Mutualistic

BivA				
pdxA bamB pgi psimB pfkA pgi gpmA gpmA argD galT glnG panB galT panB ppc galK ppc argD galK cysN ppc galK cysN yjgA nadA speB nadC iivA nadB pdxB thiD panE panB pdxB panB pdxB panB pdxA sodA galP ppk ppk ppk ppk ppk ppk ppk ppk ppk apaH ppt ppt ppk apaH <td>ilvA -</td> <td></td> <td>eda -</td> <td></td>	ilvA -		eda -	
DOTA DATE	eda -			
Pgi	pdxA -			
cysD - prikA - cysD - pgi prikA - cysD - gpmA - argD - galT - galT - galT - galT - galK - sodA - galK - cysN - yigA - galK - cysN - yigA - galK - galF - galK - galF - galK - galF - galK - galF - galF - galK - galF - g	•			
pffkA - cysb gpmA argb gpmA argb galT glnG galT galT galK panB galT galK argb g				
gpmA argD galT glnG panB thiD ppc galK panB galK cysN cysN cysN yigA iivA nadC iivA nadB nadB pdxB iivD nadB pdxB pdxA nadB pdxB pdxA nadB pdxB ppk palB prmC ppk palB prmC ppk palP lysR ppk palP lysR ppk palP pytB pytB palP pytB pytB palP pytB pytB				
argD				
ginG				
galT - ppc galK - galK - sodA - sysN - yigA - ilvA - sysN - yigA - ilvA - sysB - galB -			_	
galK galK cysN cy				
galK	galT -			
galK cysN cysN cysN cysN cysN sigA cysN sigA silvA speB speB speB speB silvD same silvD	ррс –			
galk cysN nadC ilVA nadB speB nadB pdxB thiD thrC galE ilVD panB zwf xseA pdxA sodA galP cysG ppk galP lysR pabB prmC galP lysR pabB prmC galP lysR pabB prmC galP lysR pabB prmC galP lysR pak apaH pis apaH pare ptsI pare ptsI pare ptsI pare ptsI pare ptsI pare ptrM ilvG recG pare purF ptysR pgI pare ptrF ptr ptr pare	panC -		algD	
cysN nadC ilvA nadC ilvA nadB nadB pdxB thrC galE panE ilvD galE panE ilvD yxseA pdxA sodA sodA galP pyk galP lysR ppk galP lysR ppt ghA apaH pts px yftP px px yf	galK -			
nadC nadA nadB nadB pdxB thiD galE panB xseA pdxA sodA galP cysG galP pabB pabB prmC glnL ilvC galE ginL ilvC galF pabB pabB prmC glnL ilvC gahA pah panE pby pabB pormC glnL ilvC gahA pah panE pormC glnB ilvG recG pabC aroF speB guaB zwf pdxB civG plab cara purF plyR pdxB cysC lepA surA purF plyR ilvM epd carB pstC dapaH thrA argG panM tolC lepA cyoB gshA purL thrA argG gnd metC gnd icc sdhA glnB srmB aspC gnd metC sdhA glnB bipA gulR bipA gulR znuB lamB znuC cstA thil malF malT ybiB malT gur malZ yafV dppA ompF metF flgG metAS metB ndk nadC sdhA pabB fadE glnL glnG glnG metAS metB ndk nadC sdhA pabB fadE glnL glnG glnG glnG glnG metAS metB ndk nadC sdhA pabB fadE glnL glnG glnG glnG glnG glnG glnG glnG glnG			Cysin via A	
nadA nadB nadB thiD thiD galE panB xseA sodA sodA galP cysG galP pabB glnL ilvC galE glnL gab gap gap glnL gap glnL gap gap glnL gap glnL gap glnC gur				
