# Summary

December 21, 2023

# Contents

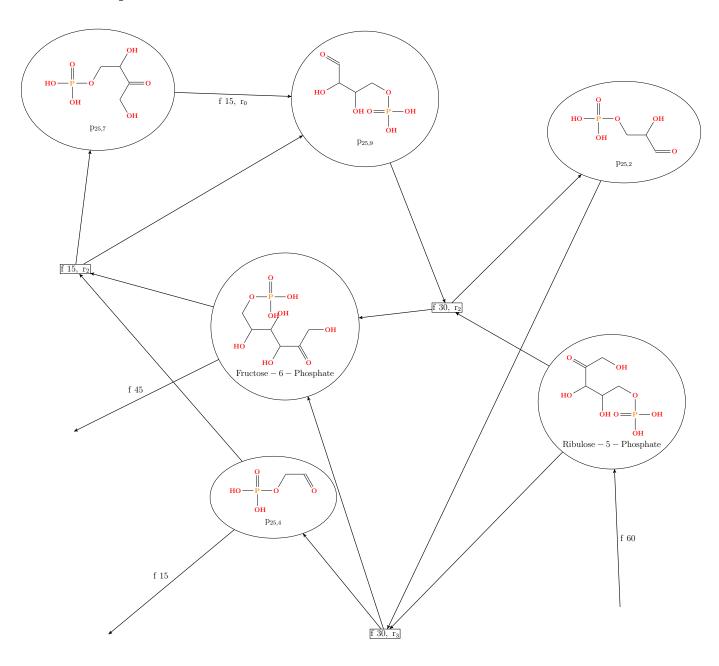
0.1	Enzymes: [Aldose-Ketose textless-(0), Transketolase(2), Transaldolase(3)]
0.2	Flow Solutions, id 25
	0.2.1 Solution 0
0.3	Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose -textgreater(1), Transketolase(2),
	Transaldolase(3)]
0.4	Flow Solutions, id 41
	0.4.1 Solution 0
0.5	Enzymes: [Aldose-Ketose textless-(0), Transketolase(2), Transaldolase(3), Aldolase(4)]
0.6	Flow Solutions, id 47
	0.6.1 Solution 0
0.7	Enzymes: [Aldose-Ketose textless-(0), Transketolase(2), Transaldolase(3), Phophohy-
	$drolase(5)] \qquad \dots $
0.8	Flow Solutions, id 48
	0.8.1 Solution 0
0.9	Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose -textgreater(1), Transketolase(2),
	$Transaldolase(3), Aldolase(4)] \dots \dots$
0.10	Flow Solutions, id 56
	0.10.1 Solution 0
0.11	Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose -textgreater(1), Transketolase(2),
	$Transaldolase(3), Phophohydrolase(5)] \dots \dots$
0.12	Flow Solutions, id 57
	0.12.1 Solution 0
0.13	Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose -textgreater(1), Transketolase(2),
	Aldolase(4), Phophohydrolase(5)]
0.14	Flow Solutions, id 58
	0.14.1 Solution 0
0.15	Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose -textgreater(1), Transaldolase(3),
	Aldolase(4), Phophohydrolase(5)]
0.16	Flow Solutions, id 59
	0.16.1 Solution 0
0.17	Enzymes: [Aldose-Ketose textless-(0), Transketolase(2), Transaldolase(3), Aldolase(4),
	Phophohydrolase(5)]
0.18	Flow Solutions, id 60
	0.18.1 Solution 0
0.19	Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose -textgreater(1), Transketolase(2),
	Transaldolase(3), Aldolase(4), Phophohydrolase(5)]
0.20	Flow Solutions, id 62
	0.20.1 Solution 0
0.21	Results

- $\begin{array}{ll} 0.1 & Enzymes: \ [Aldose-Ketose\ textless-(0),\ Transketolase(2),\\ & Transaldolase(3)] \end{array}$
- 0.2 Flow Solutions, id 25

#### **0.2.1** Solution 0

#### Overall Data

Objective value (integral): -45
Vertex/Graph In Out
Fructose-6-Phosphate 0 45
Ribulose-5-Phosphate 60 0
p\_{25,4} 0 15



