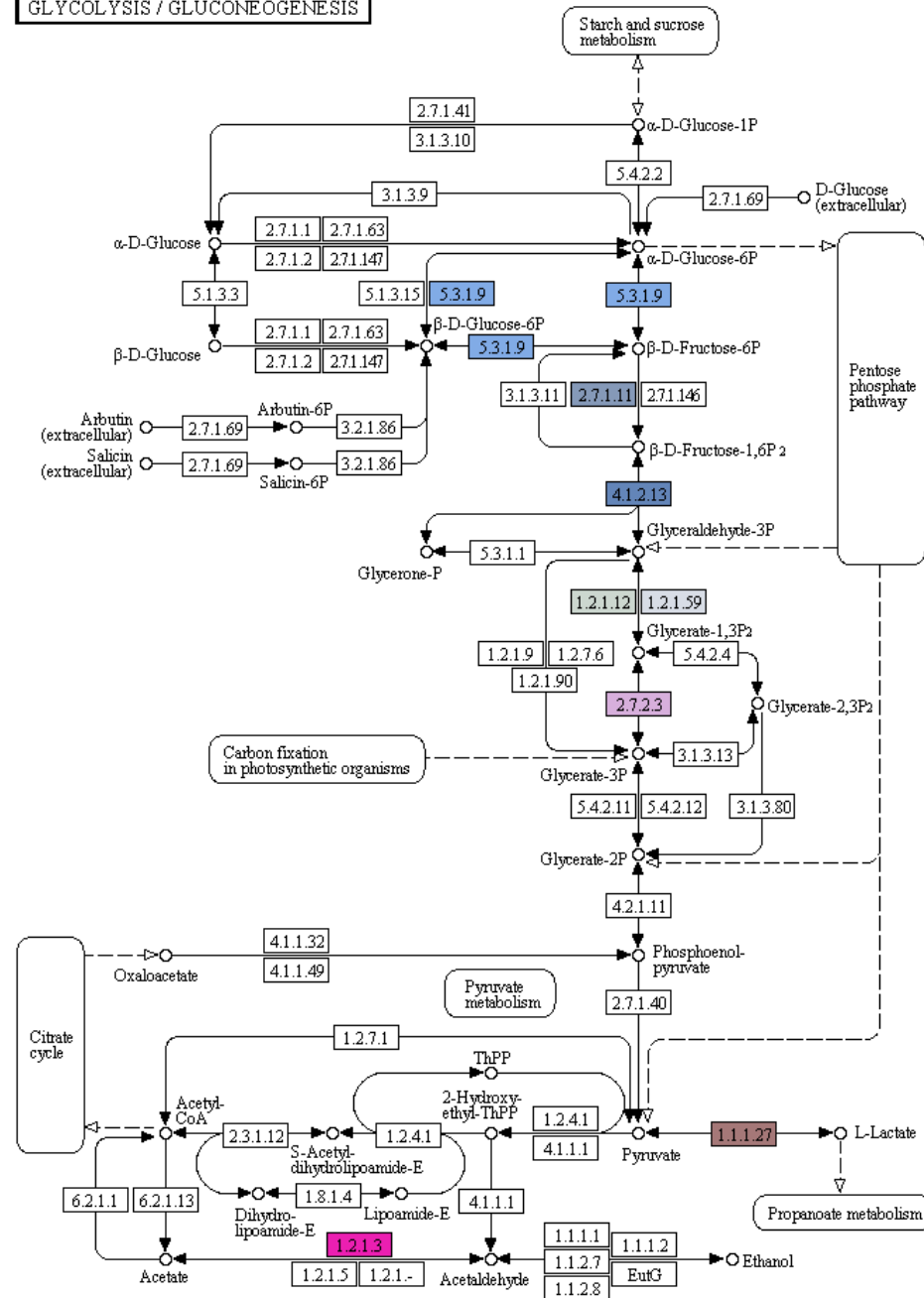
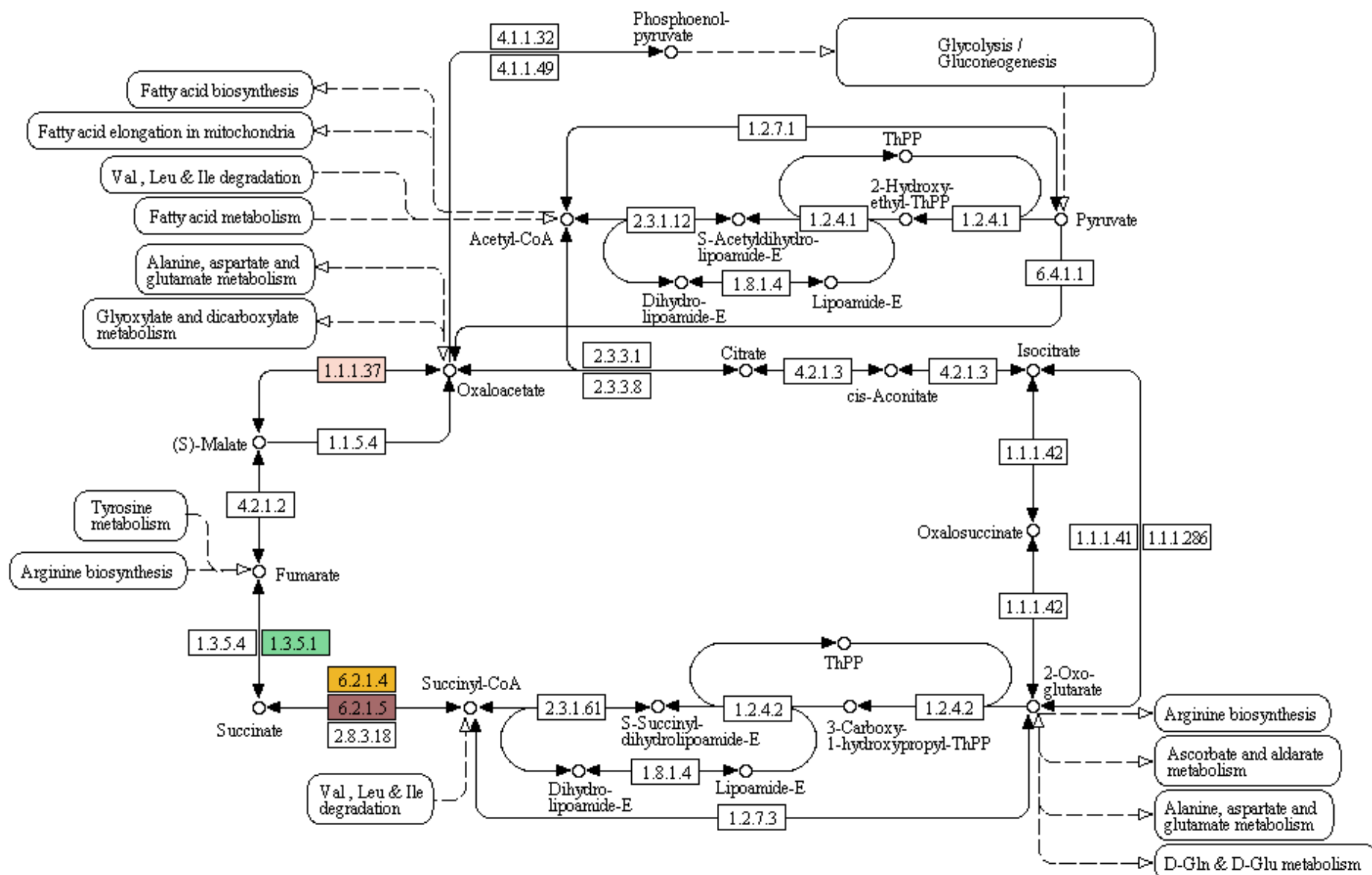


Figure S4. Mapping of differentially expressed enzymes in leaves due to salinity stress on the KEGG.

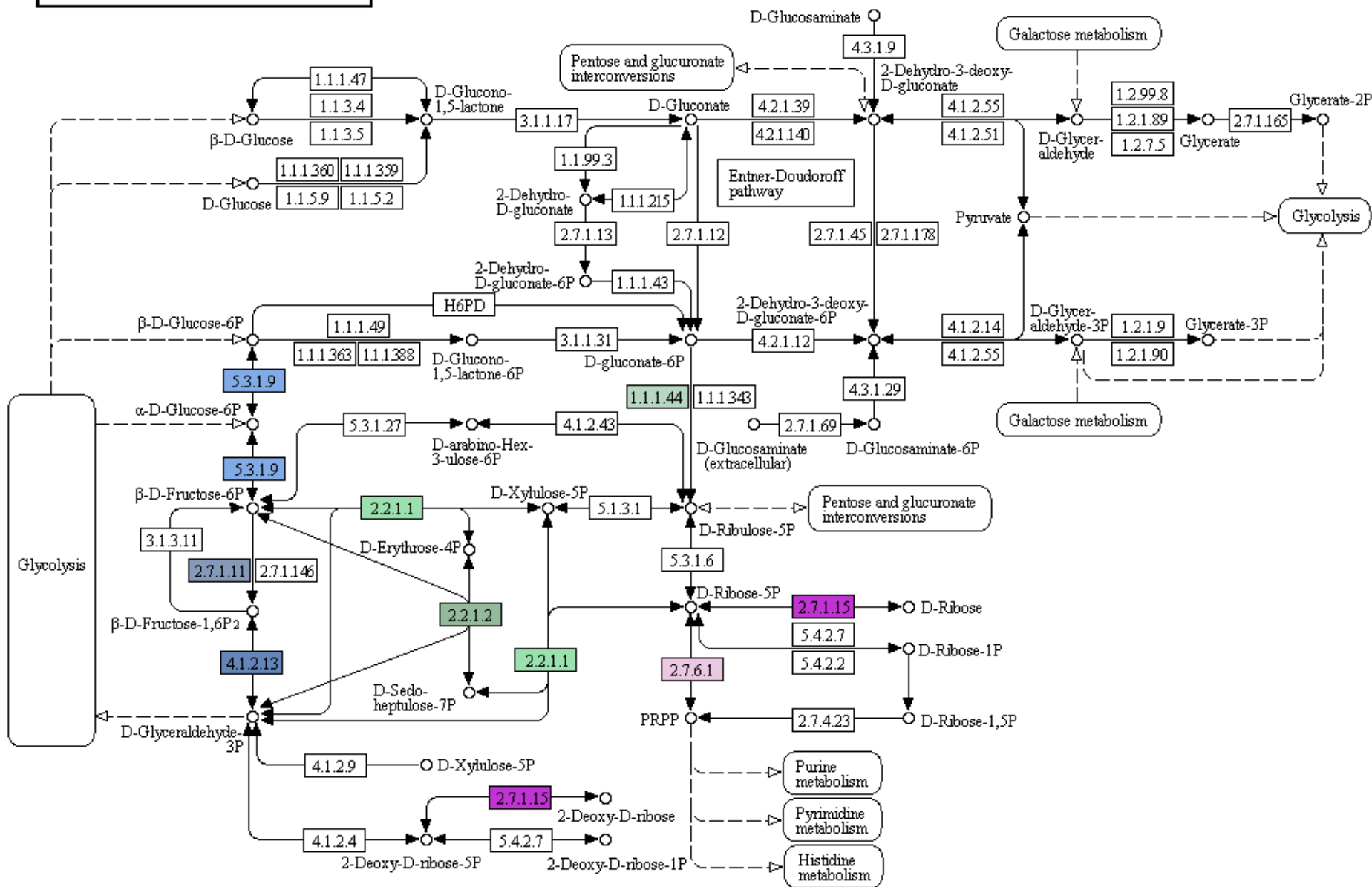
GLYCOLYSIS / GLUCONEOGENESIS



CITRATE CYCLE (TCA CYCLE)



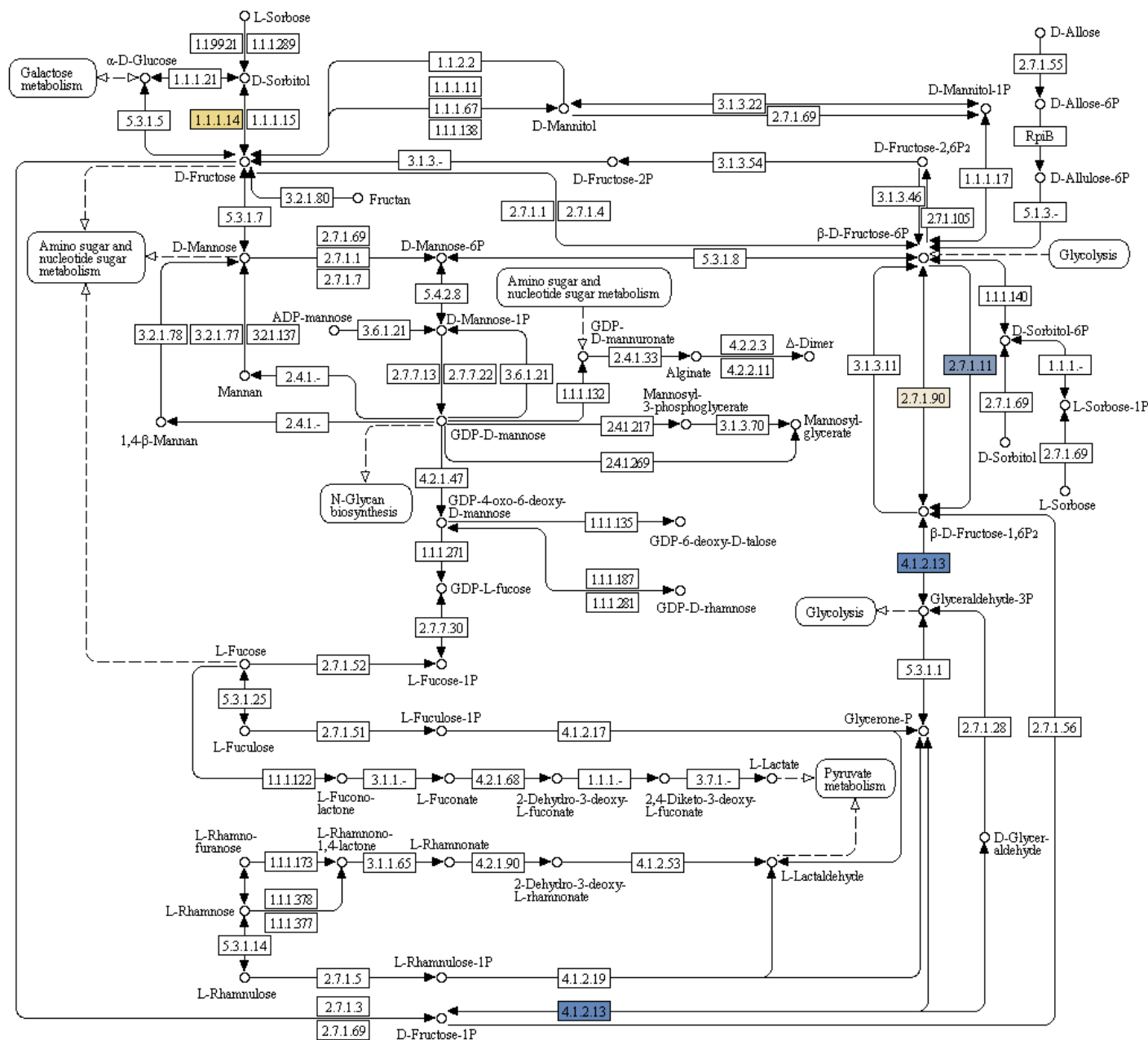
PENTOSE PHOSPHATE PATHWAY



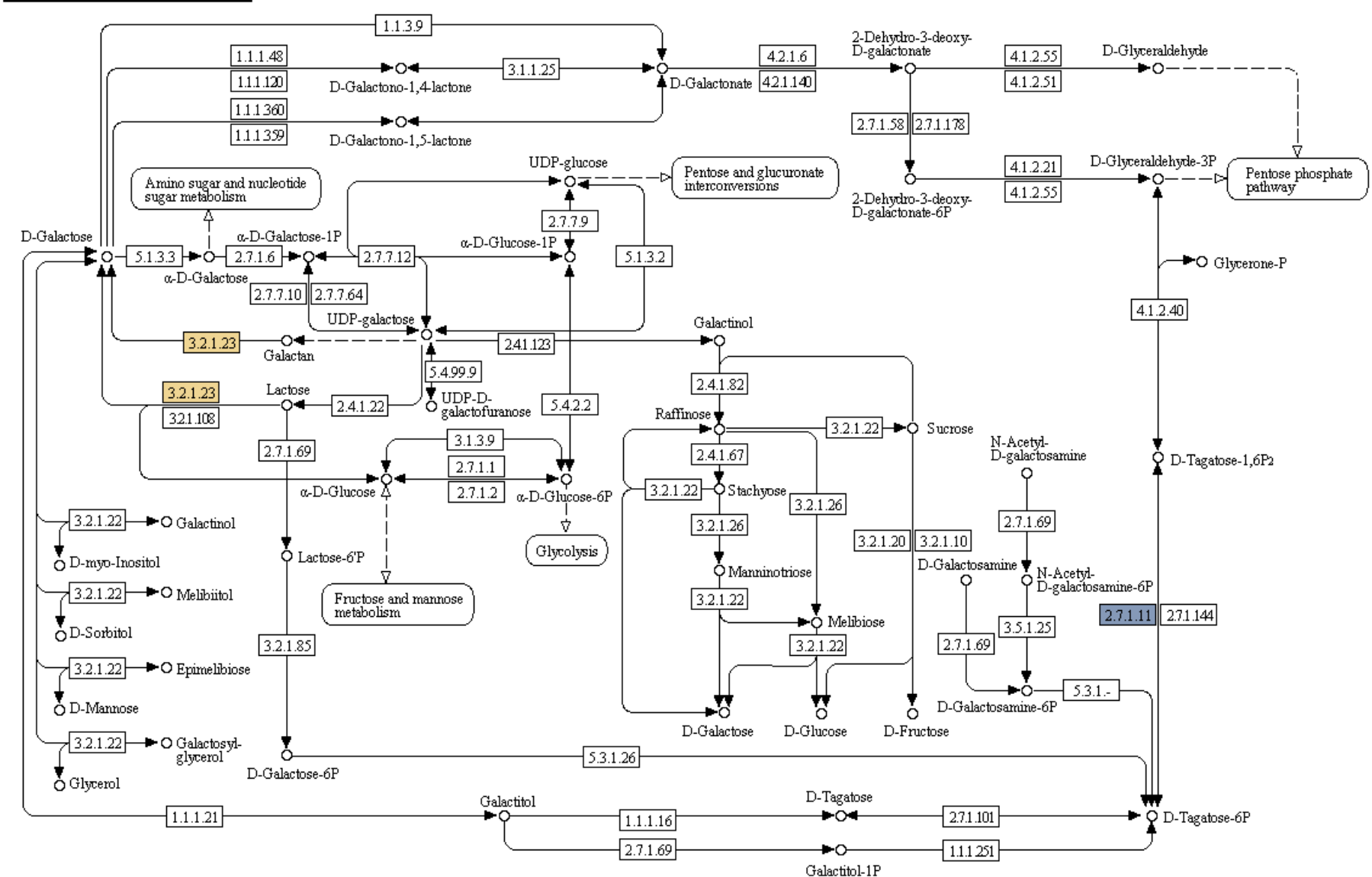
This metabolic map illustrates the central role of the pentose phosphate pathway (PPP) in cellular metabolism. The PPP is shown as a central hub, with various enzymes (EC numbers) and metabolites (names) involved in its regulation and function. Key features include:

- Central Metabolites:** D-Glucose-6-phosphate (D-G6P) is the starting point, which can be converted to Fructose-6-phosphate (F6P) or enter the PPP. Other central metabolites include D-Glucose-1-phosphate (D-G1P), D-Glucose-5-phosphate (D-G5P), and D-Glucose-6-phosphate (D-G6P).
- Enzymes and Cofactors:** Numerous enzymes are shown, including G6P dehydrogenase (EC 1.1.1.41), 6-phosphogluconate dehydrogenase (EC 1.1.1.43), and various transketolase and transaminase enzymes. Cofactors like NADP⁺ and NADPH are also indicated.
- Connections to Other Pathways:**
 - Glycolysis:** D-G6P is converted to F6P, which enters glycolysis.
 - Gluconeogenesis:** F6P can be converted back to D-G6P.
 - Pentose Interconversion:** D-G5P is converted to D-G6P.
 - Other Pathways:** The map shows connections to glycerol metabolism, ascorbate metabolism, amino sugar and nucleotide sugar metabolism, and the citrate cycle.
- Regulation:** The map includes several regulatory points, such as the inhibition of G6P dehydrogenase by NADPH and the activation of 6-phosphogluconate dehydrogenase by NADP⁺.