nadB thiD galE thiD galE panB xseA sodA sodA sodA galP cysG galP lysR pabB glnL ilvC gshA pah panE panB glnL glnC gshA pah panE ptsl argE purM ilvG recG pabC aroF speB ytfP pdxB filS cysC lepA surA purF lysR pgl ilvM epd carB argG gshA panH argG gshA panH panB aspC gshA purL thrA argG gshA purL sdhB ybiB srmB aspC glnB gnd metC sicc glnB gnd gnd metC sicc glnB gnd metC sicc glnB gnd gnd metC sicc glnB gnd gnd metC sicc glnB gnd gnd metC sicA gnd glnB gnd gnd gnd glnB gnd gnd gnd glnB gnd gnd gnd glnB gnd				
thiD galE panB zwf panB zwf sseA pdxA sodA galP cysG ppk galP lysR pabB prmC glnL ivC gshA apaH panE ptsl ivG recG pabC aroF speB guaB ytfP pdxB fliS cysC lepA surA purf lysR pgh ivM epd carB pstC apaH thrA argG apaH thrA argG gnA cyoB gshA purL thrA sdhB ybiB aspC gnd metC icc sdhA galR znuC cstA fumA galR zur malZ yafV dppA dpa galR graft flig zur malZ malZ yafV dppA apaH gnaD gnA galR graft flig zur malZ yafV dppA apaH gnA graft flig zur malZ yafV dppA apaH gnA graft flig zur malZ yafV dppA apaH gnA graft flig zur malZ yafV dppA galR apaB znuC cstA fumA gnA graft flig zur malZ yafV dppA gnA galR graft flig zur malZ yafV dppA gnA gnA gnA gnA gnA gnA gnA gnA gnA gn			speb ndvB	
galE panB xseA sodA galP pdxA sodA galP ppk galP pabB glnL ilvC gshA papH panE panE ilvD ppk ppk papH panE ptsl argE purM ilvG ppk speB guaB ytfP pdxB fliS cysC lepA surA pysR pgl ilvM epd carB papH panE pstC apaH ptsl argG fliS cysC ghA pdxB fliS cysC ghA pdxB fliS cysC ghA pdxB fliS cysC ghA pdxB fliS cysC ghA purF pgl ilvM carB pstC apaH panE pstC apaH pric argG fliS cysC ghA purF pyrC tolC ghA gnA purL thrA grgG glnB gnd metC icc sdhA gnB gnd metC icc sdhA gnd gnd metC icc sdhA gnd gnd metC glnB gnd metC glnB gnd gnd metC glnB gnd				
galle iIVD xseA pdxA sodA galP cysG ppk galP lysR pabB prmC glnL surA ilvC gshA pabB prmC ghA apaH panE ptsl pabC aroF pabE guaB ytfP mdh pdxB ytfP mdh purF lysR pgl iiv epd carB				
yanb zwf yach galP cysG ppk galP lysR pabB prmC ginL trpE iivC gshA panE ptsl apaH panE panE ptsl argE purM iivG recG pabC aroF speB guaB zwf ytfP pdxB filis cysC lepA surA purF lyxR pgl jwM epd carB pstC apaH thrA argG pahM ibwA epd carB pstC apaH thrA argG pahM ibwA purL gshA purL gshA purL gnd stmetC icc ghB gnd	-			
xseA - sodA - galP cysG - ppk galP galP - lysR pabB - lysR pabB - lysR ilvC - gshA apaH panE - pts largE - purM ilvG - recG pabC - speB - guaB zwf - mdh pdxB - filis cysC - lepA surA - pprF lysR - pgl ilvM - epd carB - pstC apaH - thrA argG - pabM aspC - gshA - purF lysR - pgl ilvM - epd carB - pstC apaH - thrA argG - pahM aspC - glnB - gnd - metC cyoB gshA - purF lybiB - srmB aspC - glnB - gnd bipA - glnB - gnd bipA - galR - znuB lamB - znuC cstA - thill malF - malT - ybiB - smB flgG metA - glnB - gnd bipA - galR - znuB lamB - znuC - cstA - thill malF - malT - ybiB - smB flgG metA - glnB - gnd bipA - galR - znuB - glnB - gnd bipA - galR - znuB - glnB - gnd bipA - galR - znuB - glnB - gnd bipA - galR - znuB - glnB - gnd bipA - galR - znuB - glnB - gnd bipA - galR - znuB - glnB - g	panB -			
