The list of reaction that undergoes minor to major flux alteration in wildtype compared to mutant from Scheme\_0 OptGene simulation.

Yellow highlight shows the reaction in cyanide pathway production that begins from the 3-phosphoglycerate (3pg) conversion in glycolysis reaction.

No	Reaction	Value		Capture		
		Before	After	Before	After	
1	GLCpts	3.67	0.00	90_0.s  GLCpts 3.67  PMP_S  ORD_S	GLCpts 0.00 PPT_6	
2	PGI	9.96	9.97	PGI 9.96	PGI 9.97	
3	PFK	6.75	6.87	## atp_c  ## PFK 6.75  ## adp_c  ## h_c  ## fdp_c	atp_c  PFK 6.87  adp_c  h_c  fdp_c	
4	FBA	6.75	6.87	FBA (75  thap_c  TPI -6.7	### ### ### ### ### ### ### ### ### ##	
5	TPI	-6.7?	-6.8?	FBA (75)	### ### ### ### ### ### ### ### ### ##	
6	TKT2	3.13	3.06	762.5 PRK 6.78 160.5 100.5 100.5	PFK 6.87  TKT2 3.06  170 170 170 170 170 170 170 170 170 170	
7	GADP	13.3	13.7	93p_c 7 = 0.7  nad_c pi_c GAPD 13.3  h_c nadh_c	93p.e 11-6.8 nad_c pl_e GAPD 13.7	

	1	1			
8	PGK	-13.3	-13.7	13dpg_c  adp_c  PGK -13.3  c  c 3.5  atp_c  3pg_c	13dp_c adp_c PGK -13.7 1_c 1_c 8.72 atp_c 3pg_c
9	Rxn01101_c	3.54	8.72	_L_c	3php_c nadh_c rxi 01101_c 8.72 3pg_c 1.72 PGM
10	Rxn02914_c	-3.54	<del>-8.72</del>	akg_c glu_L_c 3php_c rxn02914_c -3.54	akg_c glu_L_c 3php_c rxn02914_c -8.72
11	Rxn00420_c	3.54	8.72	pser_L_c  rxn00420_c 3.54  pi_c  ser_L_c	pser_i_c  rxn00420_c 8.72  h_c  pi_c  ser_i_c
12	rDB00166_c	0.275	5.58	ool_c nadp_c nadp_c py_c rDB00166_c 0.275	oo2_s nadp_s  oo2_s nadp_s  orxn00692_c -5.68  orxn00692_c -5.68  orxn00692_c -5.68
13	Rxn00692_c	<del>-0.460</del>	<u>-5.68</u>	oo_c nadp_c nadp_c py_c rDB00166_c 0.275	oo2_s nade_s   ordeh_c   orxn00692_c -5.68
14	PGM	-9.80	-4.94	PGM -9.80  2pg_c  ENO 9.80	PGM -4.94  2pg_c  ENO 4.94
15	ENO	9.80	4.94	PGM -9.80  2pg_c  ENO 9.80	PGM -4.94  2pg_c  ENO 4.94

16	PPS	0.00	1.11	pi_c h_c amp_c ad h.  PPS 0°00	PPS 1°11
17	CHORM	0.0578	0.0309	chor_c  CHORM 0.0578  ned-	chor_c  CHORM 0.0309  ng
18	PPNDH	0.0330	0.0177	pphn_c  700  h_c  PPNDH 00330  h20_c  co2_c  phpyr_c  0.0248	pphn_c (,00  PPNDH
19	TYRTA	-0.0248	-0.0133	TYRTA -0.0248	tyr_L_c
20	PHETA	0.0330	0.0177	_L_c  PHETA1 (00330  akg_c  phe_L_c	PHETA1 (00177
21	CHORS	3.06	3.02	CHORS 3.06	Spsme_c  CHORS 3.02
22	PSCVT	3.06	3.02	PSCVT 3.06 akm5p_c	PSCVT 3.02 skm5p_o
23	DDPA	3.06	3.02	top_c	exacts pep_c
24	DHQS	3.06	3.02	DDPA 3.06	DDPA 3.02
25	DHQD	3.06	3.02	2dda7p_c DHQS 3.06 pi_c	2dda7p_c DHQS 3.02 pi_c
26	SHK3D	3.06	3.02	ρ <u>i</u> σ Janq_o	Jahq_c
27	SHKK	3.06	3.02	SHKK \$0640.c	skm_c SHK3D 502 h2c,e  alp_c SHKS 089p_c nadph_c  n_c sadp_c  PSCVT 3.02 skm5p_c
28	RPE	3.??	3.??		