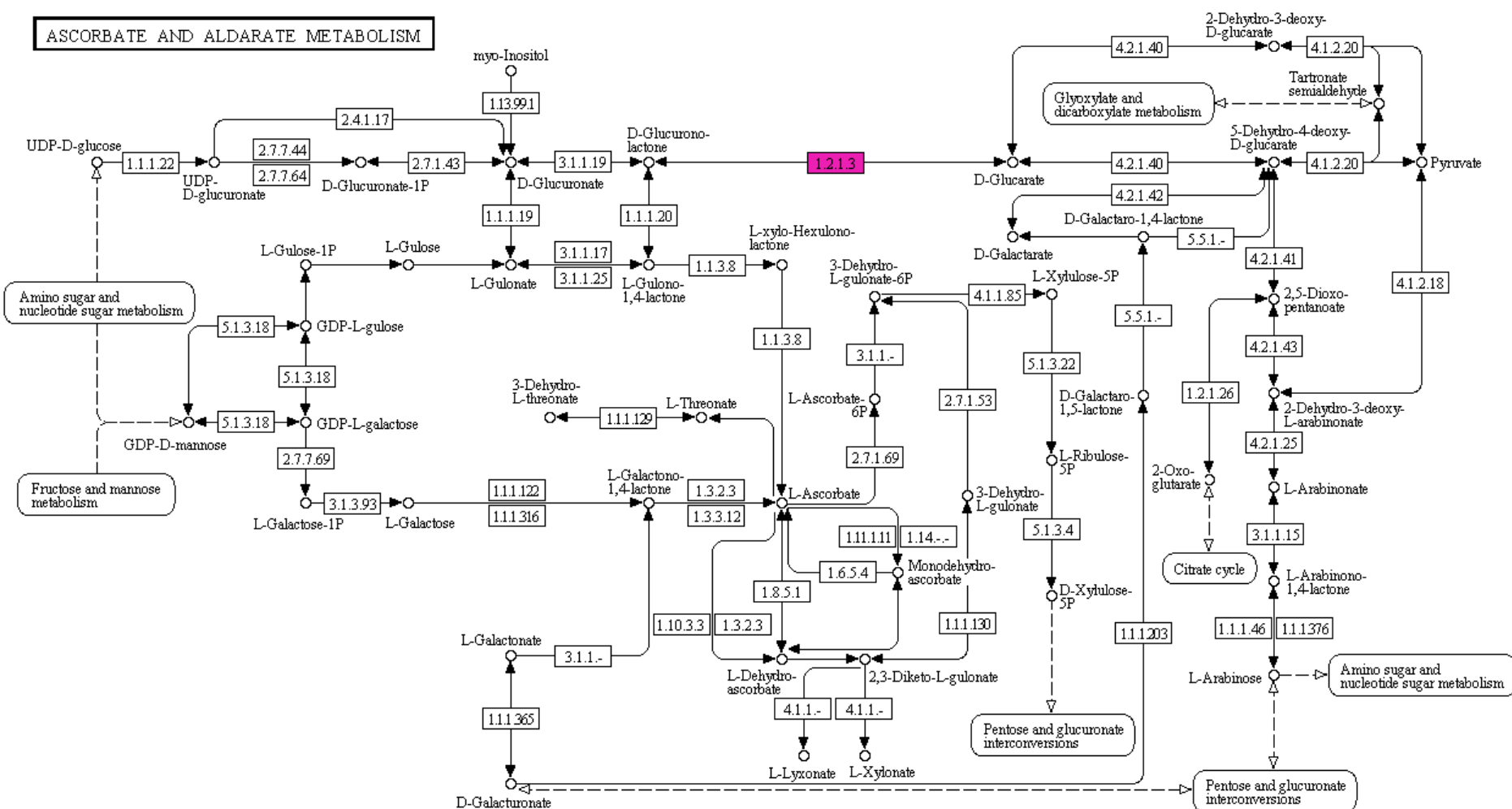
FRUCTOSE AND MANNOSE METABOLISM



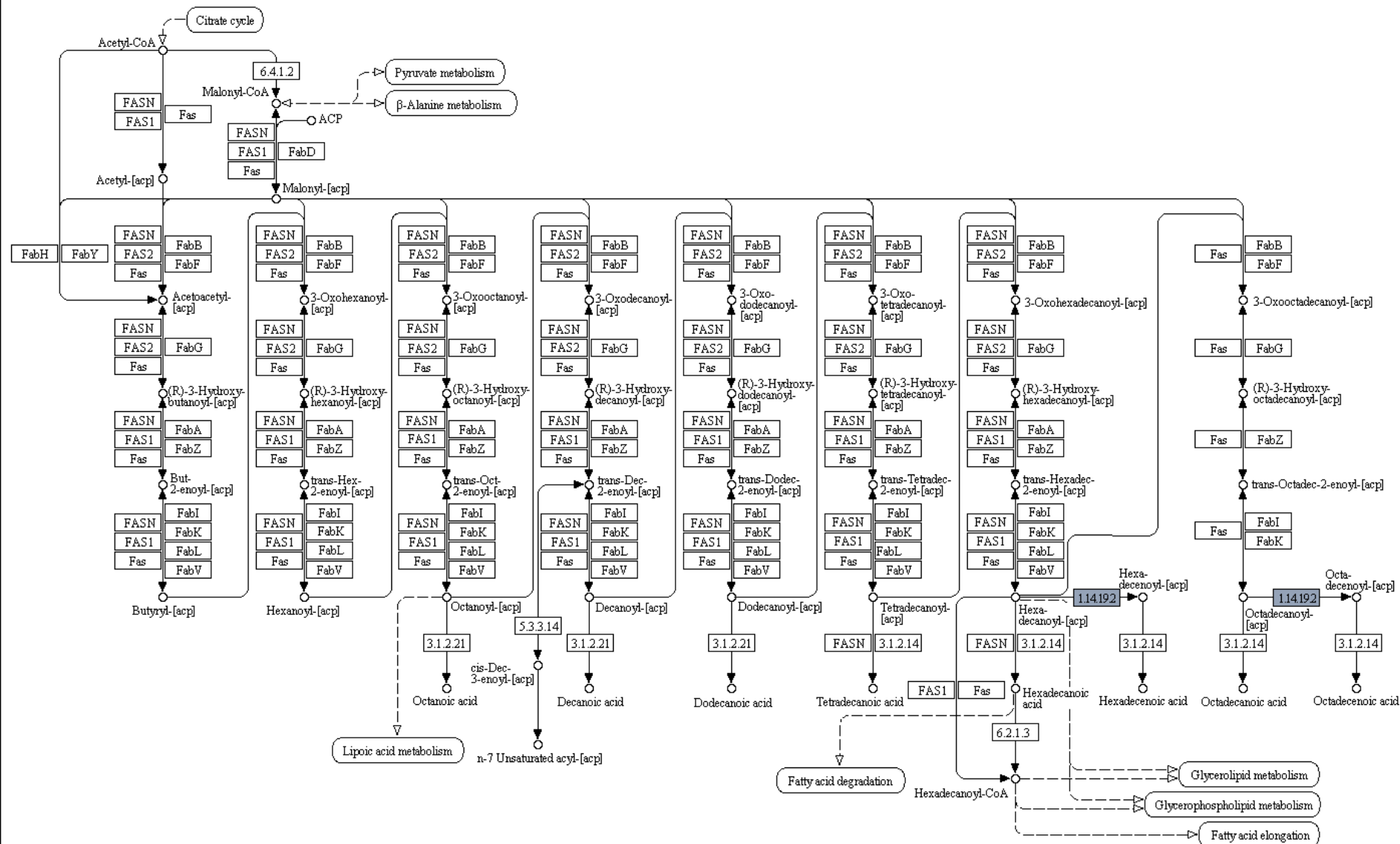
GALACTOSE METABOLISM



ASCORBATE AND ALDARATE METABOLISM

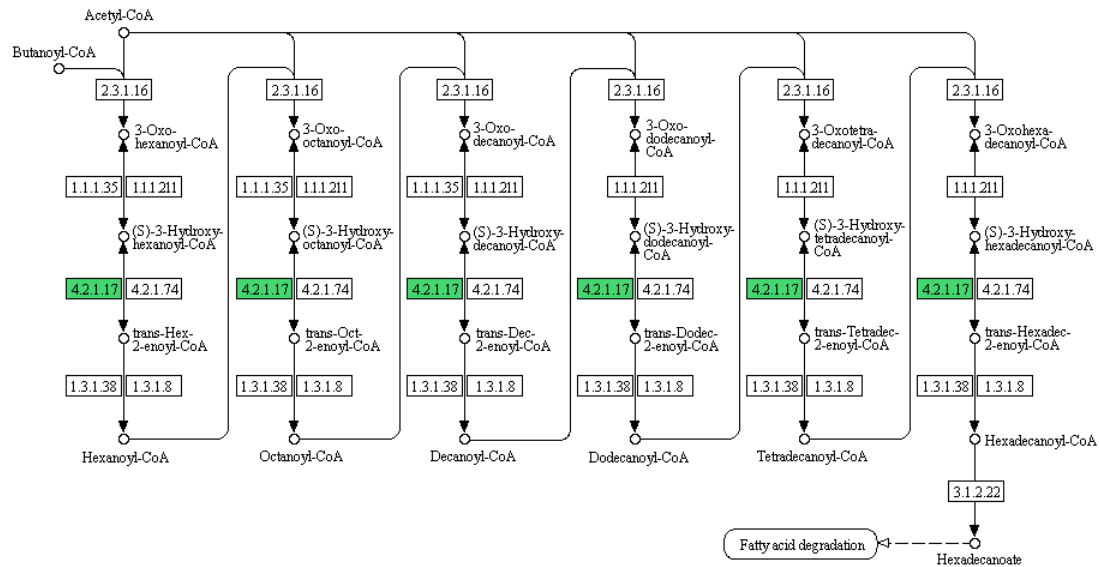


FATTY ACID BIOSYNTHESIS



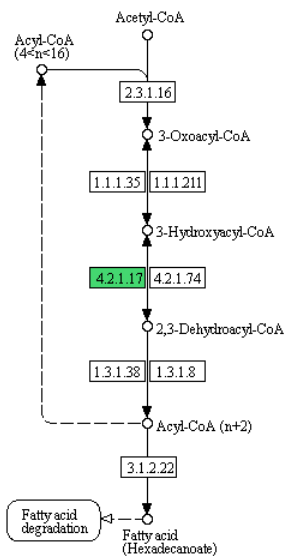
FATTY ACID ELONGATION

In mitochondria ($4 \leq n \leq 16$)

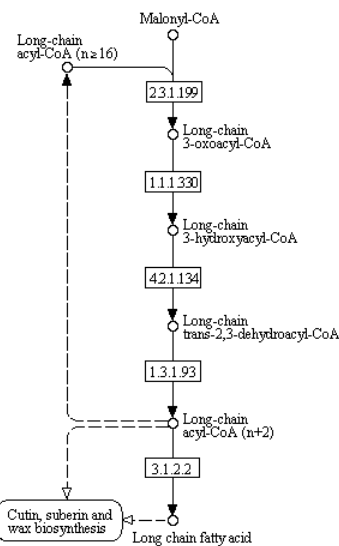


General forms

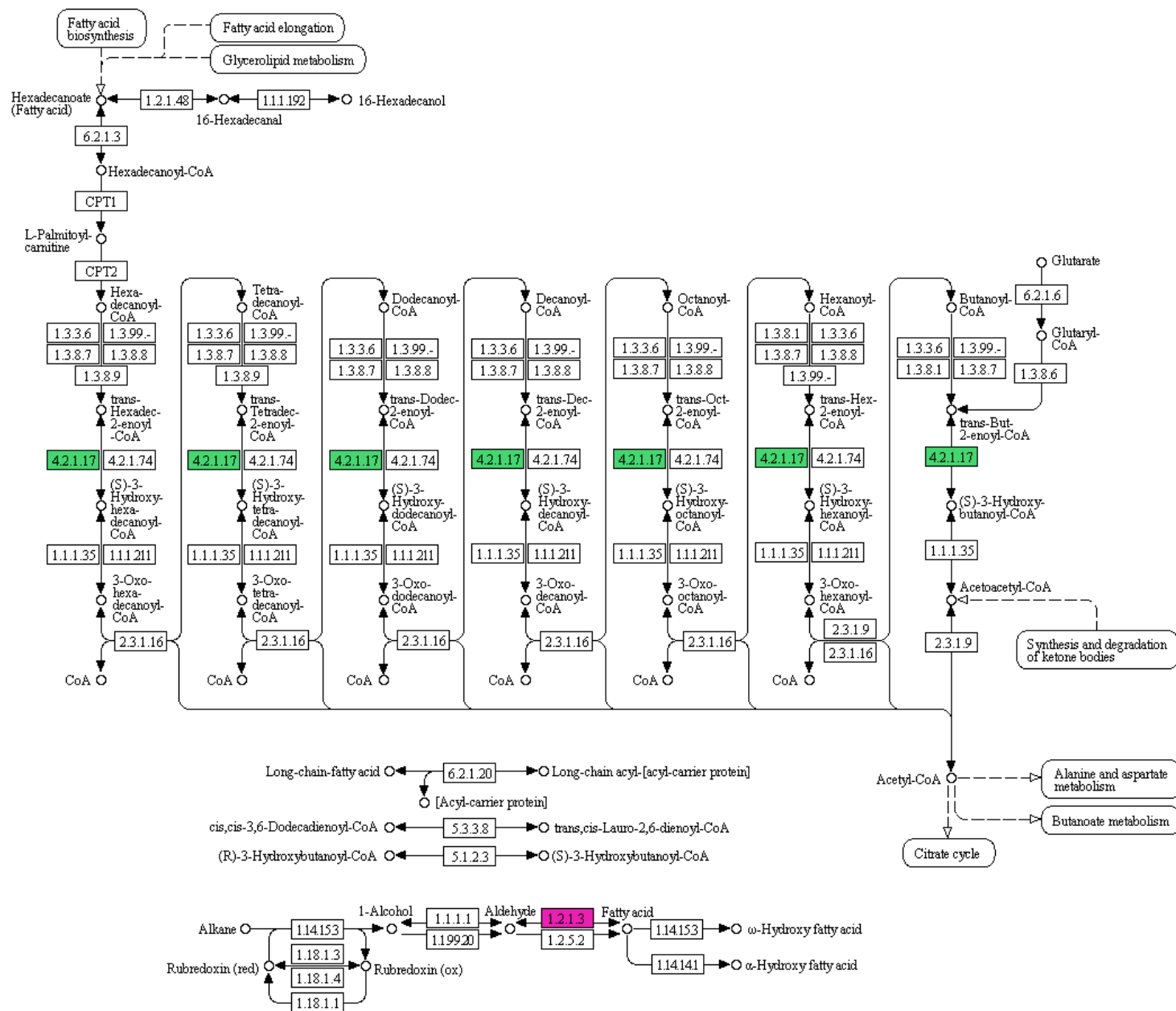
In mitochondria ($4 \leq n \leq 16$)



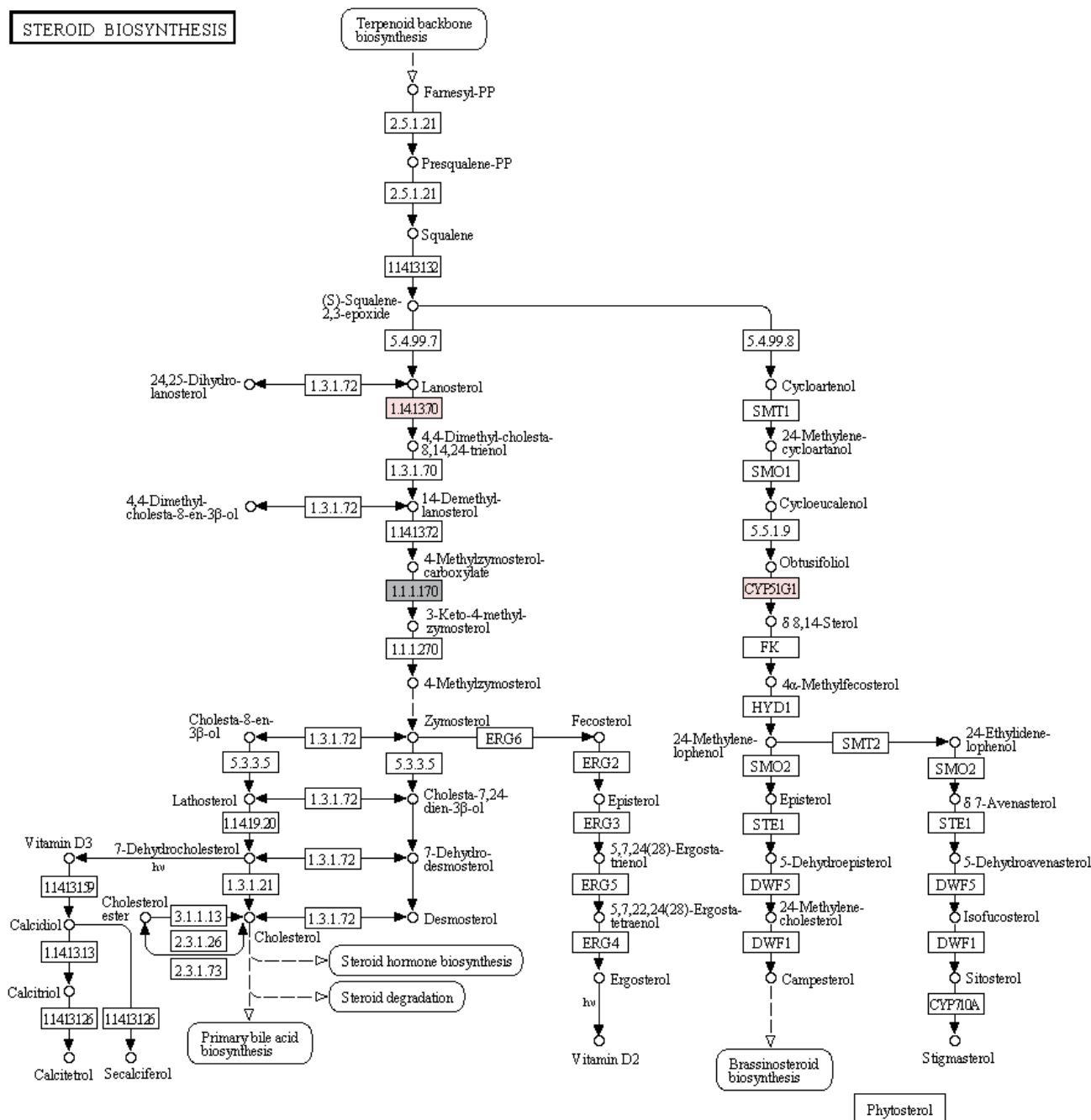
In endoplasmic reticulum ($n \geq 16$)