sodA - galP - gyk ppk galP - gyk lysk - prmC glnL - ilvC - gshA surA - pyk ppk - gshA - papa - ptsl apaH - ptsl argE - ptsl purM - ivc ilvG - recG - pabC - aroF speB - guaB - ytfP	xseA -			
cysG galP - lysR pabB - prmC glnL ttrpE ilvC - gshA apaH panE - ptsl argE purM ilvG - recG pabC - aroF speB - guaB flis cysC - lepA surA - purF lysR - pgl ilvM - epd carB apaH - thrA argG - psbC gshA - purL thrA sdhB sapC - glnB smB aspC - glnB gnd bipA - glnB sipA gllB bipA - glnB sipA galR - znuB lamB cstA - thil malF malT galR - stA flumA ydcZ malQ yafV - dppA glnB metAS - yraM fumA matA galR - znuC cstA malQ malZ yafV - dppA metB sdhB ndk nadC sdhA ilrp armB glnG sdhD amb gllB glnB glnG sdhD amb glnB glnB glnC sdhD amb glnB glnB glnC sdhD amb glnB glnB glnC sdhD amb gltD sucC - gllB glnC sdhD amb gltD sucC - gltB	sodA -			
galP pabB prmC glnL trpE livC surA gshA panE ptsl argE prmG gree gabC recG pabC aroF speB guaB zwf mdh pdxB fliS cysC lepA surA pptf livM epd carB pstC apaH panH panH panH prm gree gabC glsA gree gabC gree				
pabB prmC surA surA pah pa				
ginL ilvC gshA apaH panE ptsl argE purM ilvG recG pabC aroF speB guaB guaB gwf pdxB fliS cysC lepA surA purF lysR pgl ilwM eppd carB pstC apaH panE pstC apaH prth pdxB gshA purL thrA argG purL thrA sdhB ybiB srmB aspC glnB gnd metC icc gdhB fliB grd metC gdr ghA purL thil wacB bioA bipA galR amalF malF malF malF malF malC grd malZ yafV ompF metF metF metB sdhB ndk sdhA pabB fadE sdhB pabB fadE glnC sdhA glnB arnE glnG glnG sdhA glnC glnC glnC glnC glnC ghA galR arnE glnC glnC glnC glnC glnC grd glnB grd glnC glnC grd glnC glnC glnC glnC glnC glnC glnC glnC			, ,	
ppk apaH apaH panE ptsl argE purM ilvG recG pabC aroF speB guaB zwf ytfP pdxB fils cysC lepA surA purF lysR pgl ilvM epd carB pstC apaH argG lepA surA purF tolC lepA surA sdhB ybiB srmB aspC glnB gnd icc sdhA glnB gnd retC sthil vacB bipA galR znuB lamB znuC cstA thil malF malT zur ytfM malK malF malZ yafV ompF metF envZ malQ malZ yafV ompF metF envZ malB lamB randC sdhA pabB fadE sdhB arnE glnG sucD glnB glnG sltD sucC glnB apabA arnE glnG sdtD amtB gltD sucC glnB sucD gltB gltD sucC glnB sucD gltB gltD sucC glnB sucD gltB gltD sucC gltB sdtD amtB gltD sucC gltB sdtD gltB gltD sucC gltB sdtD gltB gltD sucC gltB				
