	S
YNL236W	SIN4	transcriptional regulation	NO	S
YDR463W	STP1	transcriptional regulation	NO	S
YBL024W	NCL1	tRNA methylation	NO	S
YDR525W	API2	unknown	NO	S
YLR338W	OPI9	unknown	S	SS
YBL104C	YBL104C	unknown	NO	SS
YCR082W	YCR082W	unknown	NO	S
YJL120W	YJL120W	unknown	NO	SS
YKL097C	YKL097C	unknown	NO	S
YLL049W	YLL049W	unknown	NO	S
YPL066W	YPL066W	unknown	NO	S
YLR373C	VID22	vacuolar protein catabolism	NO	SS
YNL054W	VAC7	vacuole inheritance and morphology	NO	S

Note: [a] Individual haploid-convertible heterozygote diploid YKOs were sporulated and spotted at 10 x serial dilution on solid haploid selection magic medium in the presence of sodium arsenite at indicated concentrations. Growth of each strain was compared to an isogenic *ho*Δ mutant, which acts as a surrogate wild-type strain. "SS", the mutant was hypersensitive to the drug at indicated concentration; "S", modestly sensitive; "NO", not sensitive. YKOs of dubious ORFs that overlap with known genes were excluded from this table. These include *yml094c-a*Δ, which is deleted for part of *GIM5* and was one of the nine most arsenic-sensitive YKOs.