File: out/015\_dg\_25\_11100\_f\_25\_0\_filt

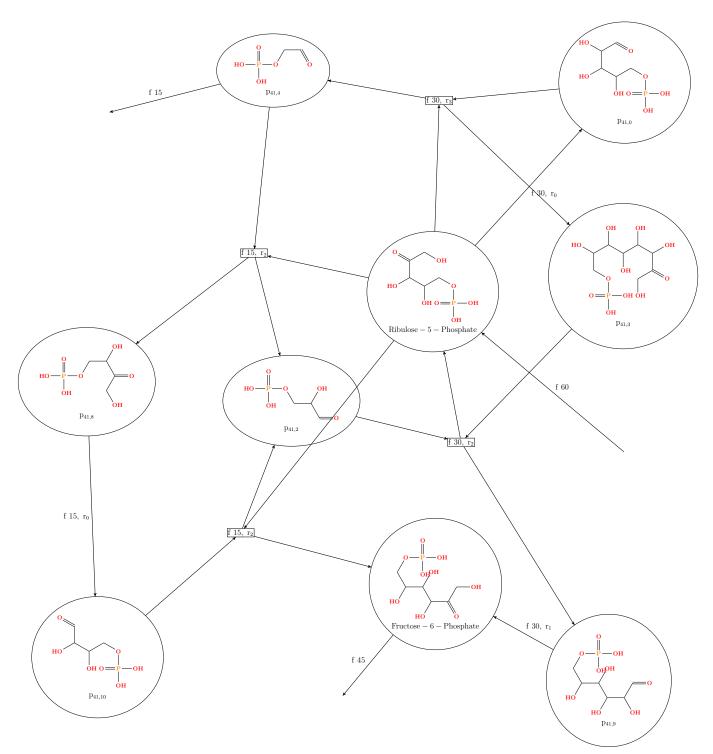
# 0.3 Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose - textgreater(1), Transketolase(2), Transaldolase(3)]

# 0.4 Flow Solutions, id 41

#### 0.4.1 Solution 0

#### Overall Data

Objective value (integral): -45 Vertex/Graph In Out Fructose-6-Phosphate 0 45



 $File: \ \mathtt{out/033\_dg\_41\_11100\_f\_41\_0\_filt}$ 

# 0.5 Enzymes: [Aldose-Ketose textless-(0), Transketolase(2), Transaldolase(3), Aldolase(4)]

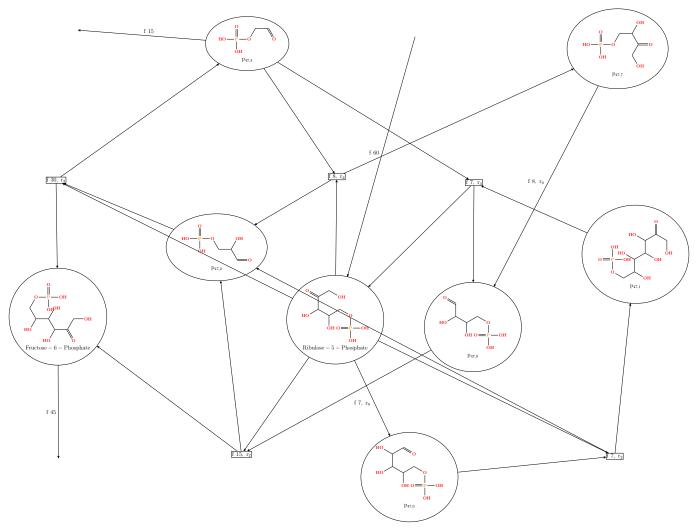
# 0.6 Flow Solutions, id 47

#### 0.6.1 Solution 0

#### Overall Data

Objective value (integral): -45
Vertex/Graph In Out
Fructose-6-Phosphate 0 45
Ribulose-5-Phosphate 60 0
p\_{47,4} 0 15