29	RPI	3.15	3.07
30	TKT1	0.0484	0.0259
31	TALA	-0.0718	-0.0385
32	NADTRHD	-11.7	-21.4
33	ADK1	3.47	4.34
34	ATPS4r	38.7	37.1
35	EX_h_e	9.44	22.7
36	NADH16	26.0	28.0
37	PDH	10.8	9.98
38	PTAr	0.00	3.33
39	ACKr	0.00	3.33
40	ACt2r	-6.94e-18	-3.35

41	EX_ac_e	0.00	3.35	AC.  PTAr 0.00  COB_C  actp_c  adp_c  ACKr 0.00  atp_c  ac_c  h_c  ACt2r -6.94e-18  EX_ac_e 0.00	ACTOR
42	ACALD	0.000779	0.000417	nadh_c h_c nad_c coa_c acald_c ACALD 0.000779	nadh_c h_c nad_c coa_c acaid_c ACALD 0.000417
43	EX_pi_e	-0.339	-0.181	Pi_e  EX_pi_e -0.339	pi_e EX_pi_e -0.181
44	H2Ot	50.7	29.9	0 02.0 ⊕ not_0	0 h0≥ 0 00≥ 0 mh4_0
45	EX_h2o_e	50.7	29.9	H2Ot 50.7 CO2t -22.6 NH4t 6.28	H2Ot 29.9 CO2t -30.3 NH4t 0.00
46	CO2t	-22.6	-30.3	ndu_e co2_e ont_e	100_e 002_e 004_e
47	EX_co2_e	22.6	30.3	EX_h2o_e 50.7	EX_h2o_e 29.9
48	NH4t	6.28	0.00		
49	EX_nh4_e	-6.28	0.00		
50	Biomass1.12	0.252	0.135	atp_c  4p_c  93p_c  h2c_c  biomass1.12 0.252	biomass1.12 0.135
51	CS	5.09	3.12	coa_c coa_c h_c	oaa_c  CS 3.12  coa_c  h_c  h_c

52	MDH	10.4	6.37	nad_c MDH 10.4  h_c  nadh_c	mad_c  MDH 6.37  h_c  nadh_c
53	FUM	-5.31	-3.24	h2o_c fum_c	h2o_c fum_c
54	SUCDi	5.13	3.19	98h2_c q8_c SUCDi 5.13	q8h2_c q8_c SUCDi 3.19
55	MALS	5.10	3.12	MALS 5.10  accoa_c  h_c  MALS 5.10  accoa_c  plz_c	MALS 3.12  MALS 3.12  accoa_c  h_c  place  glx_c
56	ICL	5.09	3.12	ICL 5.09	ICL 3.12
57	AKGDH	0.053?	0.028?	akg_c	succoa_c nadh_c co2_c  AKGDH 0.028   coa_c nad_c nh4_c iph_c
58	GLUDy	4.52	9.18	nadph_c h_c nadp_ch2o_c nh4_c glu_L_c GLUDy 4.52	nadph_c h_c nadp_ch2o_c nh4_c glu_L GLUDy 9.18

59	GLNS	4.84	9.35	glu_L_c  h_c  atp_c  nh4_c  oGLUN 609LNS 4.84	glu_L_c  h_c  atp_c  nh4_c  oGLUN G Q LNS 9.35  adp_c  h_c  pi_c  gln_L_c  G
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