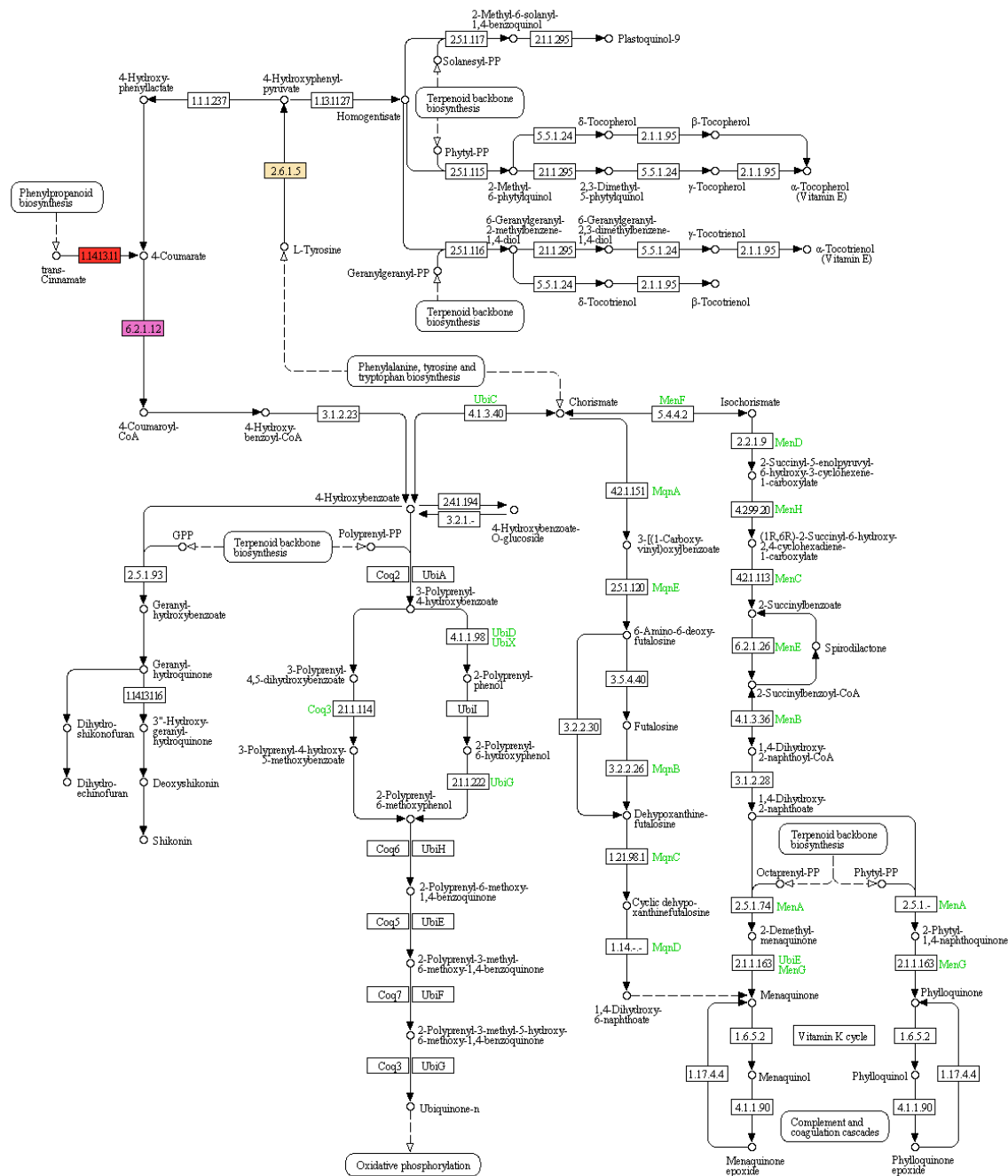
FATTY ACID DEGRADATION



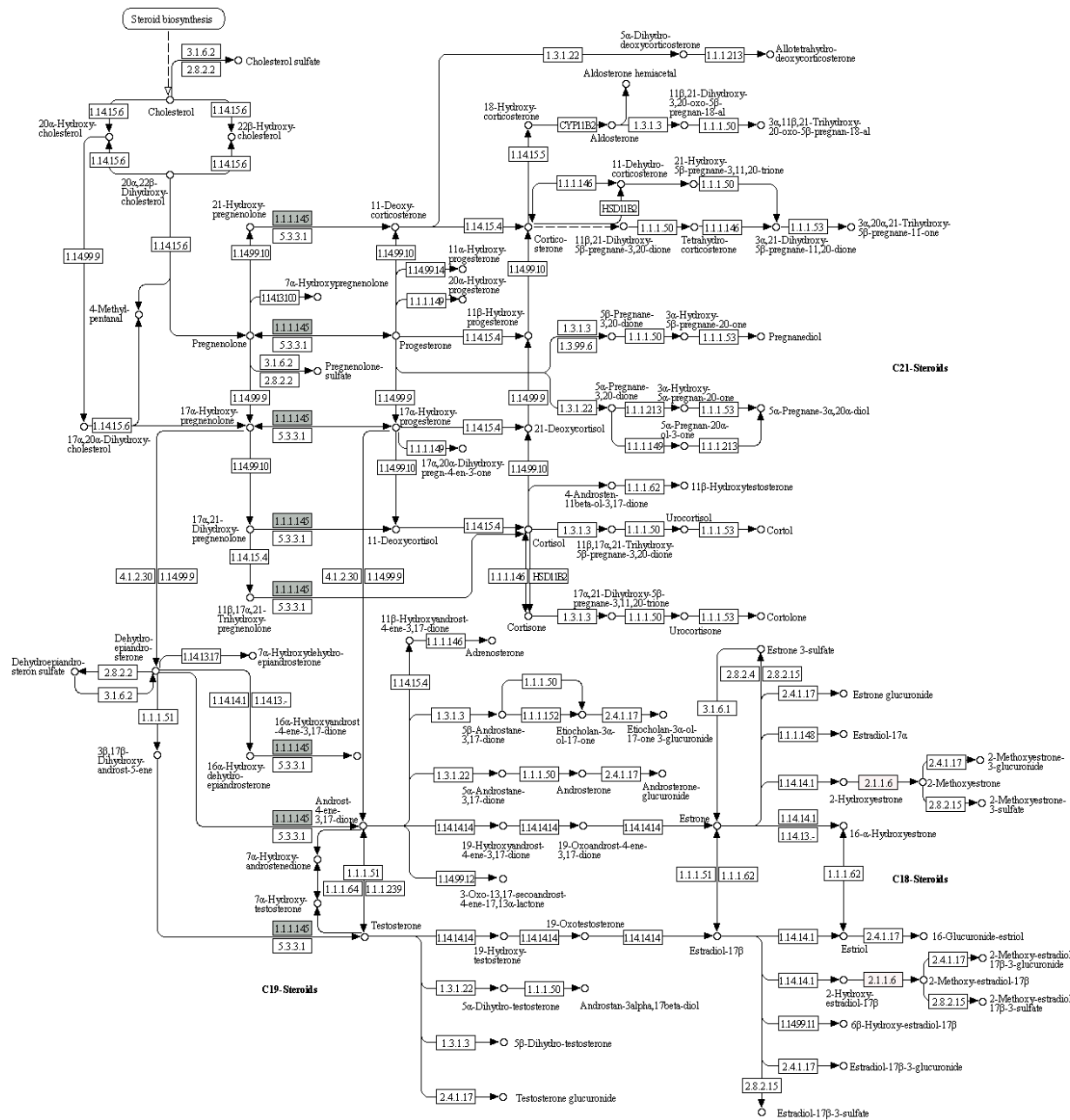
STEROID BIOSYNTHESIS



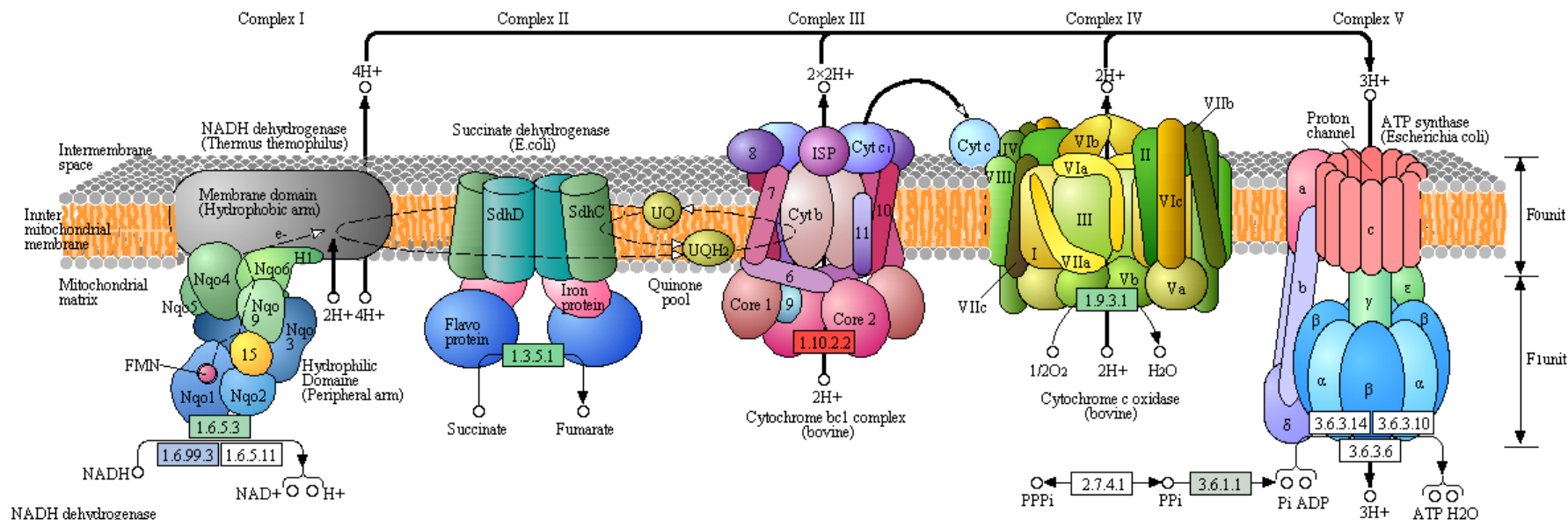
UBIQUINONE AND OTHER TERPENOID-QUINONE BIOSYNTHESIS



STEROID HORMONE BIOSYNTHESIS



OXIDATIVE PHOSPHORYLATION



NADH dehydrogenase

E	ND1	ND2	ND3	ND4	ND4L	ND5	ND6
---	-----	-----	-----	-----	------	-----	-----

E	Ndufs1	Ndufs2	Ndufs3	Ndufs4	Ndufs5	Ndufs6	Ndufs7	Ndufs8	Ndulfv1	Ndulfv2	Ndulfv3
---	--------	--------	--------	--------	--------	--------	--------	--------	---------	---------	---------

B/A	NuoA	NuoB	NuoC	NuoD	NuoE	NuoF	NuoG	NuoH	Nuol	NuoJ	NuoK	NuoL	NuoM	NuoN
-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------

B/A	NdhC	NdhK	NdhJ	NdhH	NdhA	NdhI	NdhG	NdhE	NdhF	NdhD	NdhB	NdhL	NdhM	NdhN	HoxE	HoxF	HoxU
-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

E	Ndufa1	Ndufa2	Ndufa3	Ndufa4	Ndufa5	Ndufa6	Ndufa7	Ndufa8	Ndufa9	Ndufa10	Ndufab1	Ndufal1	Ndufa12	Ndufa13
---	--------	--------	--------	--------	--------	--------	--------	--------	--------	---------	---------	---------	---------	---------

E	Ndubf1	Ndubf2	Ndubf3	Ndubf4	Ndubf5	Ndubf6	Ndubf7	Ndubf8	Ndubf9	Ndubf10	Ndubf11	Ndufe1	Ndufe2
---	--------	--------	--------	--------	--------	--------	--------	--------	--------	---------	---------	--------	--------

Succinate dehydrogenase / Fumarate reductase

E	SDHC	SDHD	SDHA	SDHB
---	------	------	------	------

B/A	SdhC	SdhD	SdhA	SdhB	FrdA	FrdB	FrdC	FrdD
-----	------	------	------	------	------	------	------	------

Cytochrome c oxidase

E	COX10	COX3	COX1	COX2	COX4	COX5A	COX5B	COX6A	COX6B	COX6C	COX7A	COX7B	COX7C	COX8	E/B/A	COX11	COX15	COX17
---	-------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	------	-------	-------	-------	-------

B/A	CyoE	CyoD	CyoC	CyoB	CyoA
-----	------	------	------	------	------

	CoxD	CoxC	CoxA	CoxB
--	------	------	------	------

	QoxD	QoxC	QoxB	QoxA
--	------	------	------	------

Cytochrome c reductase

E/B/A	ISP	Cyt b	Cyt 1
-------	-----	-------	-------

E	COR1	QCR2	QCR6	QCR7	QCR8	QCR9	QCR10
---	------	------	------	------	------	------	-------

Cytochrome c oxidase, cbb3-type

B	I	II	IV	III
---	---	----	----	-----

Cytochrome bd complex

B/A	CydA	CydB
-----	------	------

F-type ATPase (Bacteria)

alpha	beta	gamma	delta	epsilon
a	b	c		

F-type ATPase (Eukaryotes)

alpha	beta	gamma	delta	epsilon
OSCP	a	b	c	d
f	g	f6/h	j	k
				8

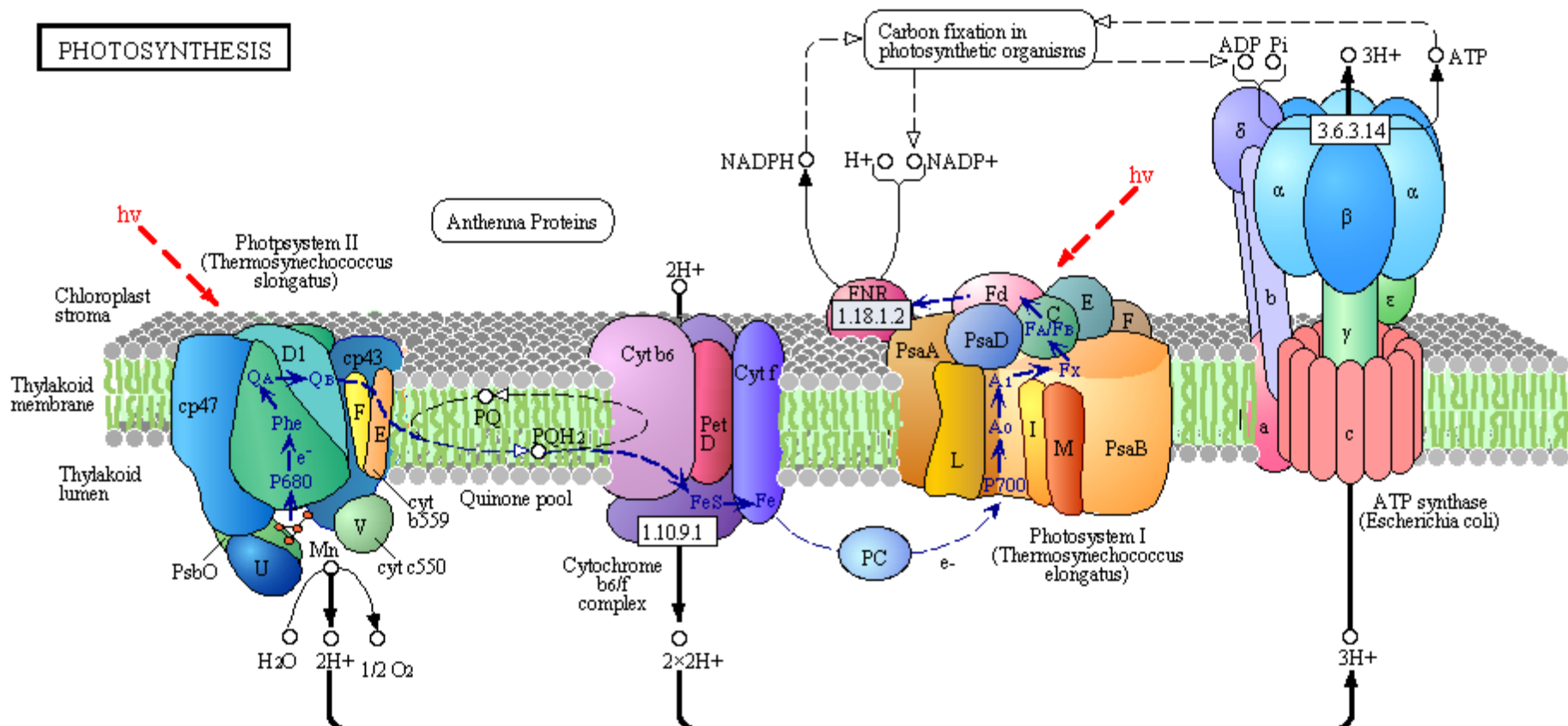
V/A-type ATPase (Bacteria, Archaeas)

A	B	C	D	E	F	G/H
I	K					

V-type ATPase (Eukaryotes)

A	B	C	D	E	F	G	H
a	c	d	e	S1			

PHOTOSYNTHESIS



Photosystem II

D1	D2	cp43	cp47	cyt b ₅₅₉	
PsbA	PsbD	PsbC	PsbB	PsbE	PsbF

MSP						OEC
PsbL	PsbJ	PsbK	PsbM	PsbH	PsbI	PsbO
PsbQ	PsbR	PsbS	PsbT	PsbU	PsbV	PsbW
PsbY	PsbZ	Psb27	Psb28	Psb28-2		PsbX

Photosystem I

PsaA	PsaB	PsaC	PsaD	PsaE	PsaF	PsaG	PsaH
PsaI	PsaJ	PsaK	PsaL	PsaM	PsaN	PsaO	PsaX

Cytochrome b₆/f complex

PetB	PetD	PetA	PetC	PetL	PetM	PetN	PetG
------	------	------	------	------	------	------	------

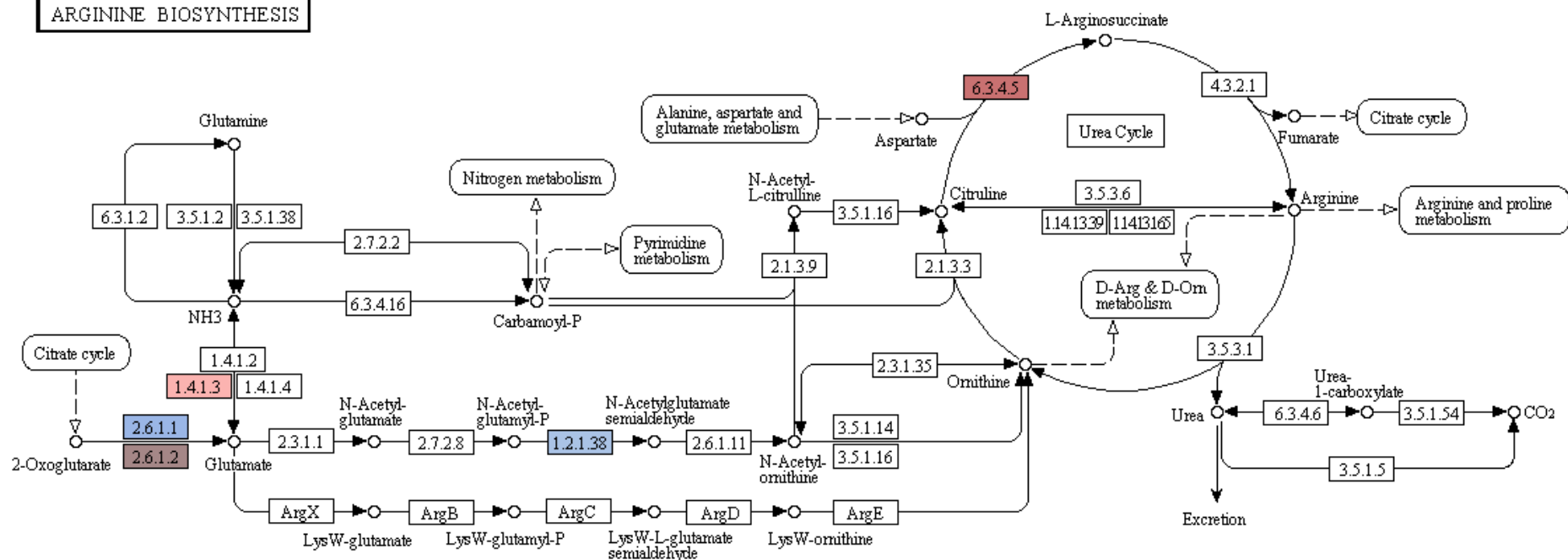
Photosynthetic electron transport

PC	Fd	FNR	cyt c ₆
PetE	PetF	PetH	PetJ

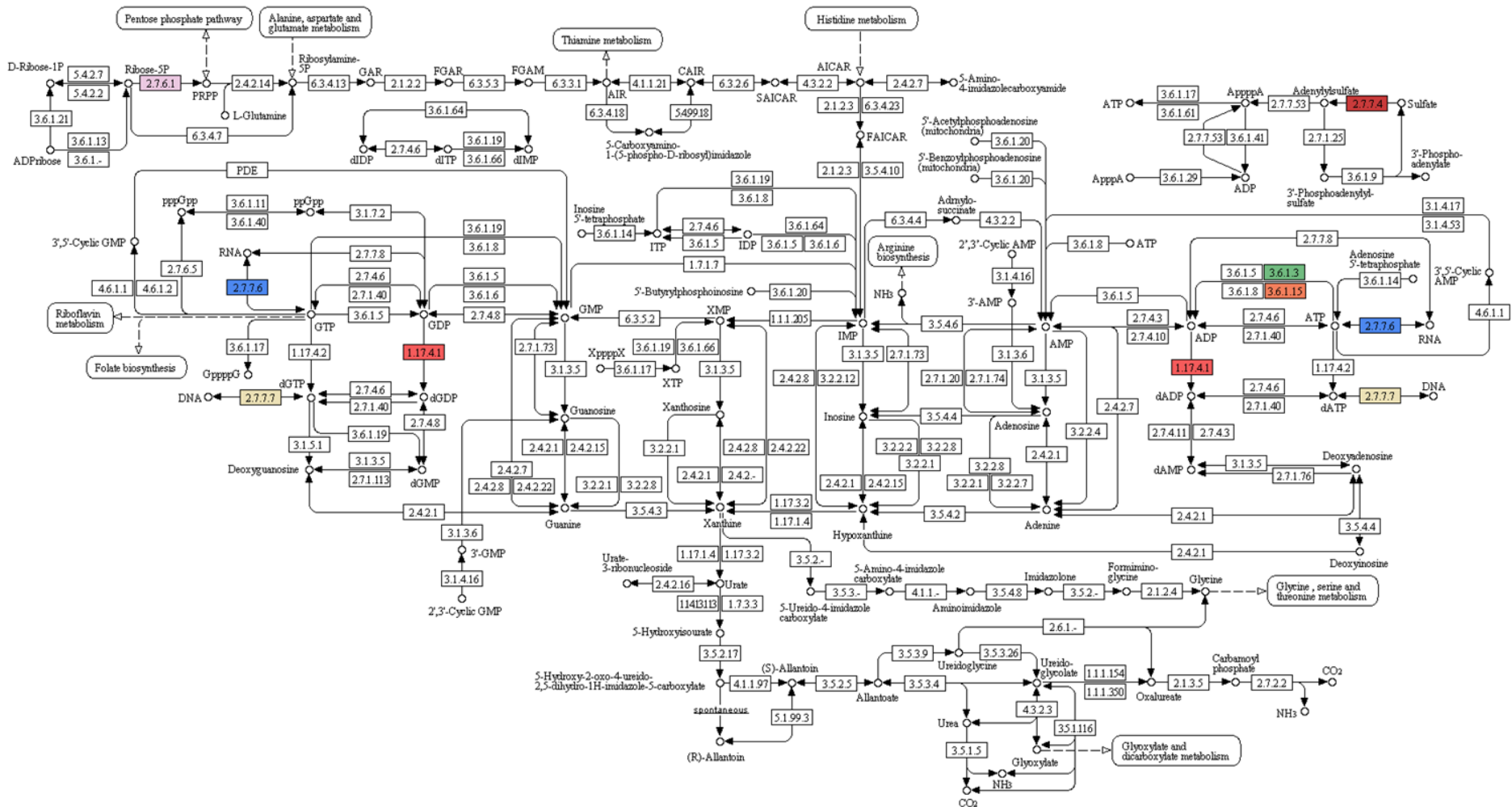
F-type ATPase

beta	alpha	gamma	delta	epsilon	c	a	b
------	-------	-------	-------	---------	---	---	---