#### Filtered Graph



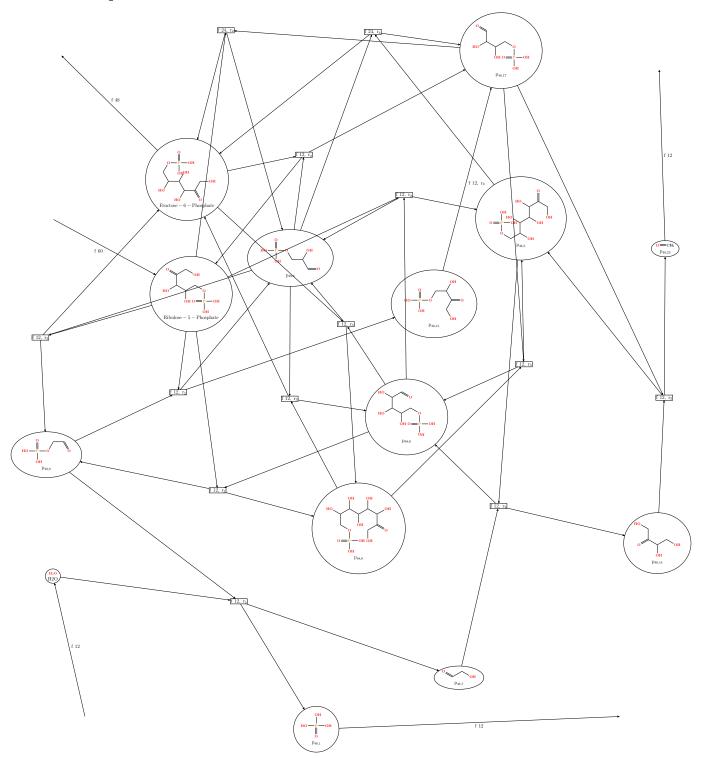
 $File: \ {\tt out/049\_dg\_47\_11100\_f\_47\_0\_filt}$ 

- 0.7 Enzymes: [Aldose-Ketose textless-(0), Transketolase(2), Transaldolase(3), Phophohydrolase(5)]
- 0.8 Flow Solutions, id 48

#### **0.8.1** Solution 0

#### Overall Data

Objective value (integral): -48 Vertex/Graph In Out Fructose-6-Phosphate 0 48 H2O 12 0 Ribulose-5-Phosphate 60 0 p\_{48,1} 0 12 p\_{48,23} 0 12



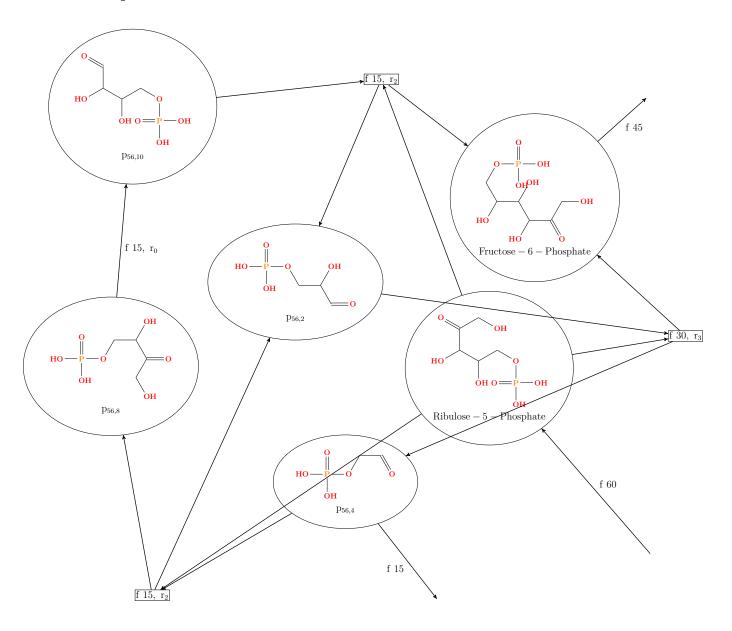
 $File: \ {\tt out/077\_dg\_48\_11100\_f\_48\_0\_filt}$ 

- 0.9 Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose textgreater(1), Transketolase(2), Transaldolase(3), Aldolase(4)]
- 0.10 Flow Solutions, id 56