ppk panE ptsl ptsl purM ptsl purM ptsl purM ptsl purM purM purM purM purM purM purM purM				
panE argE purM purM purM purM purM purM purM purM			apaH -	
ilvG recG pabC aroF speB guaB zwf ytfP pdxB fliS cysC lepA surA purF lysR pgl ilvM epd carB pstC apaH argG tolC lepA gshA purL thrA sdhB ybiB srmB aspC glnB gnd metC icc sdhA glnB finB bipA pyrC thil vacB bioA bipA galR znuB lamB znuC cstA thil malF malT ybiB malZ yafV ompF uralZ gary fumA fumA ydcZ malQ yafV ompF uralB sucC sdhA pabB fadE gnd arge glnC glnC gmat gram gram gram gram gram gram gram gram				
ilvG pabC aroF speB guaB yuff pdxB fliS cysC lepA surA purF lysR pgl ilvM epd carB pstC apaH argG panM lepA cyoB gshA purL sdhB ybiB srmB aspC glnB gnd icc sdhA glnB bipA galR lamB crucC cstA thil walF malT armalZ malK malF malT argI fumA ybiB armB flgG metAS gnd yafV dppA dompF metF envZ matB flgG metAS sdhB ndk sdhA fadE glnL sdhB arnE sucD sdhD armE glnG glnG sdhD armE glnG glnG sdhD armE glnG glnG sdhD armE glnG sltD sucC gllB glnB sandB arnE sucD sdhD gllB gllD sucC gllB gltD sucC gllB gltD sucC glltB gltD sucC gllB	argE -			
speB zwf pdxB cysC lepA surA purF lysR pgl ilvM epd carB apaH argG lepA gshA purL thrA sdhB ybiB srmB aspC glnB gnd cicc glnB bipA bipA galR lamB crstA galR znuB lamB amalT malT malT malX malK malX malX malX malX malX malX malX malX	ilvG -			
speB zwf pdxB cysC lepA surA purF lysR pgl ilvM epd carB apaH argG lepA gshA purL thrA sdhB ybiB srmB aspC glnB gnd cicc glnB bipA bipA galR lamB crstA galR znuB lamB amalT malT malT malX malK malX malX malX malX malX malX malX malX	pabC -		aroF -	
zwf pdxB flis cysC lepA flis lepA purF lysR pgl ilvM epd carB pstC apaH thrA argG purL thrA sdhB ybiB srmB aspC glnB aspC glnB bipA pyrC thil wacB bioA bipA galR lamB cstA fumA malT malZ malK malF malZ yafV ompF ametA graft metAs graft graf			_ guaB -	
pdxB cysC lepA fliS cysC lepA purF lysR pgl ilvM epd carB pstC apaH argG panM argG purL thrA sdhB sybiB srmB aspC glnB glnB gnd icc sdhA glnB tgt bipA purC thill wacB bipA purC argB pipA galR znuB lamB znuC cstA thill shipA pyiB armB argC glnB dipA purC thill wacB bipA purC argh panM argC glnB glnB argmC argmC argmC sdhA glnB argmC ar				
cysC surA purF purF pgl ilvM purF pgl ilvM epd carB pstC pstC papAH argG panM tolC cyoB gshA purL sdhB srmB aspC glnB srmB aspC glnB gnd purC purC thill purC sdhA galR znuB bipA purC vacB bipA pipA pipA pipA pipA pipA pipA pipA				
surA - purF - pgl ilvM - epd carB - pstC - apaH - thrA - argG - panM - tolC - lepA - cyoB - purL - thrA - sdhB - ybiB - srmB - aspC - glnB - gnd - ticc - sdhA - glnB - titl - vacB - bipA - pyrC - thil - vacB - bipA - galR - znuB - lamB - znuC - cstA - thil - walF - malT - ybiB - zur - ytfM - bioD1 - malZ - yafV - ompF - metF - metF - metF - metAS - glnB - malA - malC - sdhA - pabB - fadE - glnL - sdhB - arnE - glnG - glnK - sucC - glnB - glnG - glnB - glnG - glnB - glnG - glnB - g			fliS	