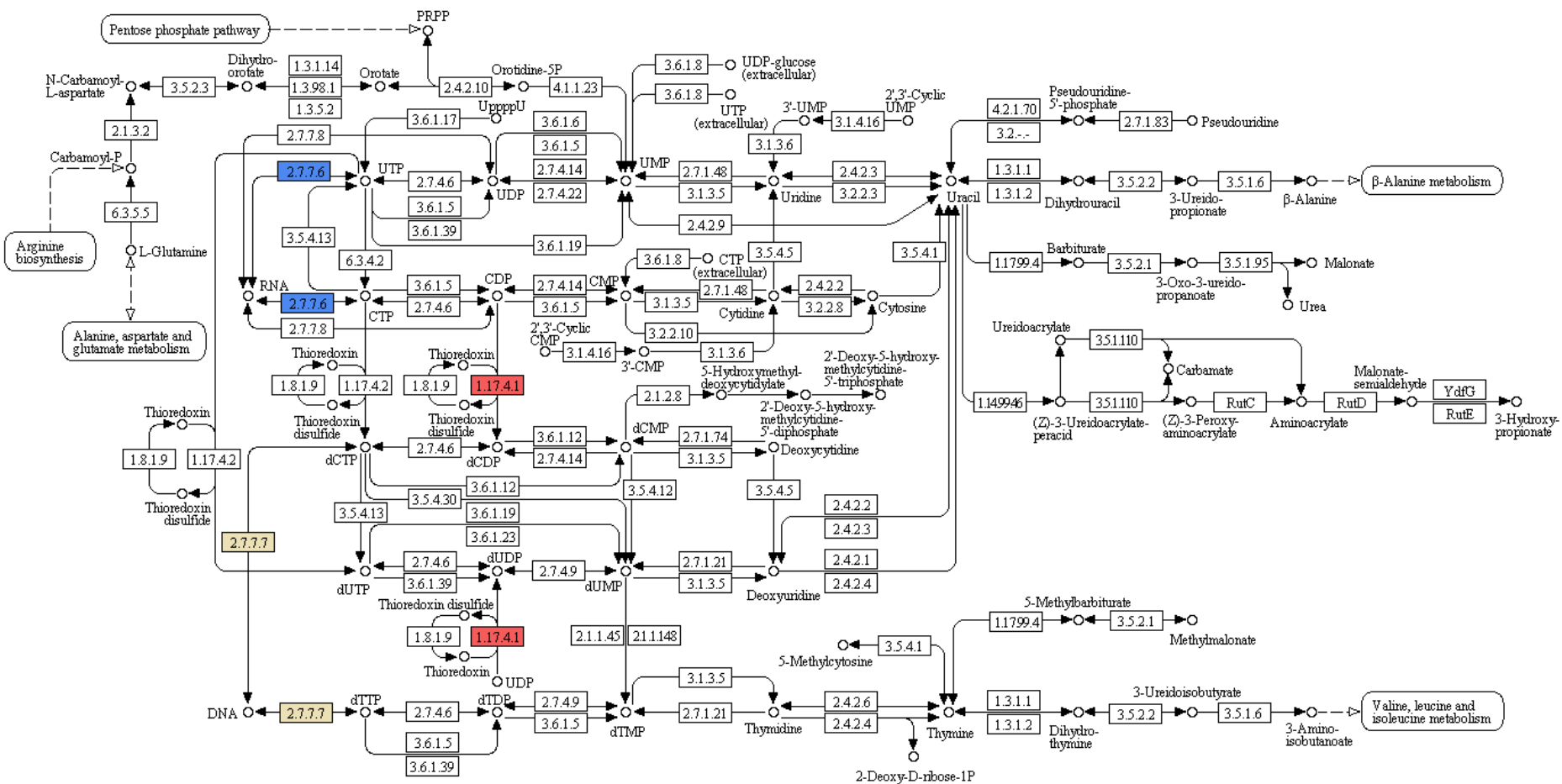
ARGININE BIOSYNTHESIS



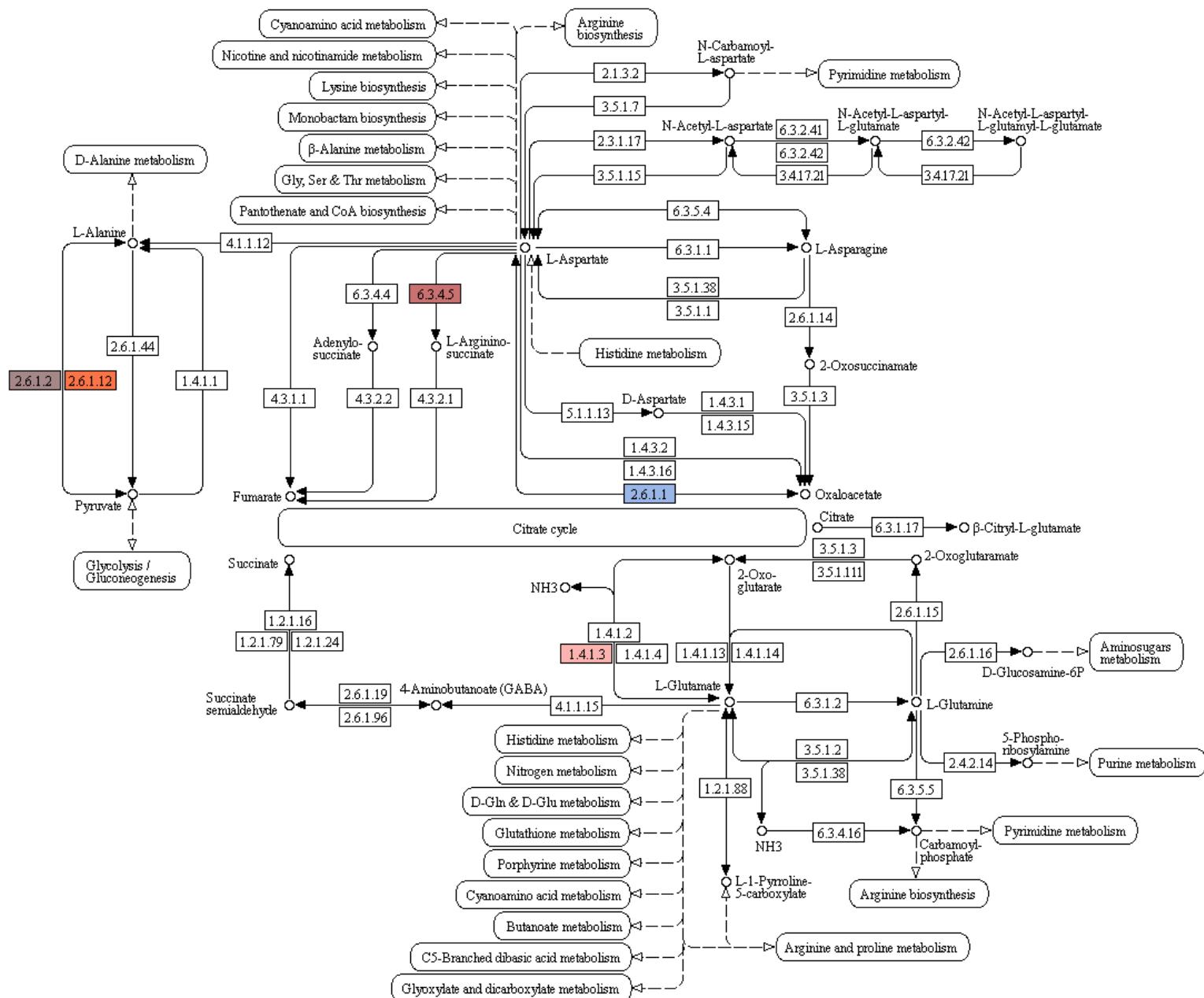
PURINE METABOLISM



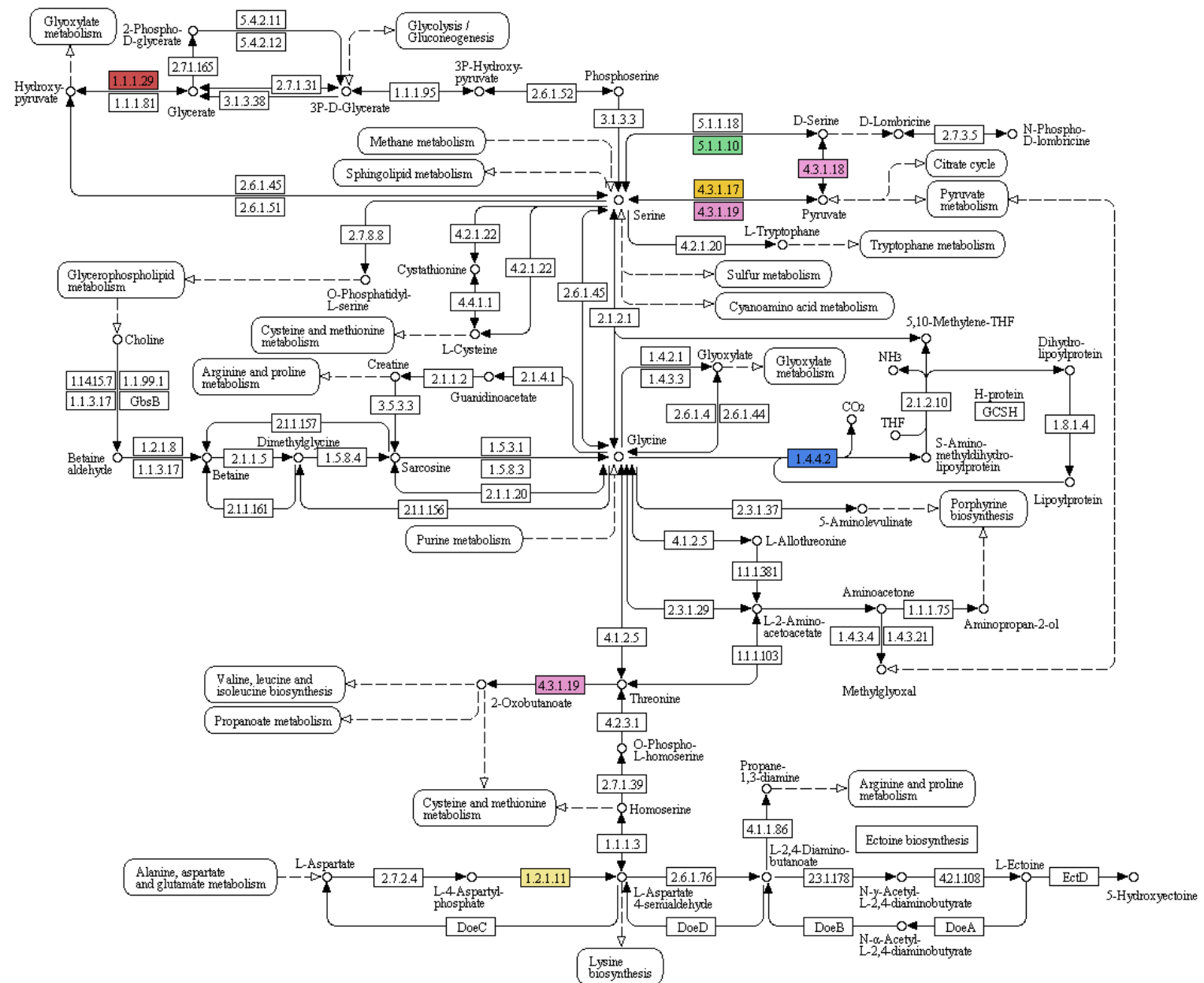
PYRIMIDINE METABOLISM



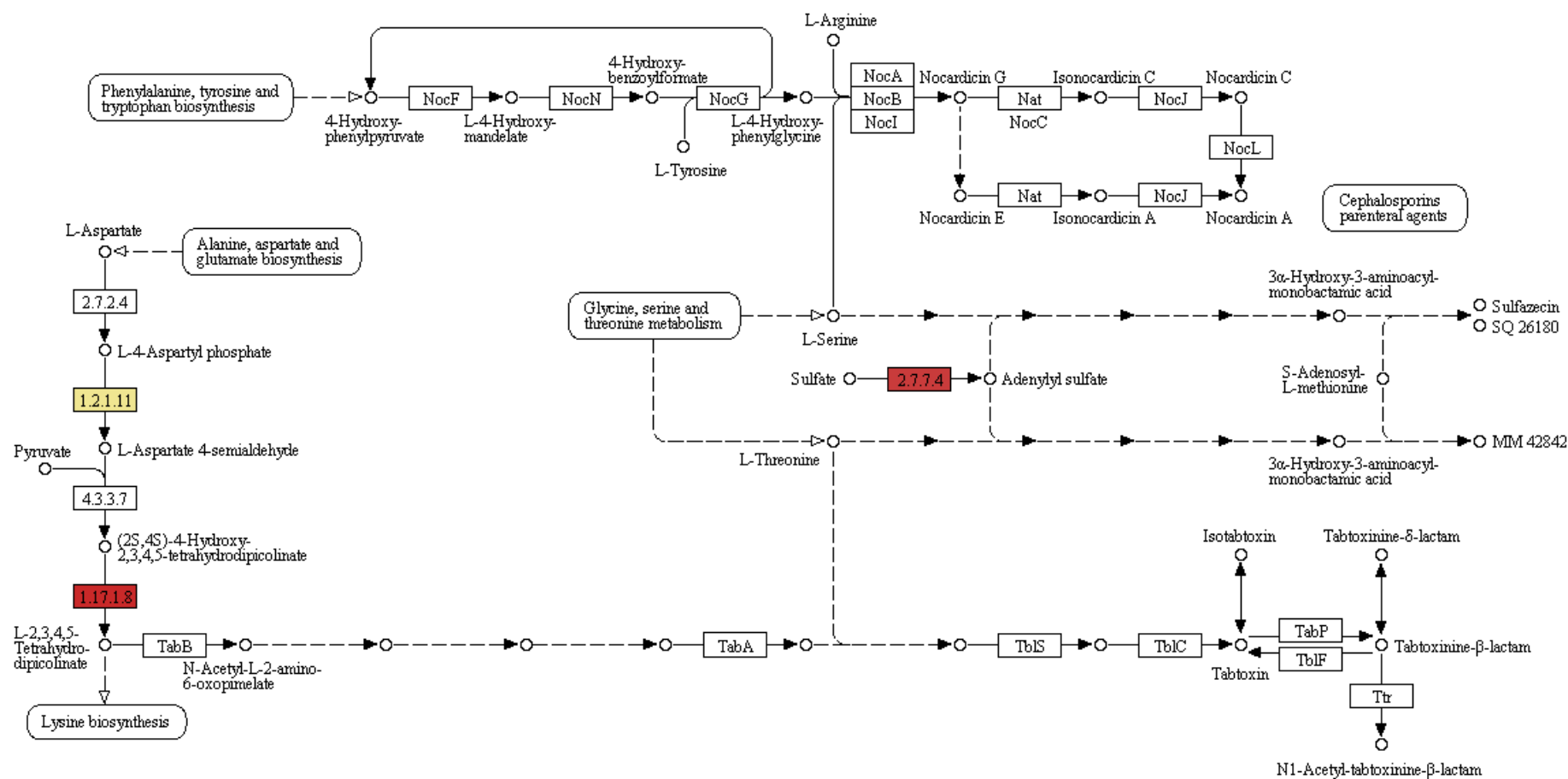
ALANINE, ASPARTATE AND GLUTAMATE METABOLISM



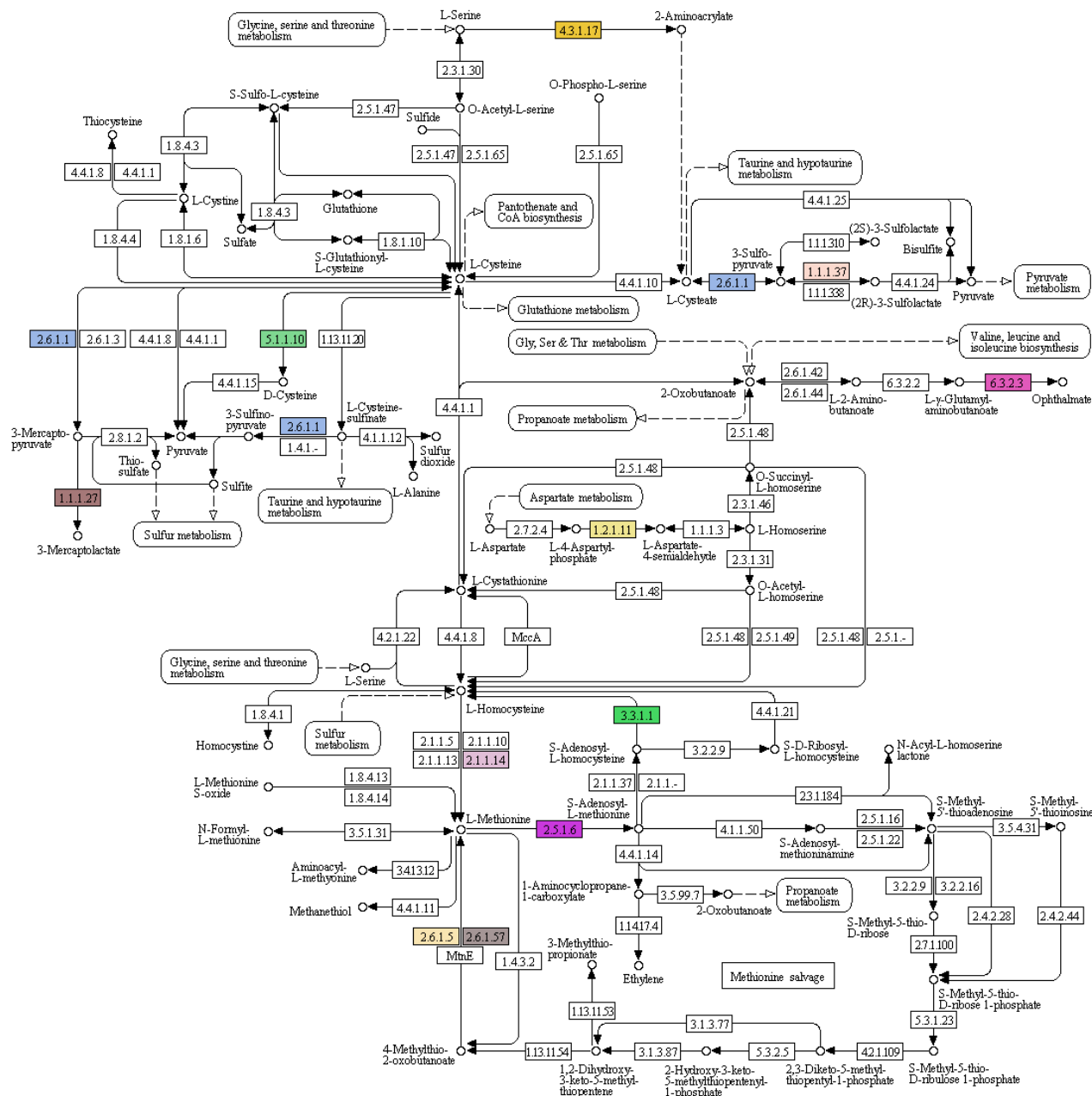
GLYCINE, SERINE AND THREONINE METABOLISM