#### 0.10.1 Solution 0

#### Overall Data

Objective value (integral): -45 Vertex/Graph In Out Fructose-6-Phosphate 0 45 Ribulose-5-Phosphate 60 0 p\_{56,4} 0 15



File: out/089\_dg\_56\_11100\_f\_56\_0\_filt

# 0.11 Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose - textgreater(1), Transketolase(2), Transaldolase(3), Phophohydrolase(5)]

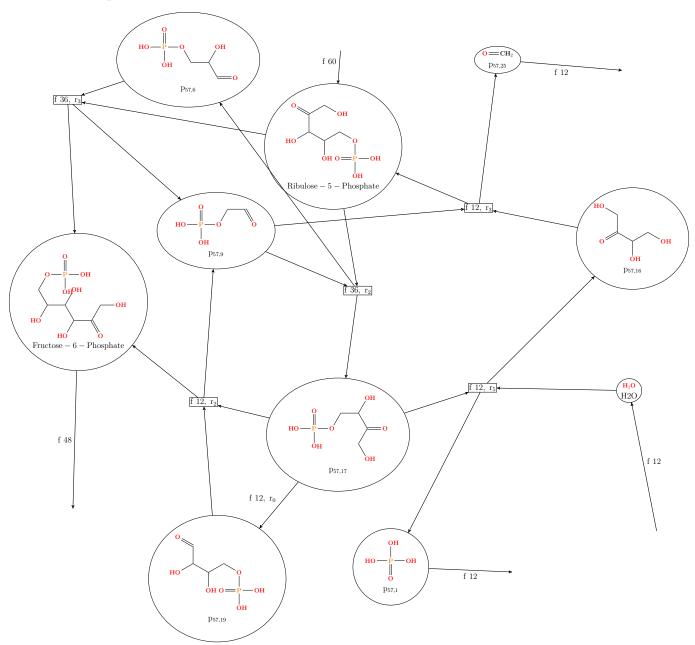
# 0.12 Flow Solutions, id 57

#### 0.12.1 Solution 0

#### Overall Data

Objective value (integral): -48 Vertex/Graph In Out Fructose-6-Phosphate 0 48

H20	12	0
Ribulose-5-Phosphate	60	0
p_{57,1}	0	12
p_{57,25}	0	12



 $File: \ {\tt out/107\_dg\_57\_11100\_f\_57\_0\_filt}$ 

# 0.13 Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose - textgreater(1), Transketolase(2), Aldolase(4), Phophohydrolase(5)]

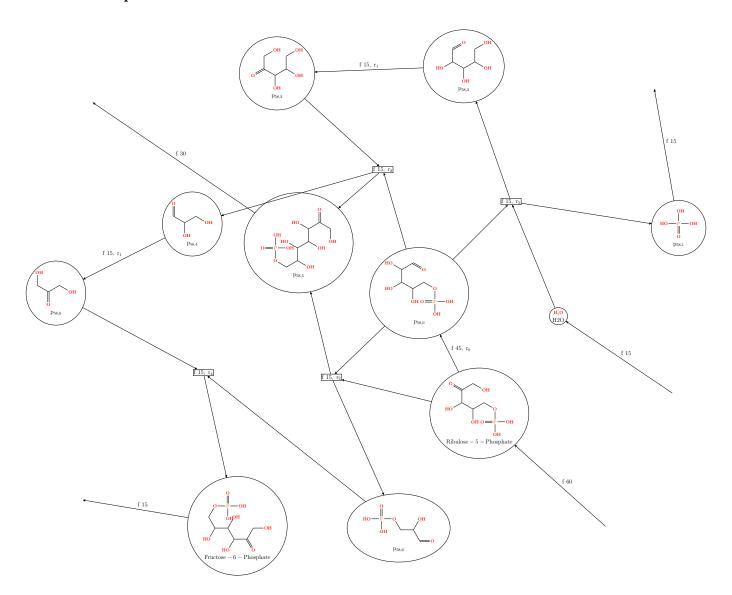
# 0.14 Flow Solutions, id 58

#### 0.14.1 Solution 0

#### Overall Data

Objective value (integral): -15
Vertex/Graph In Out
Fructose-6-Phosphate 0 15
H2O 15 0
Ribulose-5-Phosphate 60 0
p\_{58,1} 0 15
p\_{58,5} 0 30