lysR - ilvM - epd			lepA -	
ilvM carB pstC apaH pstC apaH pstC apaH pstC apaH panM tolC cyoB gshA cyoB gshA purL sdhB ybiB srmB aspC glnB gnd icc sdhA glnB bipA pyrC thil vacB bioA bipA galR znuB lamB znuC cstA malF malT apiB sucD sdhA ydcZ metAS metB sdhE nadB nadB nadB nadC sdhA pabB fadE sdhD apiB fltD gltB sucC gltB sdtD glnC sdhD amtB mdh gltD gltB sucC gltB sdtD gltB sucC gltB sdtD gltB sucC gltB sdtD gltB sdtD gltB sucC gltB sdtD gltB sdtD gltB sdtD gltB sucC gltB sdtD gltB sucC gltB sdtD gltB sucC gltB sdtD gltB sdtD gltB sucC gltB sdtD gltB sdtD gltB sdtD gltB sucC gltB sdtD gltD gltD gltB sdtD gltD gltB sdtD gltD gltD gltB sdtD gltD gltD gltD gltD gltD gltD gltD gl			purF -	
carB apaH argG lepA cyoB gshA purL thrA sdhB ybiB aspC gnd cicc sdhA glnB bipA bipA galR lamB cstA malF malIT malZ malK malK malQ malQ malQ yafV ompF metF envZ sdhB arnE sucD sdhA glnB fadE sdhD amb galR cyoB thil thrA purL sdhB pabA arnE glnC glnK sdhD amtB gltD sucC gltB			pgl -	
apaH argG panM tolC cyoB gshA purL sdhB ybiB aspC glnB glnB gnd icc gnd bipA pyrC thil vacB bioA galR znuB lamB znuC cstA thil fumA malF malF malZ ytfM bioD1 metAS fumA ydcZ malQ yafV ompF metF envZ sdhE nadB ndk nadC sdhA pabB fadE sdhB arnE sucD sdhD amtB gltD sucC glnB glnC glnR sdhD amtB gltD sucC gltB	il∨M −		epd -	
argG lepA cyoB gshA purL sdhB ybiB srmB aspC glnB metC icc sdhA glnB bipA pyrC thil vacB bioA bipA galR znuB lamB znuC cstA thil fumA ybiB amalT aur ytfM malT malZ yffM bioD1 metAS yafV ompF metF envZ sdhE ndk sdhA pabB fadE sucD sdhD amtB gltD sucC sdhD amtB gltD sltB	carB -			
lepA cyoB purL thrA sdhB ybiB srmB aspC glnB glnB gnd tgt bipA pyrC thill vacB bioA bipA galR lamB znuC thill malF malT aur ytfM malK bioD1 metAS fumA ydcZ malQ yafV ompF metF envZ metB sdhB arnE sucD sdhD amtB gltD sucC gltB mdh sucC glnB cyoB glrC gltB gltB arnB gltD gltB mdh sucC gltB gltB arnB gltD gltB gltD sucC gltB gltB gltD sucC gltB	apaH -			
lepA			panM	
gshA - purL - sdhB - ybiB - srmB - aspC - glnB - gnd - metC - sdhA - gnd - tgt - bipA - pyrC - thil - vacB - bipA - galR - znuB - lamB - znuC - cstA - thil - malF - ybiB - zur - malZ - ytfM - malK - bioD1 - metAS - yraM - fumA - ydcZ - malQ - malQ - malZ - yafV - ompF - glnG - metF - metF - metF - metB - sdhE - ndk - nadC - sdhA - pabB - fadE - glnL - sdhB - arnE - glnC - glnG - sucC - gltB - gltD - gltB - gltD - sucC - gltB - gltD - gltB - gltD - sucC - gltB - gltD - gltB - gltD - sucC - gltB - gltD - gltB - gltD - sucC - gltB - gltD				