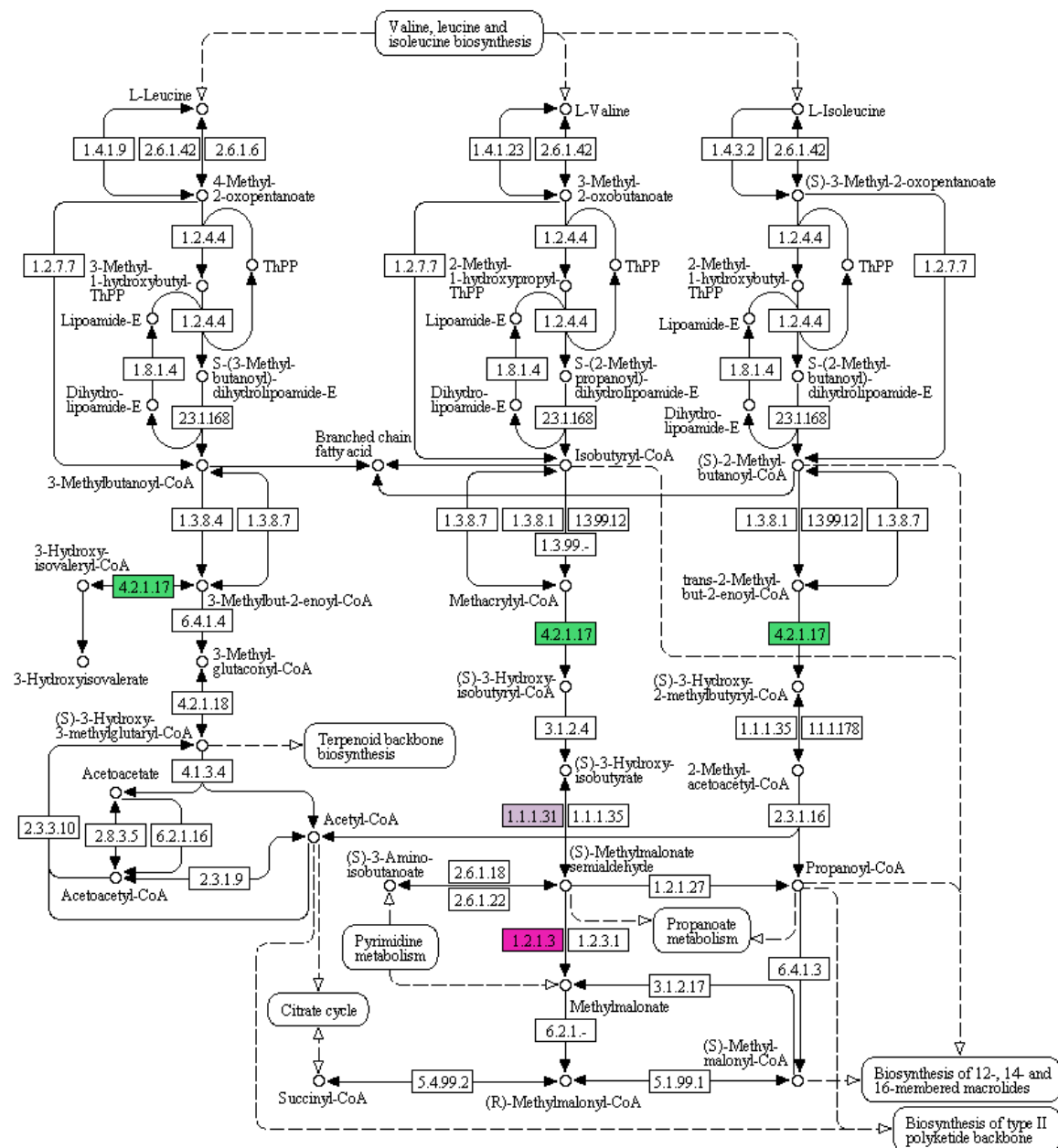
MONOBACTAM BIOSYNTHESIS



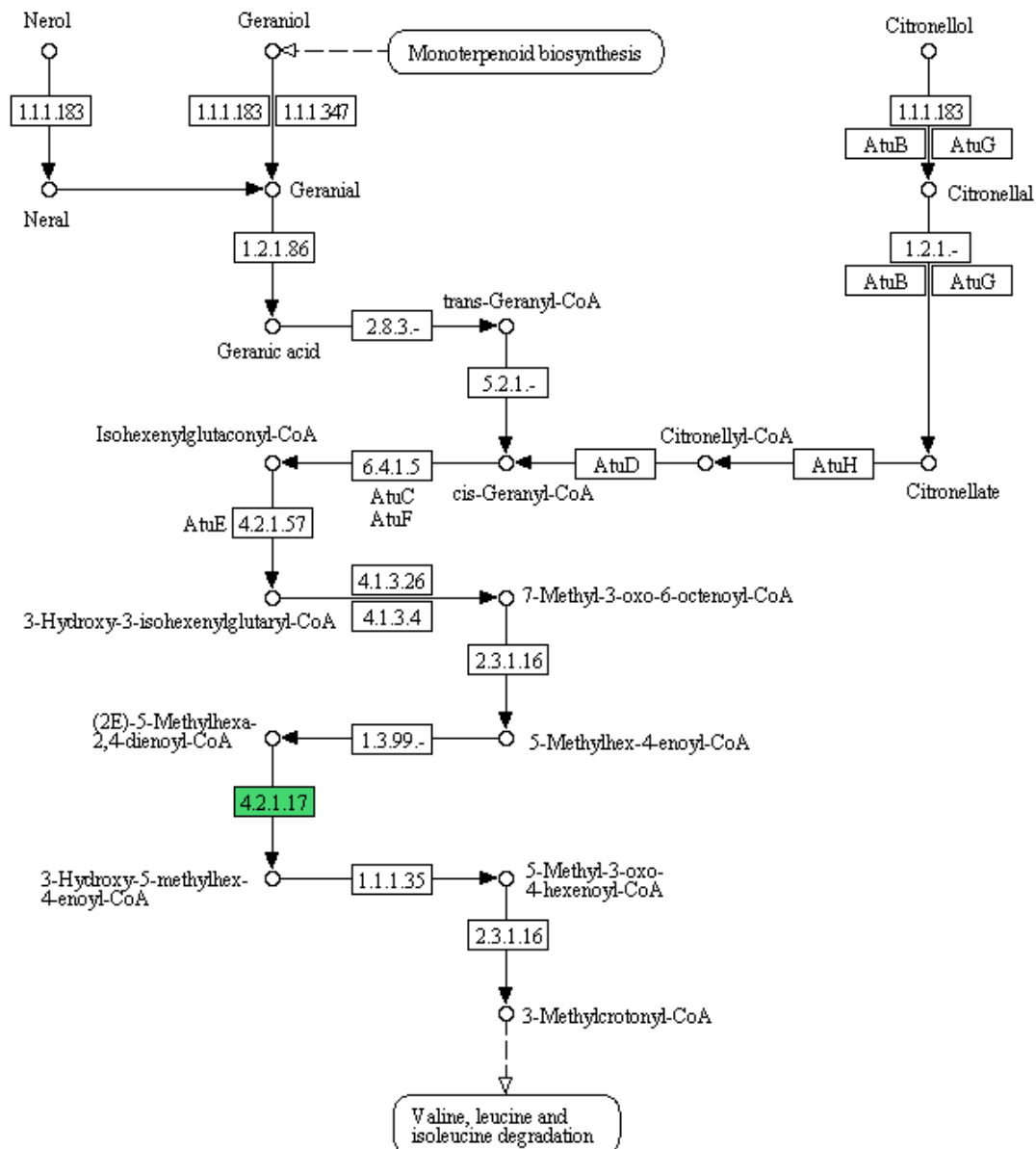
CYSTEINE AND METHIONINE METABOLISM



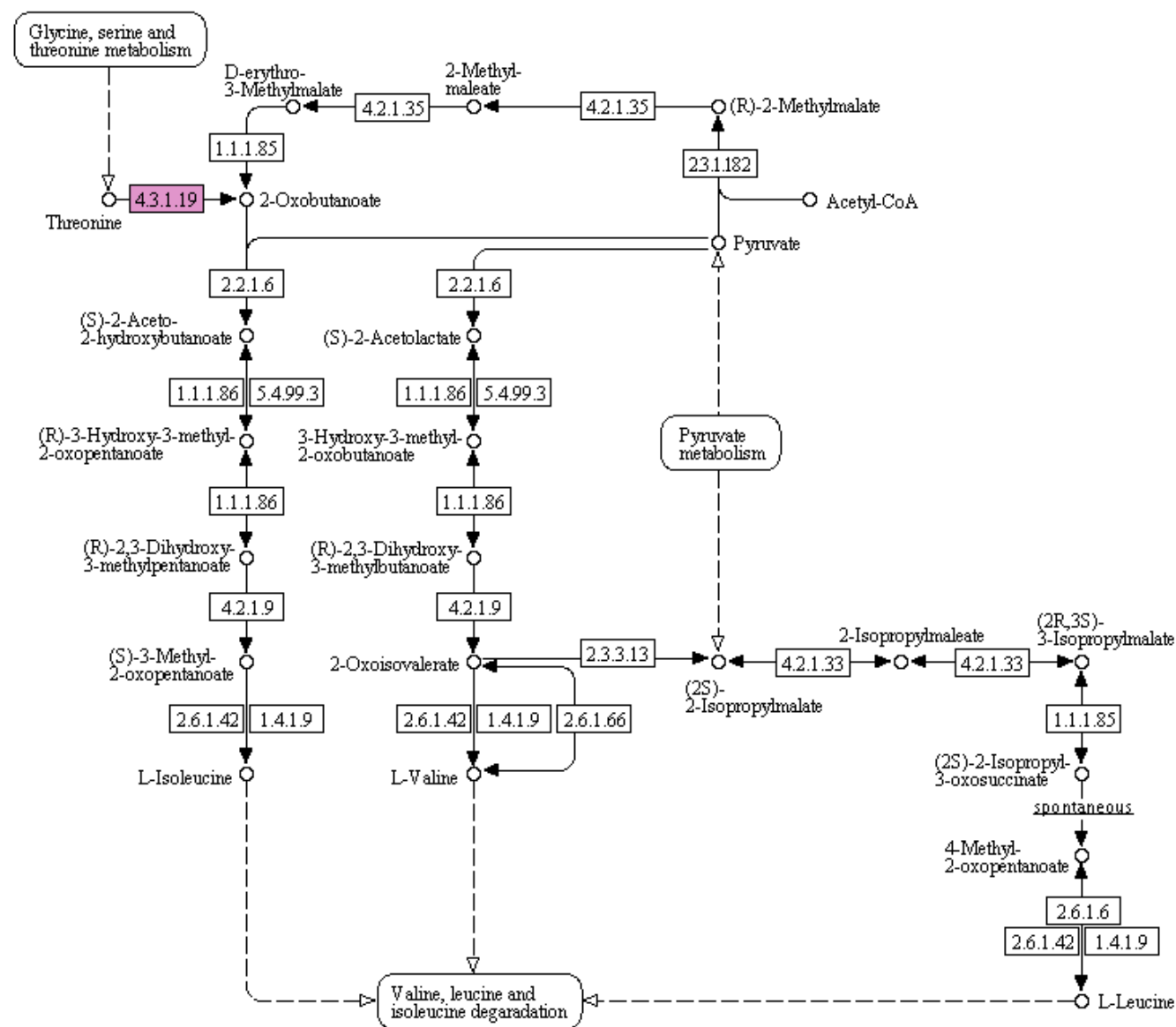
VALINE, LEUCINE AND ISOLEUCINE DEGRADATION



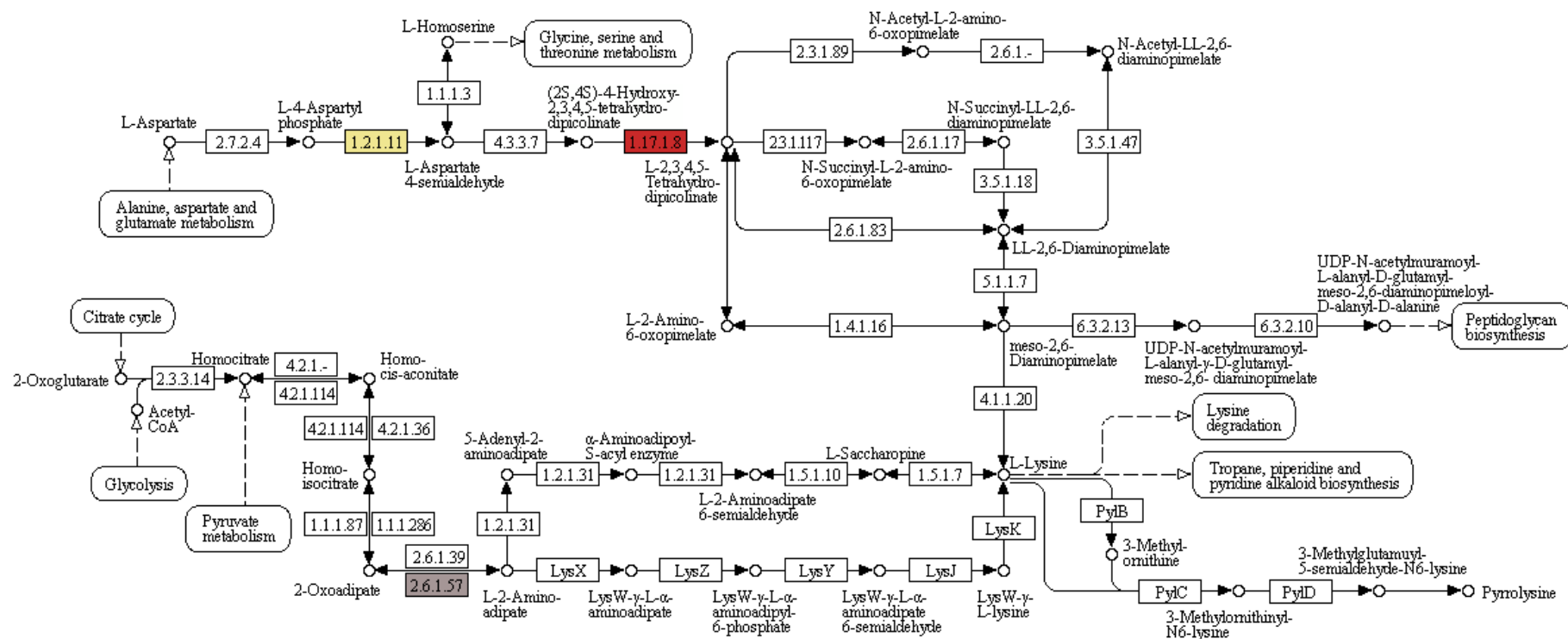
GERANIOL DEGRADATION



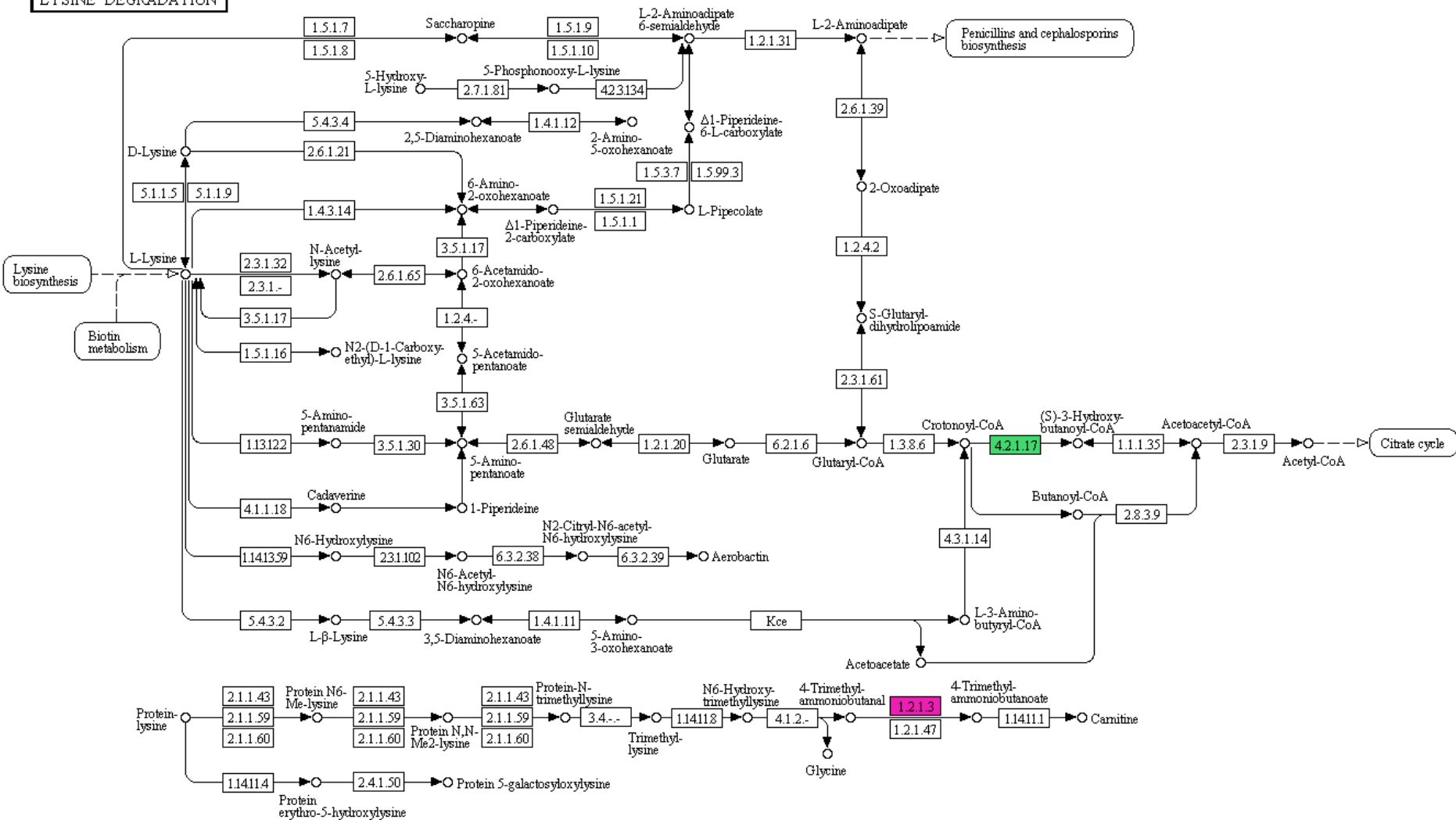
VALINE, LEUCINE AND ISOLEUCINE BIOSYNTHESIS