#### Filtered Graph

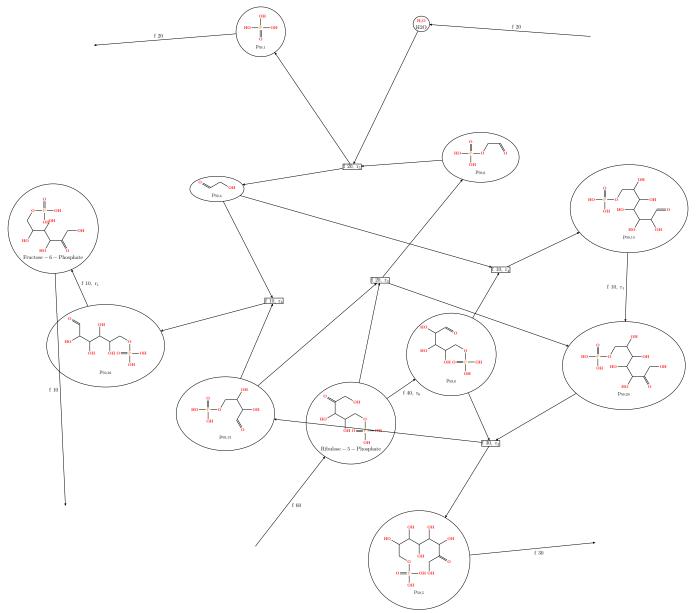


- 0.15 Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose textgreater(1), Transaldolase(3), Aldolase(4), Phophohydrolase(5)]
- 0.16 Flow Solutions, id 59

#### 0.16.1 Solution 0

#### Overall Data

Objective value (integral): -10
Vertex/Graph In Out
Fructose-6-Phosphate 0 10
H2O 20 0
Ribulose-5-Phosphate 60 0
p\_{59,1} 0 20
p\_{59,5} 0 30



File: out/149\_dg\_59\_11100\_f\_59\_0\_filt

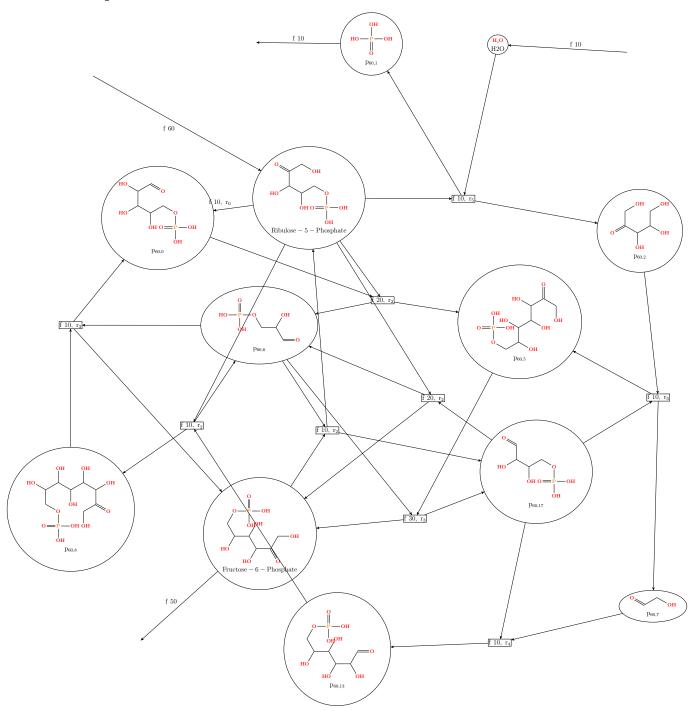
# 0.17 Enzymes: [Aldose-Ketose textless-(0), Transketolase(2), Transaldolase(3), Aldolase(4), Phophohydrolase(5)]

# 0.18 Flow Solutions, id 60

#### 0.18.1 Solution 0

#### Overall Data

Objective value (integral): -50 Vertex/Graph In Out Fructose-6-Phosphate 0 50 H2O 10 0