thrA				
ybiB - srmB - glnB - gl				
aspC glnB gnd metC icc sdhA glnB gnd bipA tgt bipA pyrC thil vacB bipA znuB galR znuB lamB znuC cstA thil malF fumA ybiB zur malZ ytfM malZ ytfM metAS yraM fumA ydcZ malQ malZ yafV dppA ompF metB sdhE nadB ndk nadC sdhA pabB fadE glnL sdhB pabA arnE glnG sdhD amtB mdh gltD sucC gltB				
gnd sdhA gnd tgt pyrC vacB bipA pyrC vacB bipA galR znuB znuC cstA thil fumA ybiB zur ytfM bioD1 malZ ytfM bioD1 metAS malQ malZ dppA uvrB flgG metF metF metF metF metAS metB sdhE nadB nadC sdhA pabB fadE sdhB arnE sucD glnG sucC gltB metB sdlD matB mdh gltD sucC gltB slbip slbip				
SdhA gnd tgt pyrC thil vacB bipA galR znuB znuC cstA thil malF ybiB zur malZ ytfM bioD1 metAS yafV dppA dvacZ malQ matF metF metF metF metF metAS metB sdhE ndk nadC sdhA pabB fadE sdhD arnE sucD glnG sucC gltB sltD sucC gltB sdtD sucC gltB sdtA sqltD sltD				
Section Sect	gnd –			
bipA -	icc -			
bipA pyrC vacB bioA bipA galR znuB znuC cstA thil sur malF ybiB zur malZ ytfM bioD1 metAS yafV dppA dppA wrgAV dppA wrgAV dppA wrgAV dppA sur metF metF metF metF madB ndk nadC sdhA pabB fadE sdhB arnE sucD sucC gltB gltB gltD sucC gltB	glnB -			
thil bioA bioA bipA galR znuB znuC cstA thil malF ybiB zur malZ ytiM bioD1 metAS malQ malQ malZ dppA wrapa yafV dppA wrapa yafV dppA metF metF metF metF malA malA ndk nadC sdhA pabB fadE sdhB arnE sucD sucC gltB gltB gltD sucC gltB			tgt	
bioA bipA sipA sipA sipA sipA sipA sipA sipA s				
galR znuB lamB znuC cstA thil malF fumA malT zur malZ ytfM malK bioD1 metAS yraM fumA ydcZ malQ malZ yafV dppA ompF flgG metAS metB sdhE nadB ndk nadC sdhA pabB fadE glnL sdhB pabA arnE glnG sdhD amtB mdh gltD sucC gltB				
lamB - znuC - thil - fumA - ybiB - zur - ybiB - zur - ytfM - bioD1 - yraM - ydcZ - malQ - ydcZ - malQ - yafV - dppA - uvrB - flgG - metF - metF - metB - sdhE - ndk - nadC - sdhA - pabB - fadE - glnL - sdhB - arnE - sucD - sucC - gltB - sucC - succC				
cstA thil malF fumA malT zur malZ ytfM malK bioD1 metAS yraM fumA ydcZ malQ malZ yafV dppA ompF flgG metAS metB sdhE nadB ndk nadC sdhA pabB fadE glnL sdhB pabA arnE glnG sdhD amtB mdh gltD sucC gltB			_	
malF - ybiB - zur - ytfM - malZ - ytfM - bioD1 - metAS - yafV - dppA - uvrB - flgG - metF - metF - metB - sdhE - ndk - nadC - sdhA - pabB - fadE - sdhB - arnE - sucD - sucD - sdhD - mdh - sucC - gltB - sucC - gltB - sdtB - mdh - sucC - gltB - sdtB - mdh - sucC - gltB - sdtB - mdh - sucC - gltB - sdtB -				
malT ybiB malZ ytfM malK bioD1 metAS yraM fumA ydcZ malQ malZ yafV dppA ompF flgG metF metAS envZ metB sdhE nadB ndk nadC sdhA pabB fadE glnL sdhB pabA arnE glnG sdhD amtB mdh gltD sucC gltB				