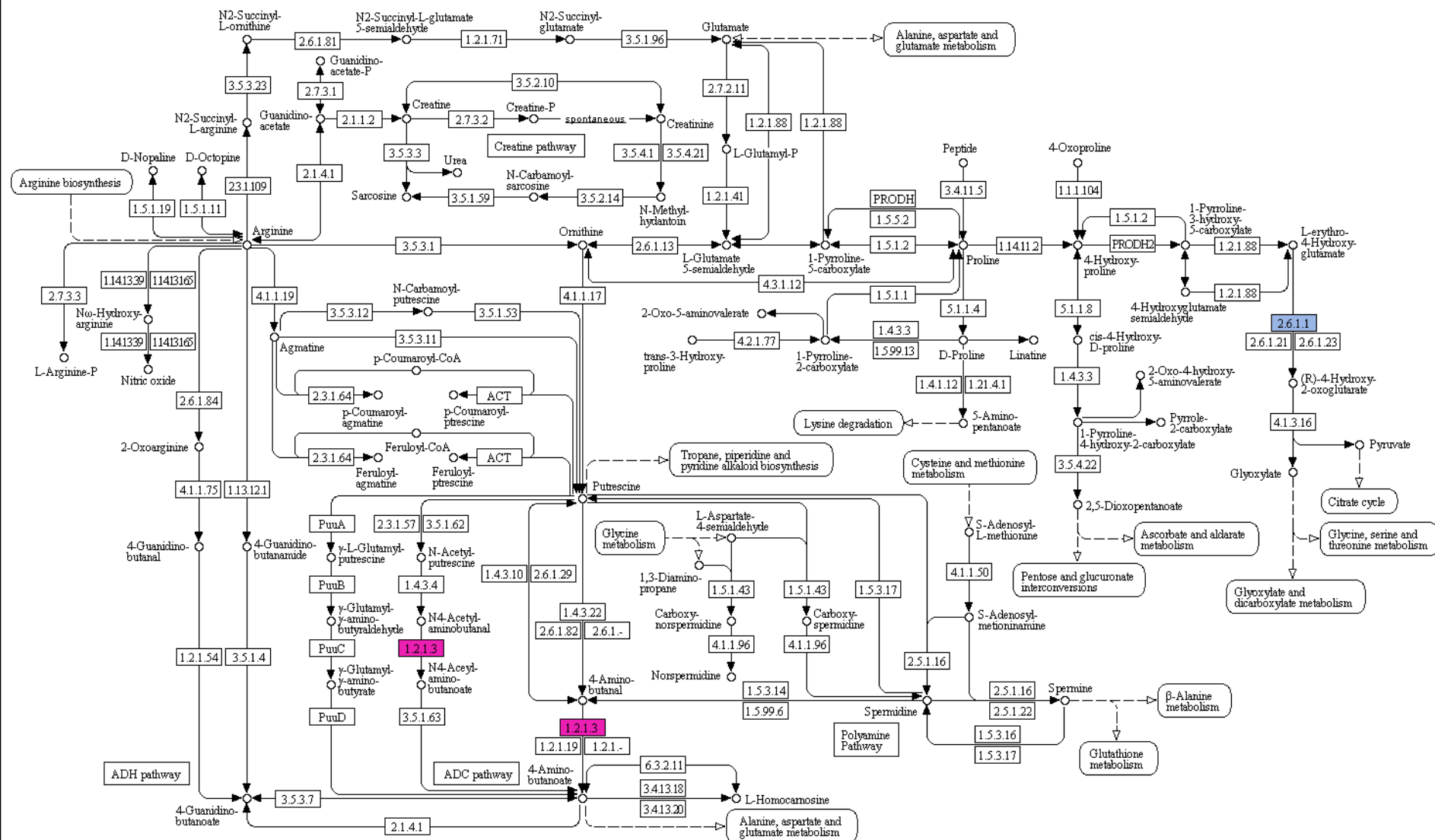
LYSINE BIOSYNTHESIS



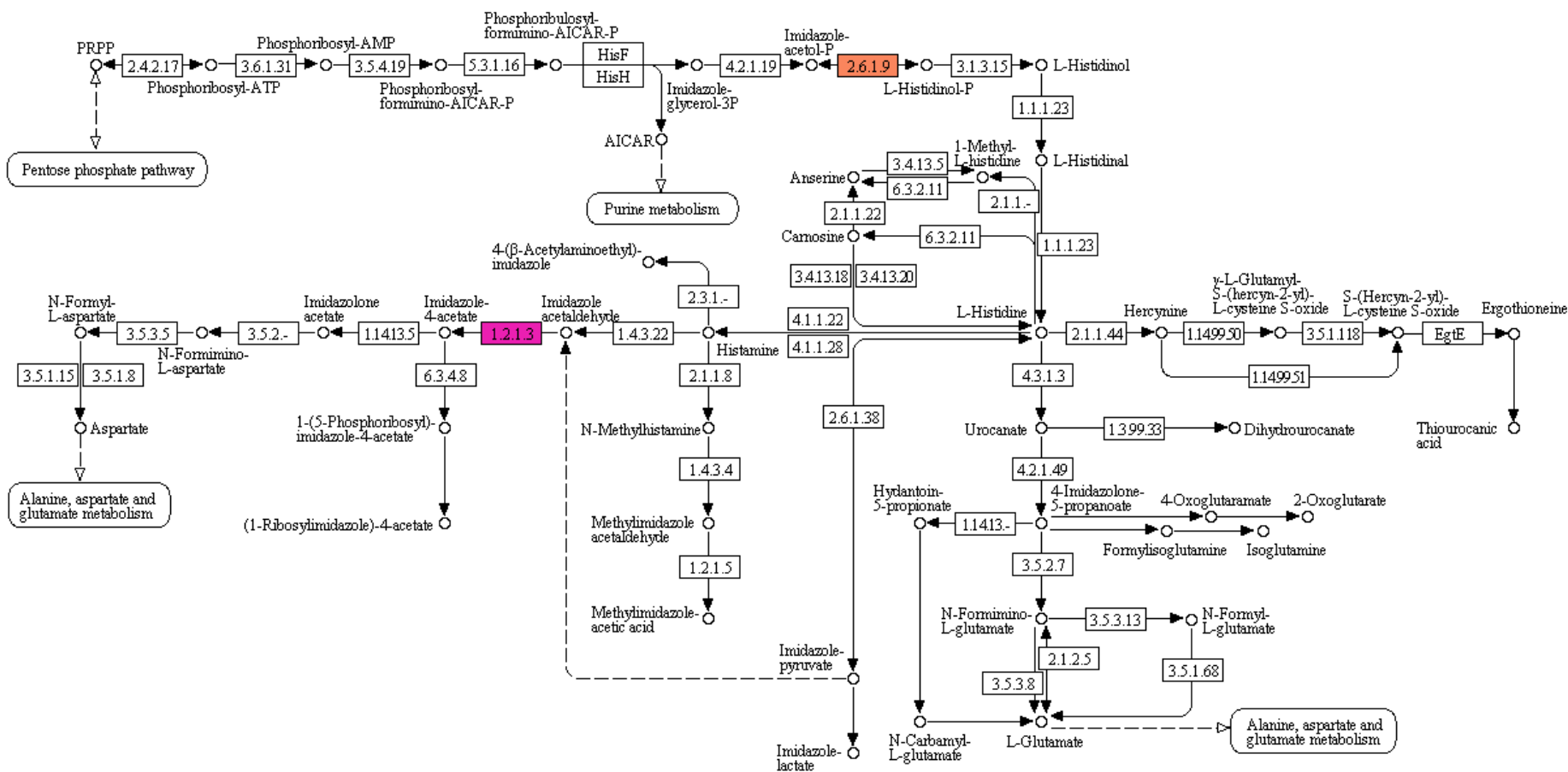
LYSINE DEGRADATION



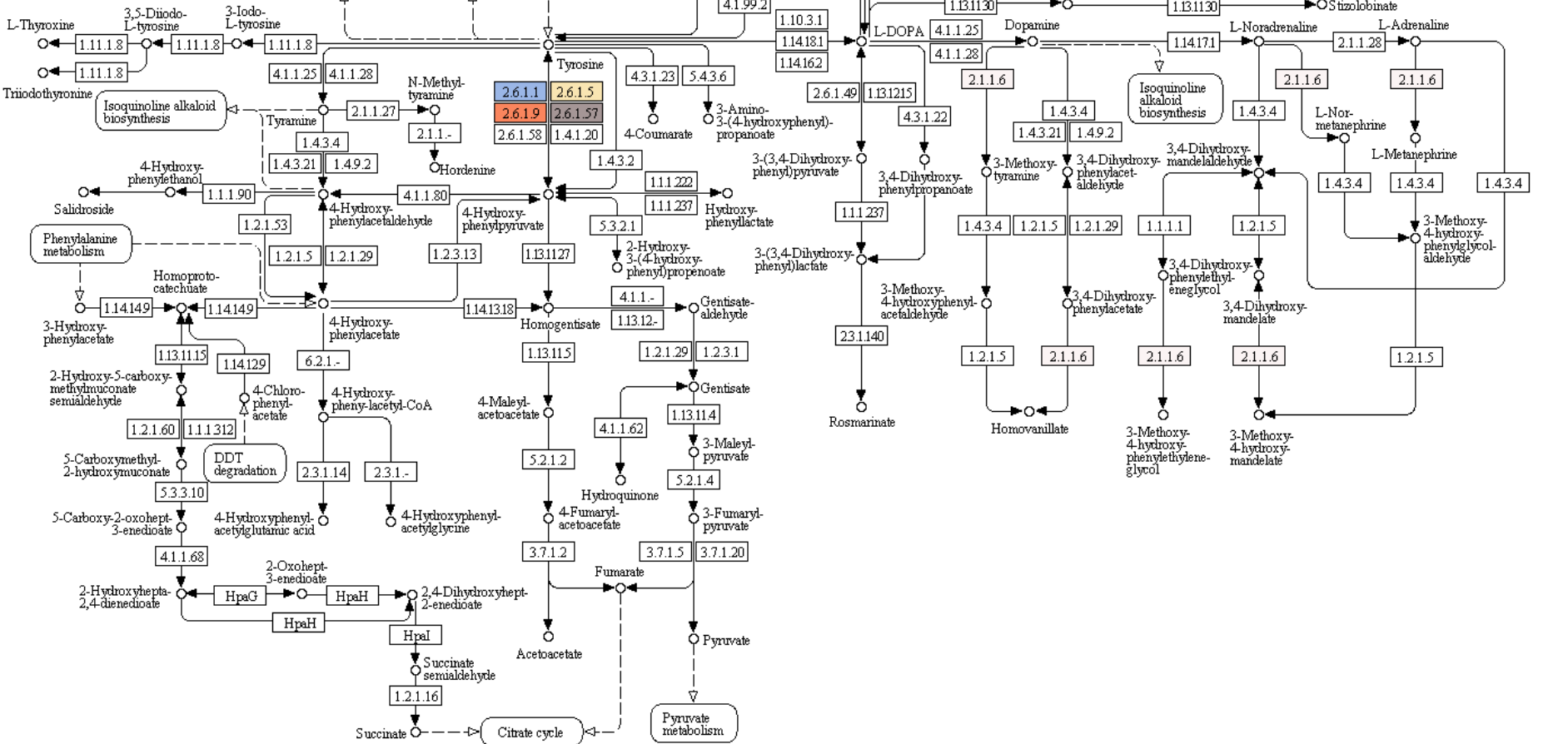
ARGININE AND PROLINE METABOLISM



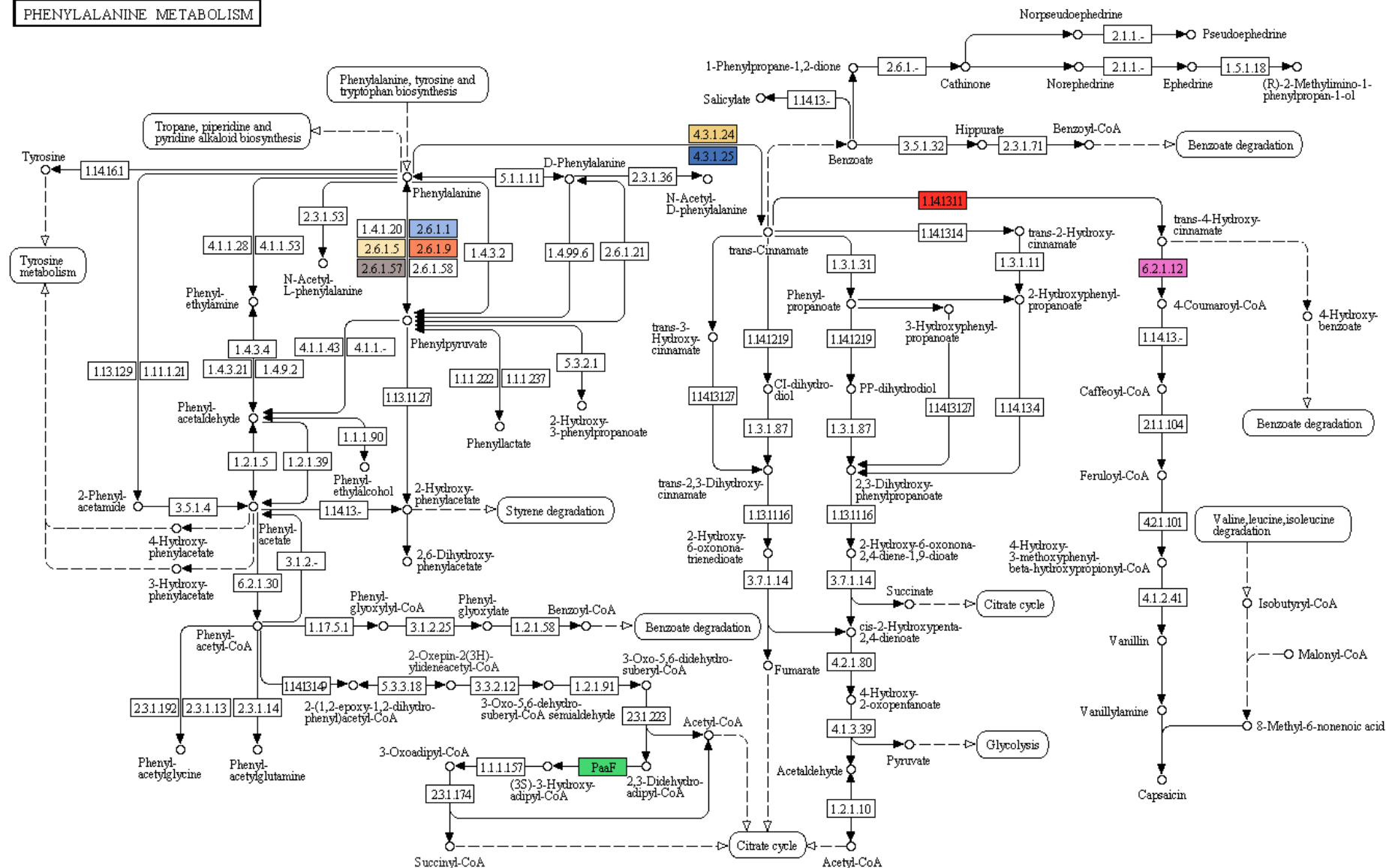
HISTIDINE METABOLISM



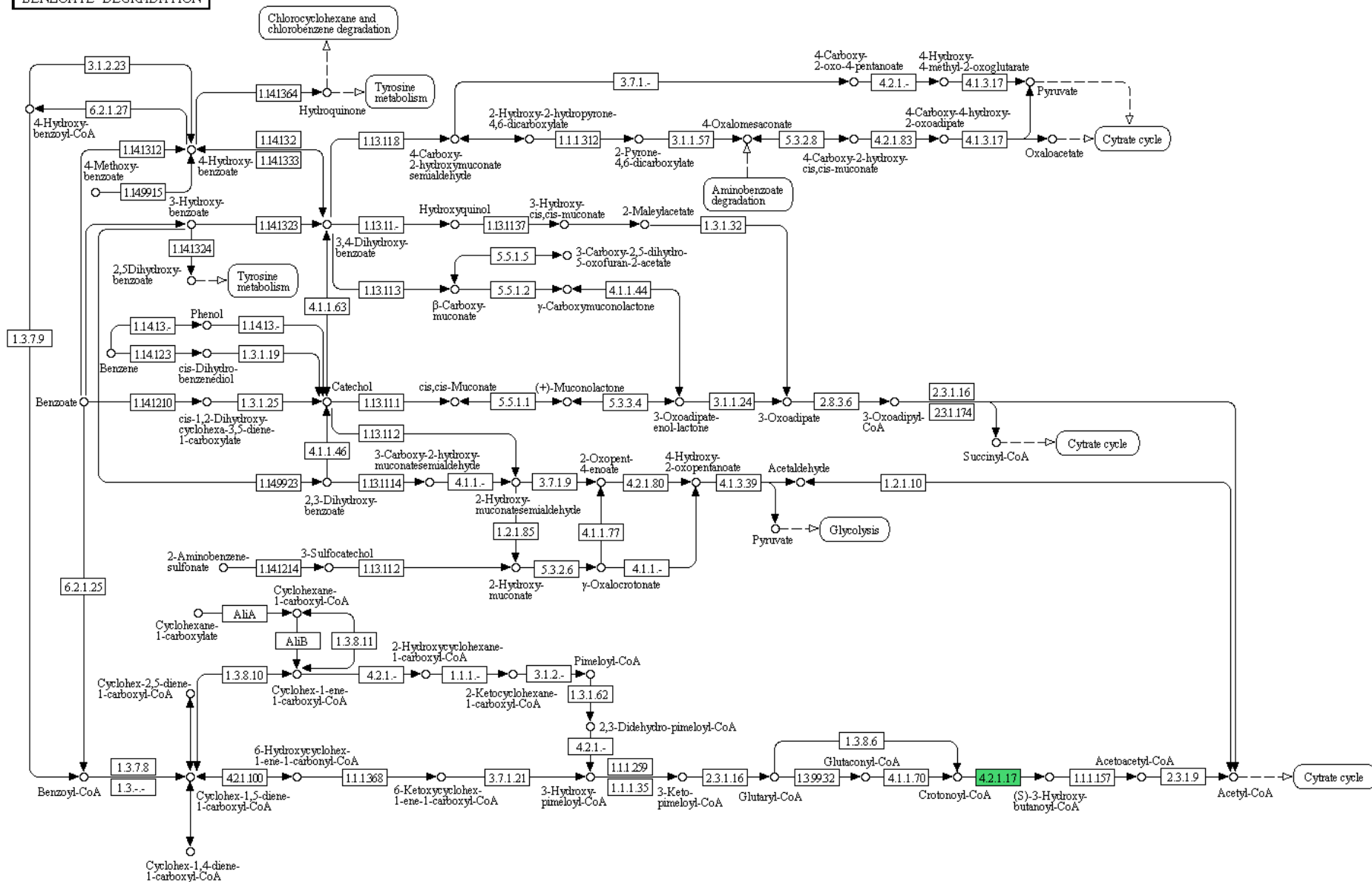
TYROSINE METABOLISM



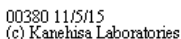
PHENYLALANINE METABOLISM



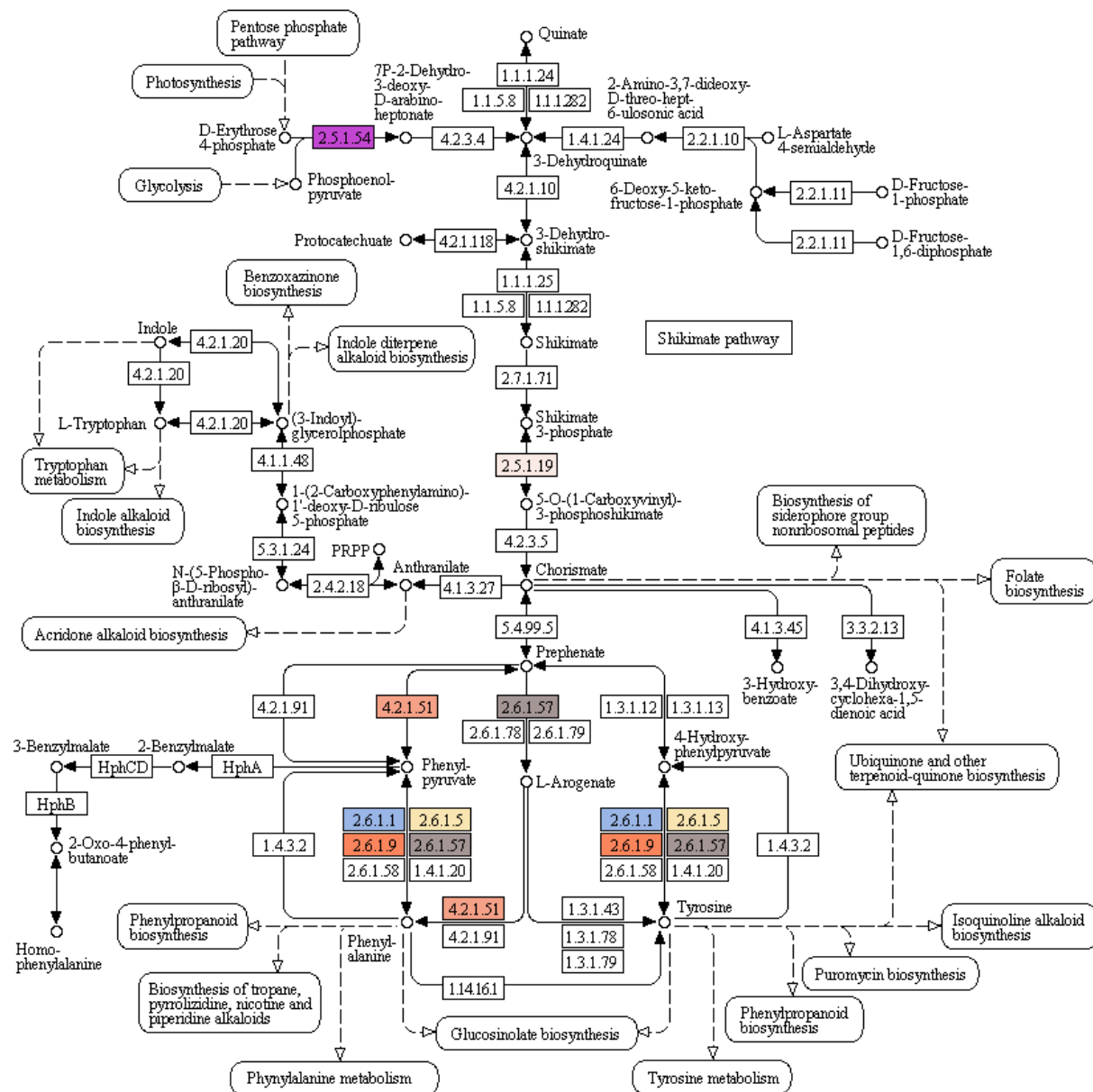
BENZOATE DEGRADATION



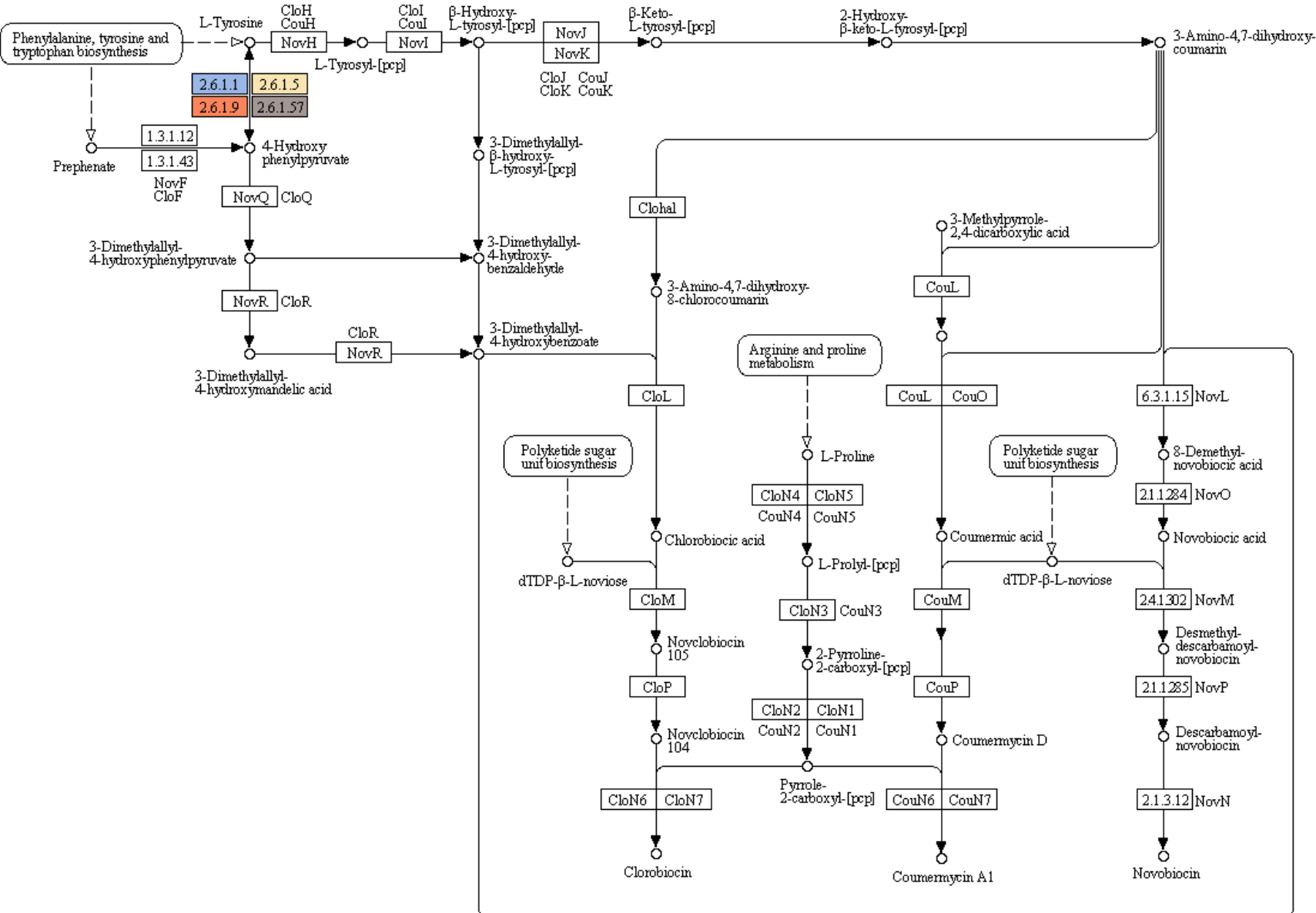
TRYPTOPHAN METABOLISM



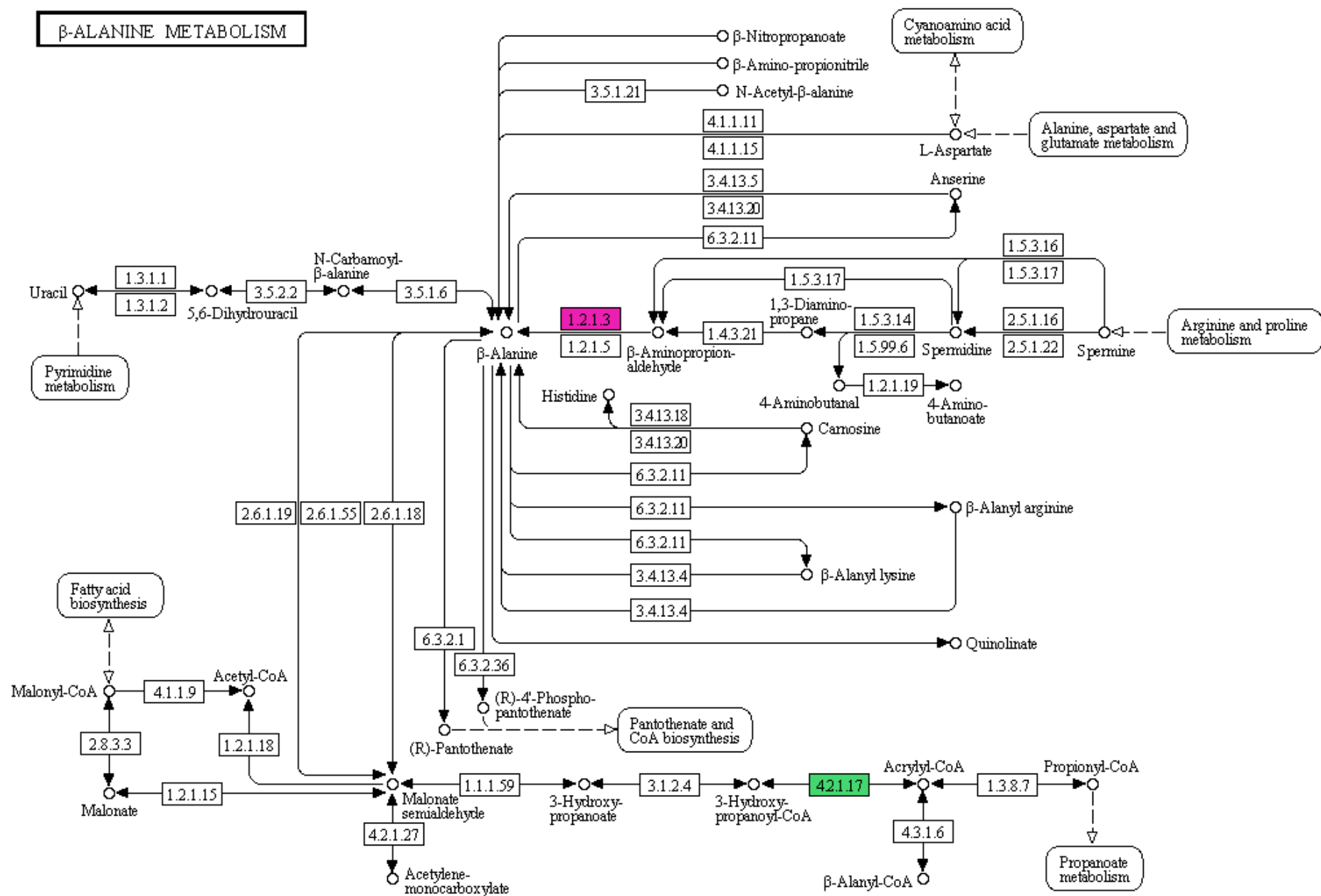
PHENYLALANINE, TYROSINE AND TRYPTOPHAN BIOSYNTHESIS