 $File: \ {\tt out/171\_dg\_60\_11100\_f\_60\_0\_filt}$ 

# 0.19 Enzymes: [Aldose-Ketose textless-(0), Aldose-Ketose - textgreater(1), Transketolase(2), Transaldolase(3), Aldolase(4), Phophohydrolase(5)]

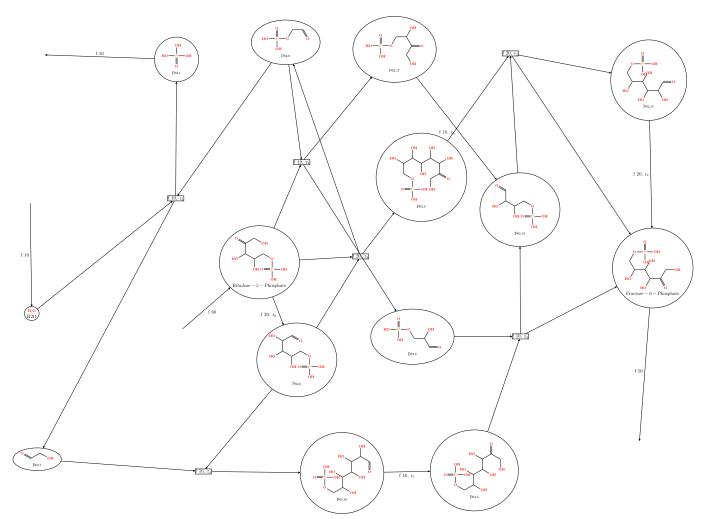
### 0.20 Flow Solutions, id 62

#### 0.20.1 Solution 0

#### Overall Data

Objective value (integral): -50
Vertex/Graph In Out
Fructose-6-Phosphate 0 50
H2O 10 0
Ribulose-5-Phosphate 60 0
p\_{62,1} 0 10

#### Filtered Graph



File: out/197\_dg\_62\_11100\_f\_62\_0\_filt

# 0.21 Results

id	#enzymes	enzymes	#fructose	#waste	#w/#f	#reactions
		'Aldose-Ketose <-'				
		'Aldose-Ketose ->'				
		'Transketolase'				
		'Transaldolase'				
		'Aldolase'				
0	6	'Phophohydrolase'	50	10	0.2	150
		'Aldose-Ketose <-'				
		'Transketolase'				
		'Transaldolase'				
		'Aldolase'				
1	5	'Phophohydrolase'	50	10	0.2	140
		'Aldose-Ketose <-'				
		'Aldose-Ketose ->'				
		'Transaldolase'				
		'Aldolase'				
2	5	'Phophohydrolase'	10	50	5.0	150
		'Aldose-Ketose <-'				
		'Aldose-Ketose ->'				
		'Transketolase'				
		'Aldolase'				
3	5	'Phophohydrolase'	15	45	3.0	135
		'Aldose-Ketose <-'				
		'Aldose-Ketose ->'				
		'Transketolase'				
		'Transaldolase'				
4	5	'Phophohydrolase'	48	24	0.5	120
		'Aldose-Ketose <-'				
		'Aldose-Ketose ->'				
		'Transketolase'				
	_	'Transaldolase'			0.0000	
5	5	'Aldolase'	45	15	0.3333	75
		'Aldose-Ketose <-'				
		'Transketolase'				
	4	'Transaldolase'	40	0.4		100
6	4	'Phophohydrolase'	48	24	0.5	192
		'Aldose-Ketose <-'				
		'Transketolase'				
7	4	'Transaldolase'	4 5	1 1	0.0000	00
7	4	'Aldolase'	45	15	0.3333	82
		'Aldose-Ketose <-'				
		'Aldose-Ketose ->'				
	4	'Transketolase'	45	1 5	0.0000	1.05
8	4	'Transaldolase'	45	15	0.3333	165
		'Aldose-Ketose <-'				
	9	'Transketolase'	4 5	1 1	0.0000	
9	3	'Transaldolase'	45	15	0.3333	90