malZ - ytfM - bioD1 - yraM - wraM - yraM - wraM - w				
malZ ytfM malK bioD1 metAS yraM fumA ydcZ malQ malZ dppA uvrB ompF flgG metF metB sdhE nadB ndk nadC sdhA pabB fadE glnL sdhB pabA arnE glnG sdhD amtB mdh gltD sucC gltB				
malk bioD1 yraM fumA ydcZ malQ malZ dppA dppA dppA dppA dppA dppA dppA dpp				
metAS - yraM - ydcZ - malQ - malZ - dppA - uvrB - flgG - metAS - metB - nadB - nadC - sdhA - pabB - fadE - glnL - sdhB - arnE - sucD - sdhD - amtB - mdh - sucC - gltB - sucC - gltB - sucC - gltB - sucC - gltB - sdtB - gltD - gltB - sdtB - sdtB - gltD - gltB - sdtB - sdtB - gltD - gltB - sdtB - s	malK -			
fumA ydcZ malQ malZ yafV dppA ompF flgG metF metAS envZ metB sdhE nadB ndk nadC sdhA pabB fadE glnL sdhB lrp arnE glnG sucD glnK sdhD amtB mdh gltD sucC gltB	metAS -			
malQ malZ yafV dppA ompF uvrB metF metAS envZ metB sdhE nadB ndk nadC sdhA pabB fadE glnL sdhB lrp arnE glnG sucD glnK sdhD amtB mdh gltD sucC gltB				
yafV - dppA - ompF - uvrB - metF - flgG - envZ - metAS - sdhE - nadB - ndk - nadC - sdhA - pabB - fadE - glnL - sdhB - pabA - arnE - glnG - sucD - glnK - sdhD - amtB - mdh - gltD - sucC - gltB -				
ompF				
metF - metAS - metAS - metB - sdhE - nadB - nadC - sdhA - pabB - fadE - glnL - sdhB - arnE - sucD - sucD - sdhD - amtB - mdh - sucC - gltB - gltB - sucC - gltB - gltB - sucC - gltB - sltB - sucC - gltB - sltB - s				
metAS - metB - sdhE - nadB - nadC - sdhA - pabB - fadE - glnL - sdhB - arnE - sucD - sdhD - adhD - adhD - adhD - sdhD - adhD - adhD - adhD - adhB - gltD - sucC - gltB - sdtB - gltD - sucC - gltB - sdtB - gltD - sucC - gltB - sdtB - sdtB - gltD - sucC - gltB - sdtB - s				
env2 -				
sdhE - nadB - nadC - sdhA - pabB - fadE - glnL - sdhB - lrp - glnG - glnK - sdhD - amtB - mdh - gltD - sucC - gltB - sdhB - sdhB - gltB - sdhB - sdhB - gltB - sdhB - gltB - sdhB				
ndk - nadC - sdhA - pabB - fadE - glnL - sdhB - pabA - arnE - lrp - sucD - glnG - sdhD - amtB - mdh - gltD - sucC - gltB -				
sdhA - pabB - fadE - glnL - sdhB - pabA - arnE - glnG - sucD - glnK - sdhD - amtB - mdh - gltD - sucC - gltB -				
fadE - glnL - sdhB - pabA - arnE - lrp - sucD - glnG - sdhD - amtB - mdh - gltD - sucC - gltB -	sdhA -		− pabB −	
sdhB - pabA - Irp - glnG - glnK - sdhD - amtB - gltD - sucC - gltB -			_ ˈglnL -	
arnE - glnG - glnK - sdhD - amtB - gltD - sucC - gltB -				
sucD - glnG - glnK - sdhD - amtB - gltD - sucC - gltB -				
sdhD - amtB - gltD - sucC - gltB -			glnĠ -	
sdnD = amtB = gltD = sucC = gltB = gltB = gltB			glnK	
sucC - gltB - gltB			amtB -	
sucC - gltB -			gltD -	
ETRUE MTRUE	sucC -		gltB -	
0_		ETRUE		MTRUE