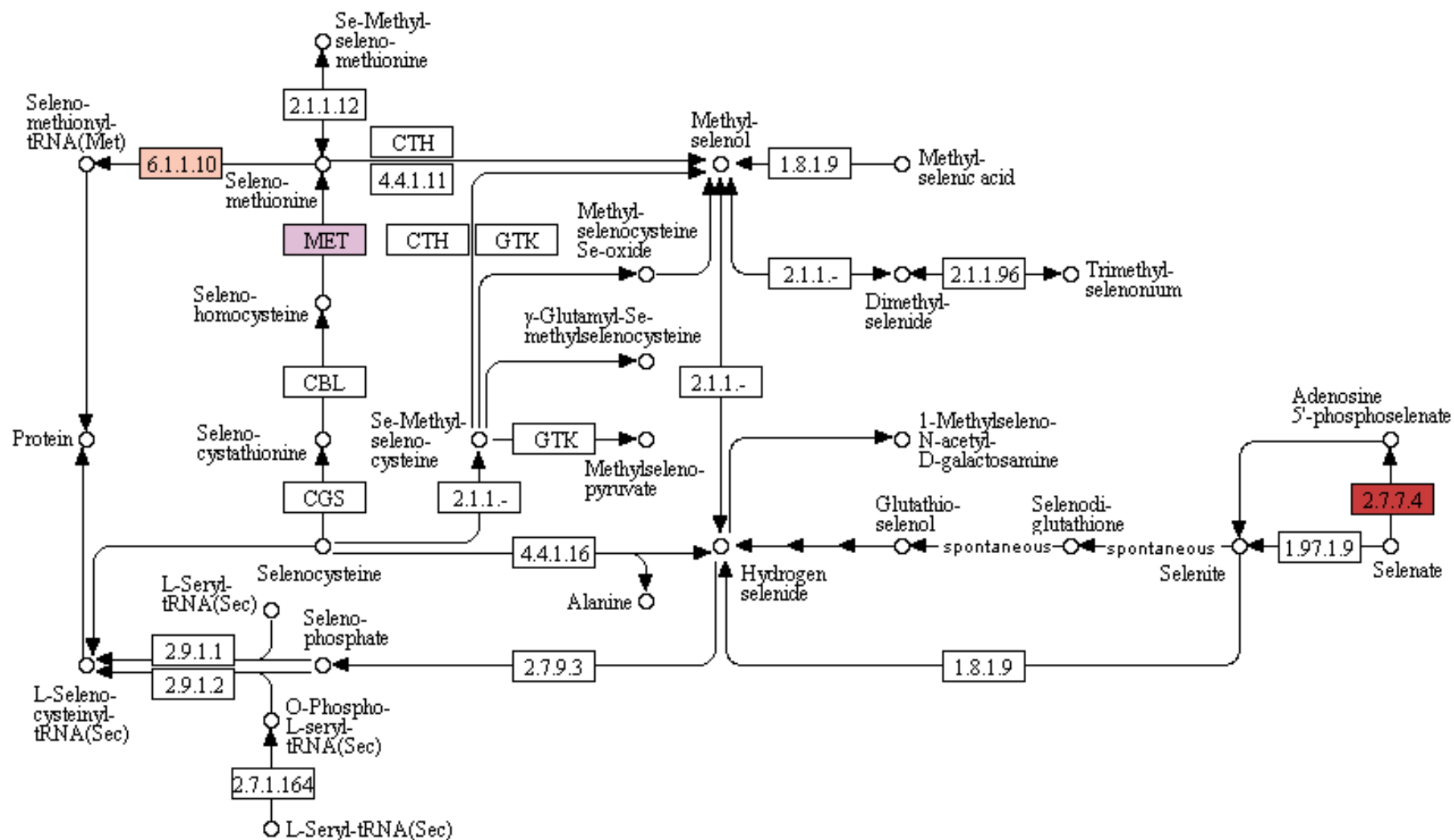
NOVOBIOCIN BIOSYNTHESIS



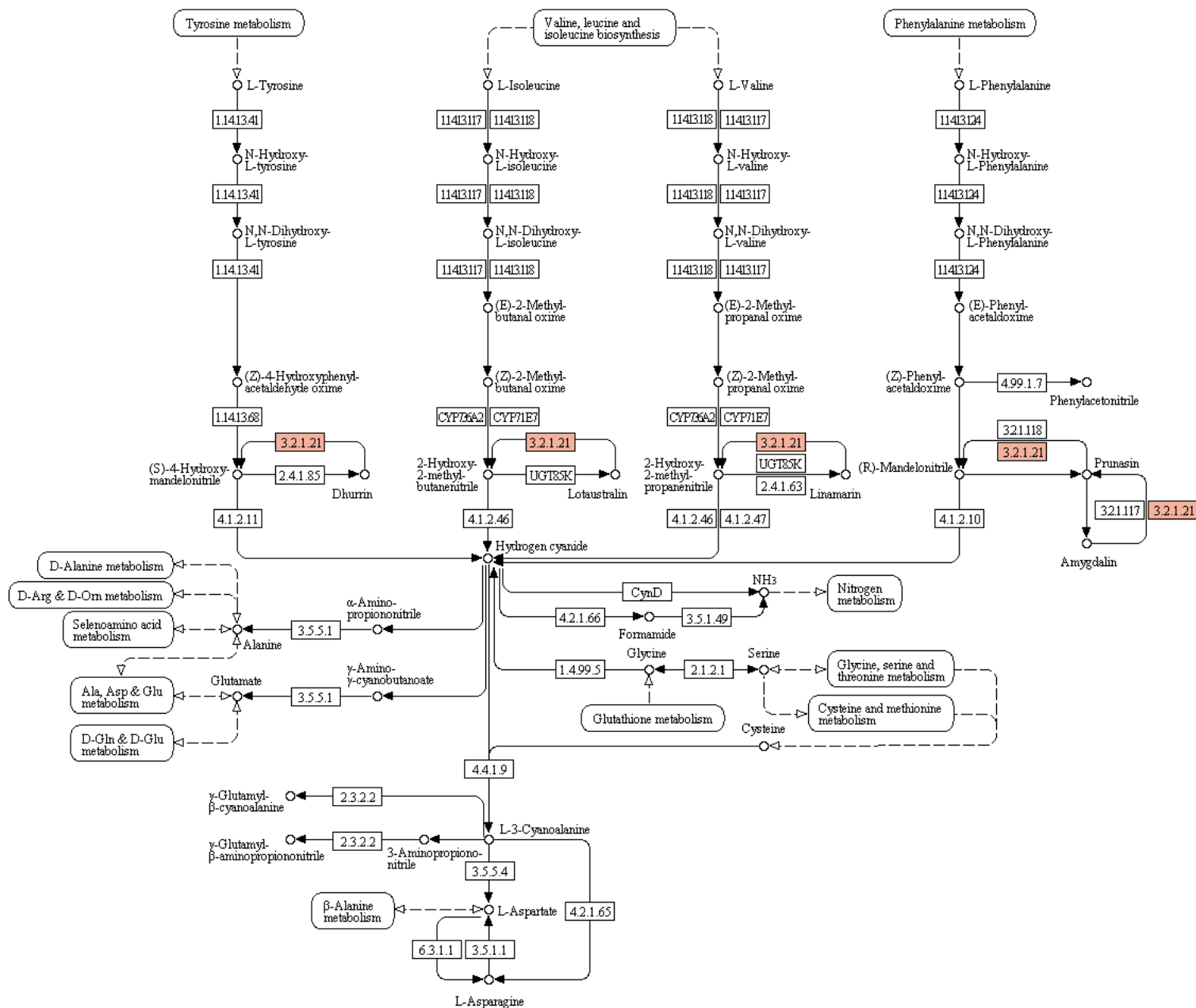
β-ALANINE METABOLISM



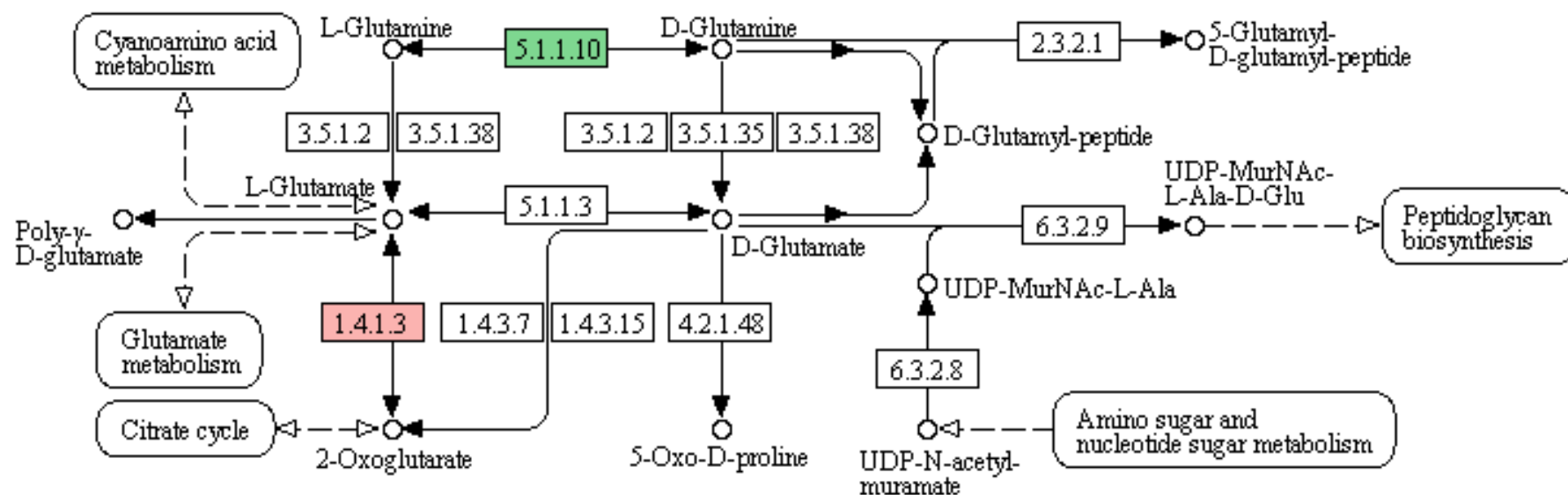
SELENOCOMPOUND METABOLISM



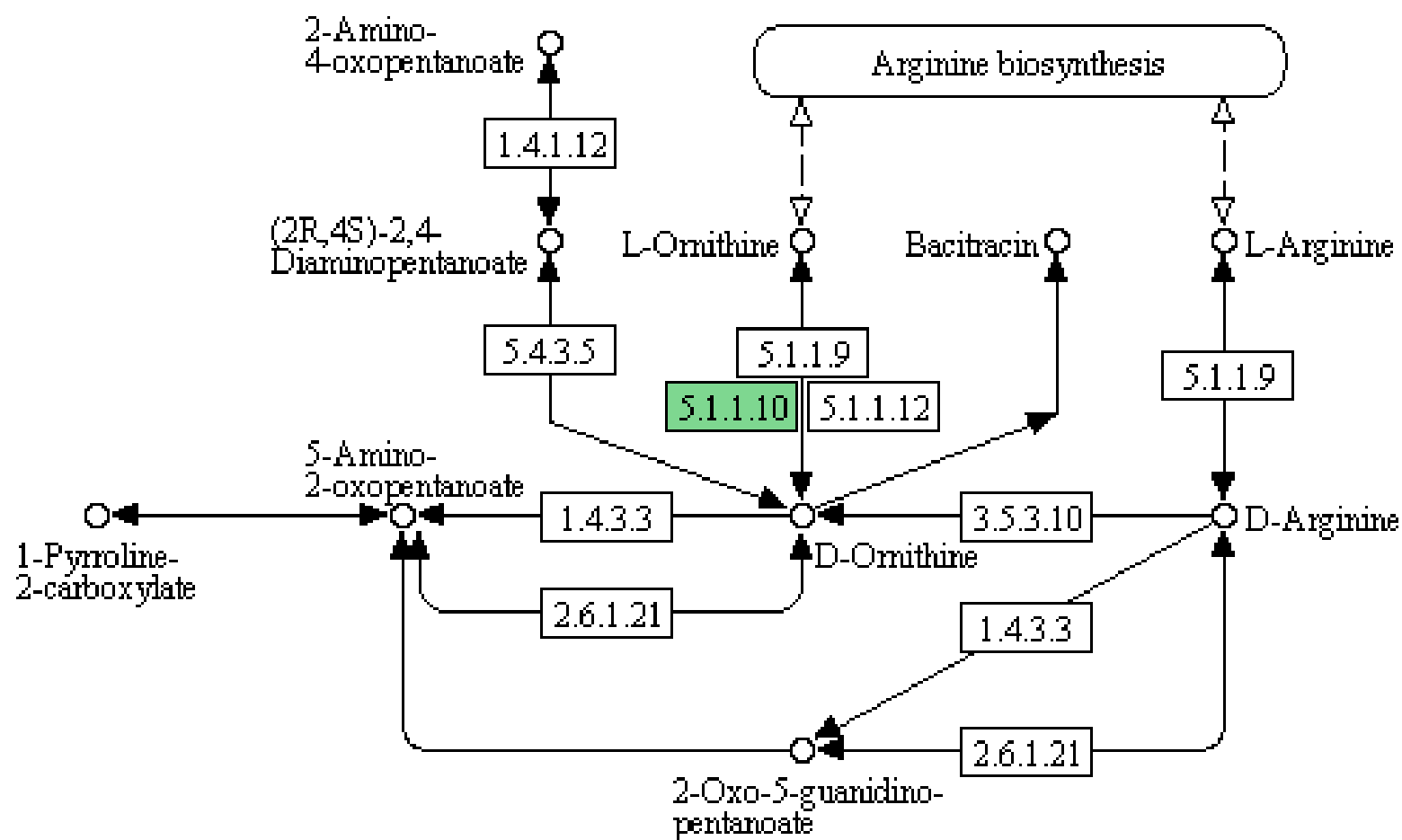
CYANOAMINO ACID METABOLISM



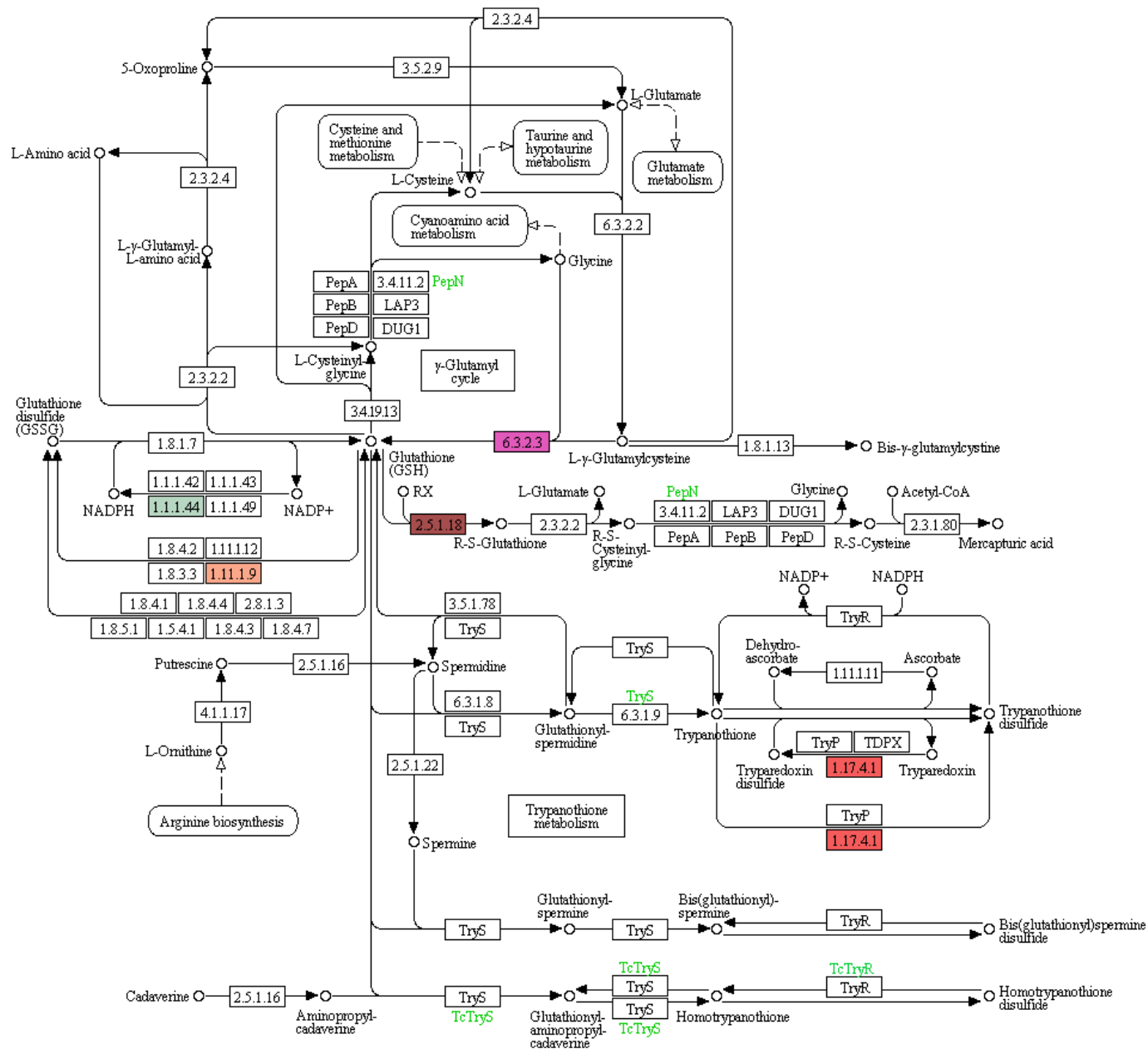
D-GLUTAMINE AND D-GLUTAMATE METABOLISM



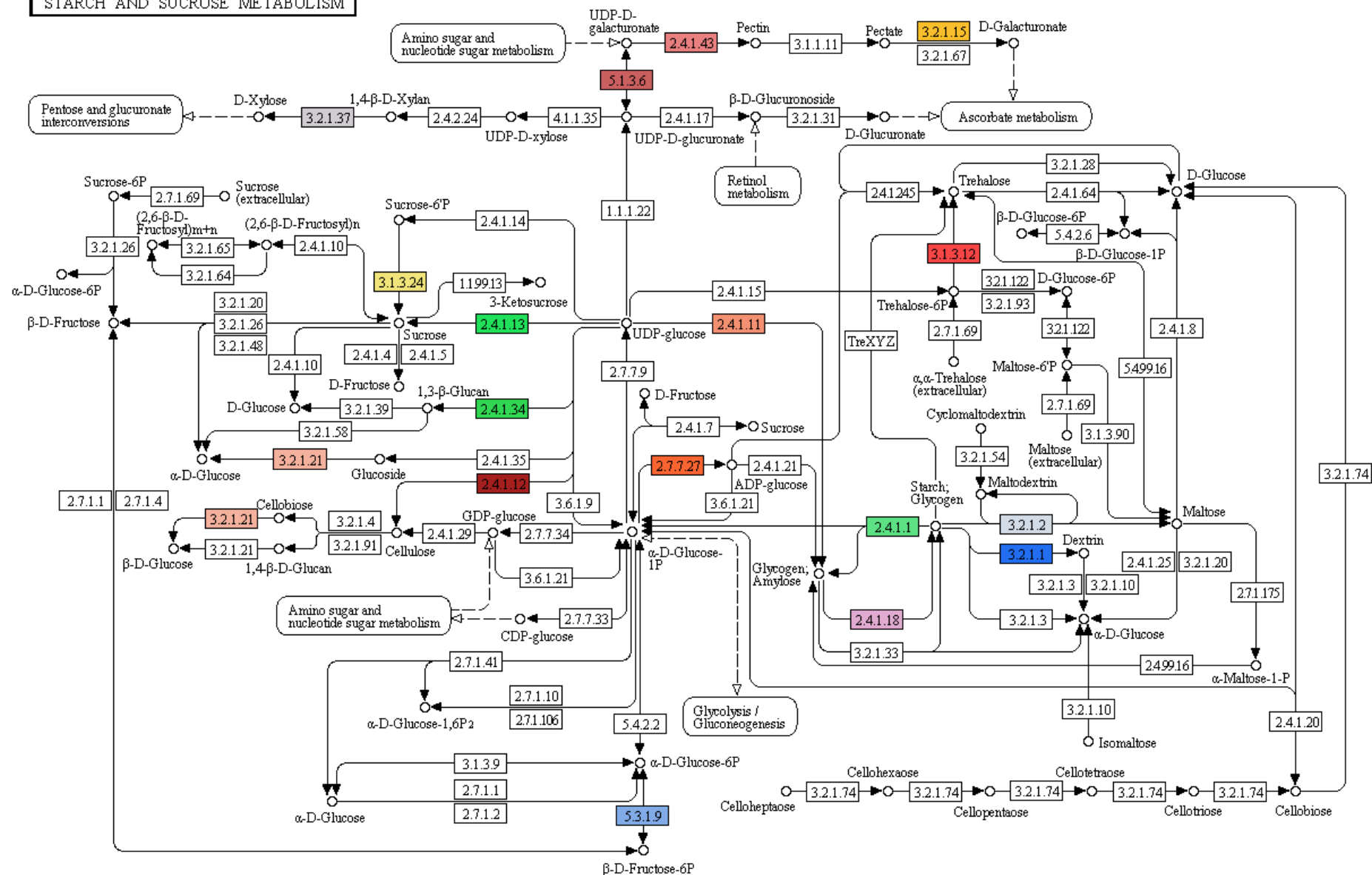
D-ARGININE AND D-ORNITHINE METABOLISM



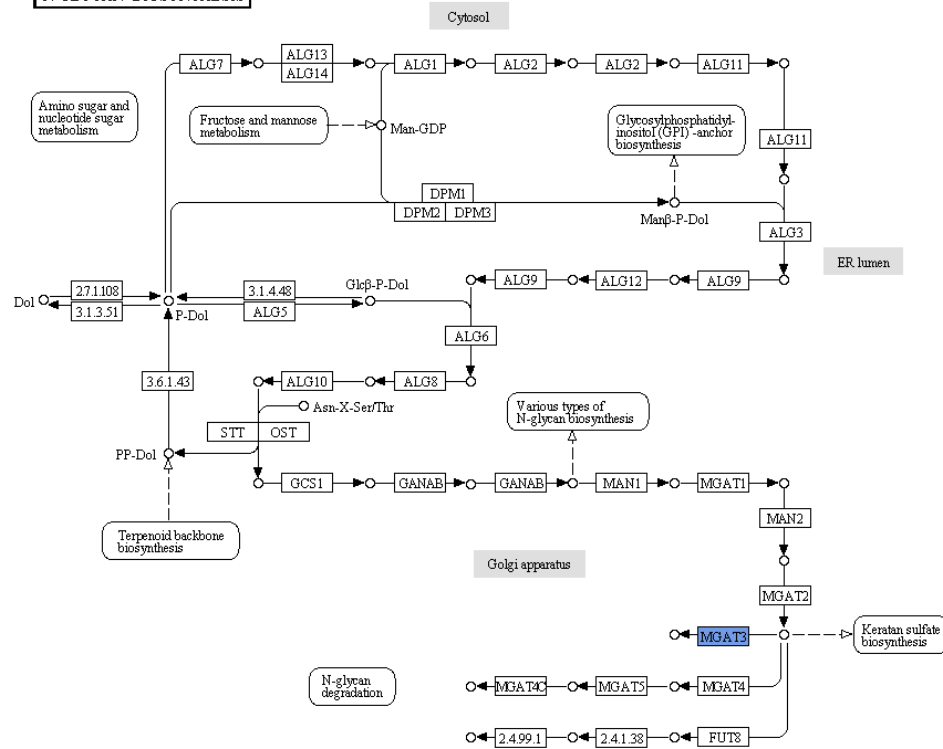
GLUTATHIONE METABOLISM



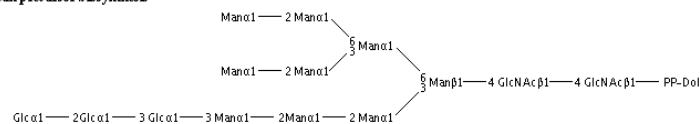
STARCH AND SUCROSE METABOLISM



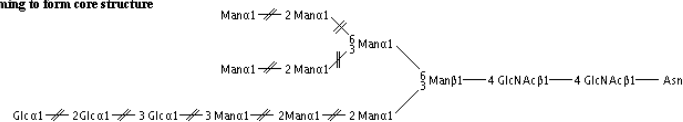
N-GLYCAN BIOSYNTHESIS



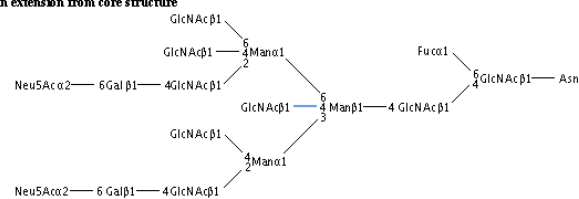
N-glycan precursor biosynthesis



Trimming to form core structure

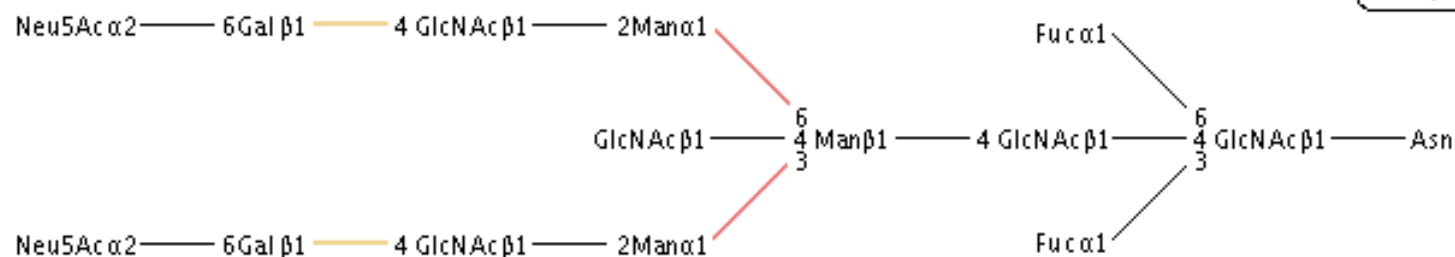


Glycan extension from core structure

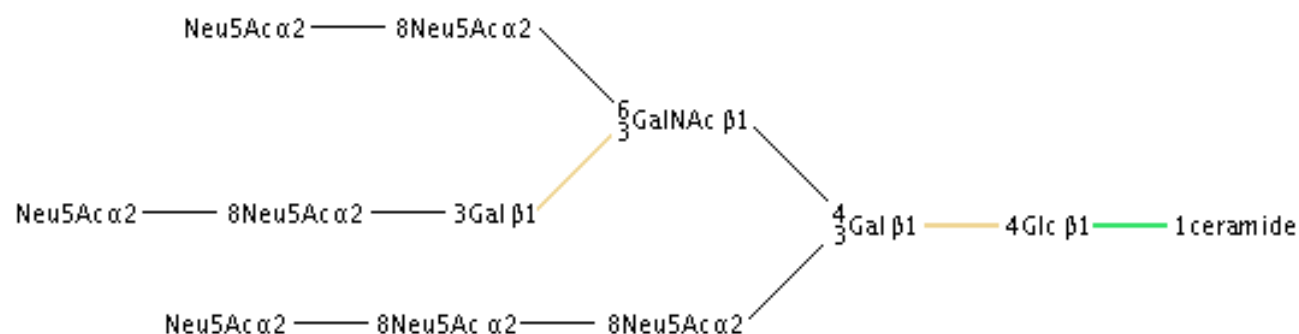


OTHER GLYCAN DEGRADATION

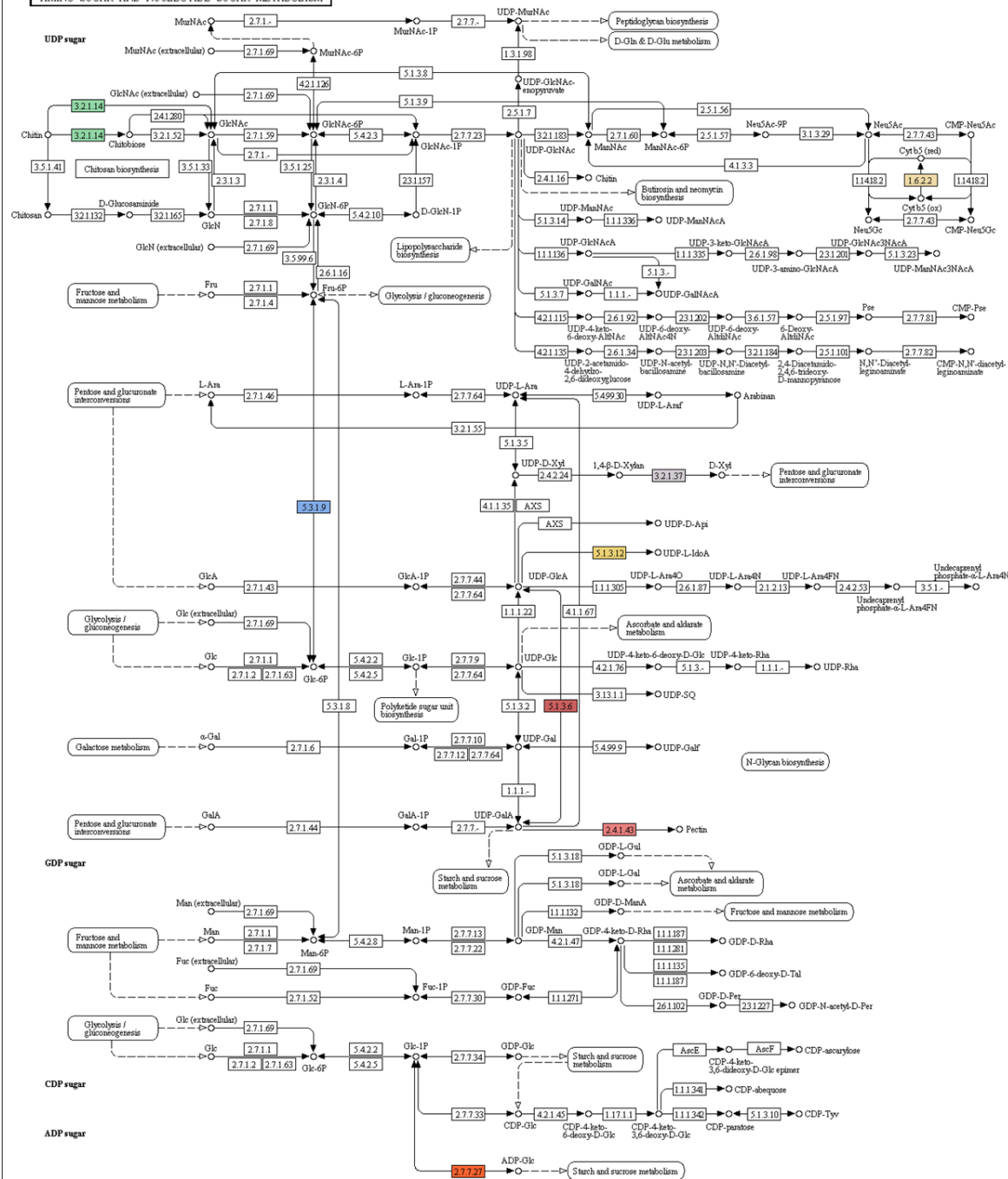
N-glycan



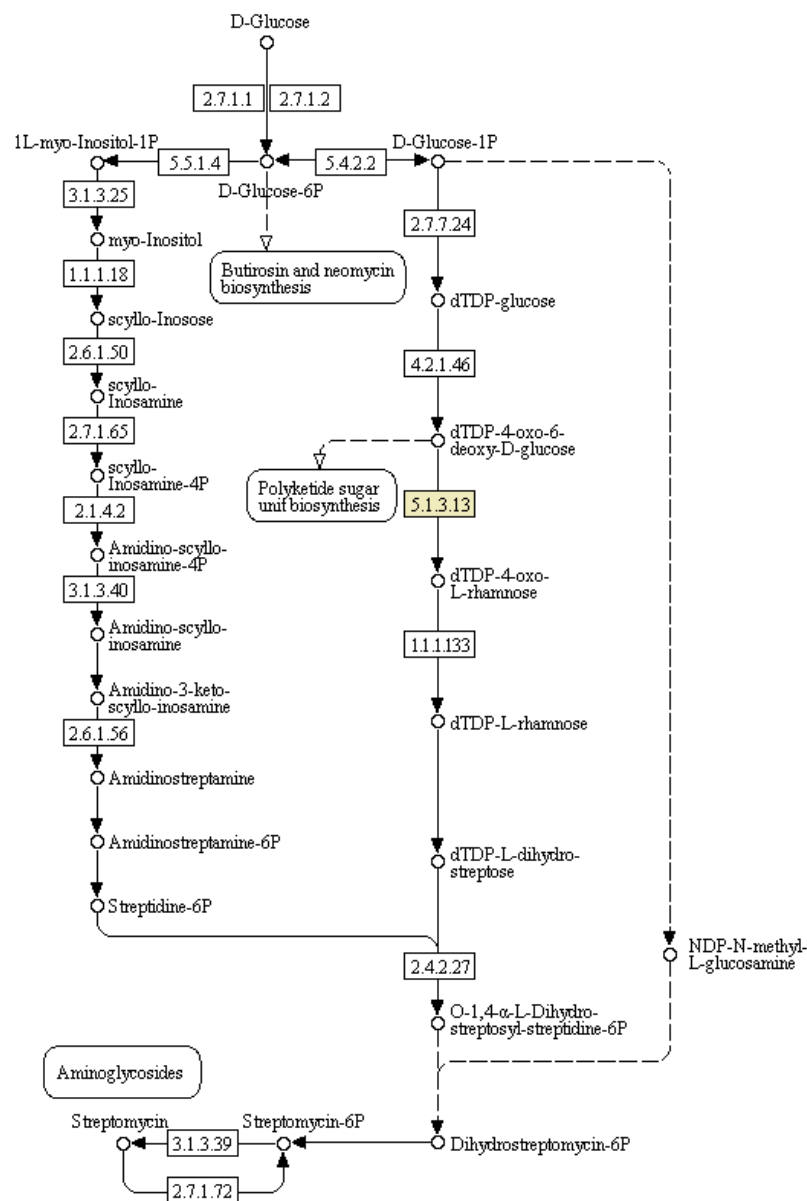
Ganglioside



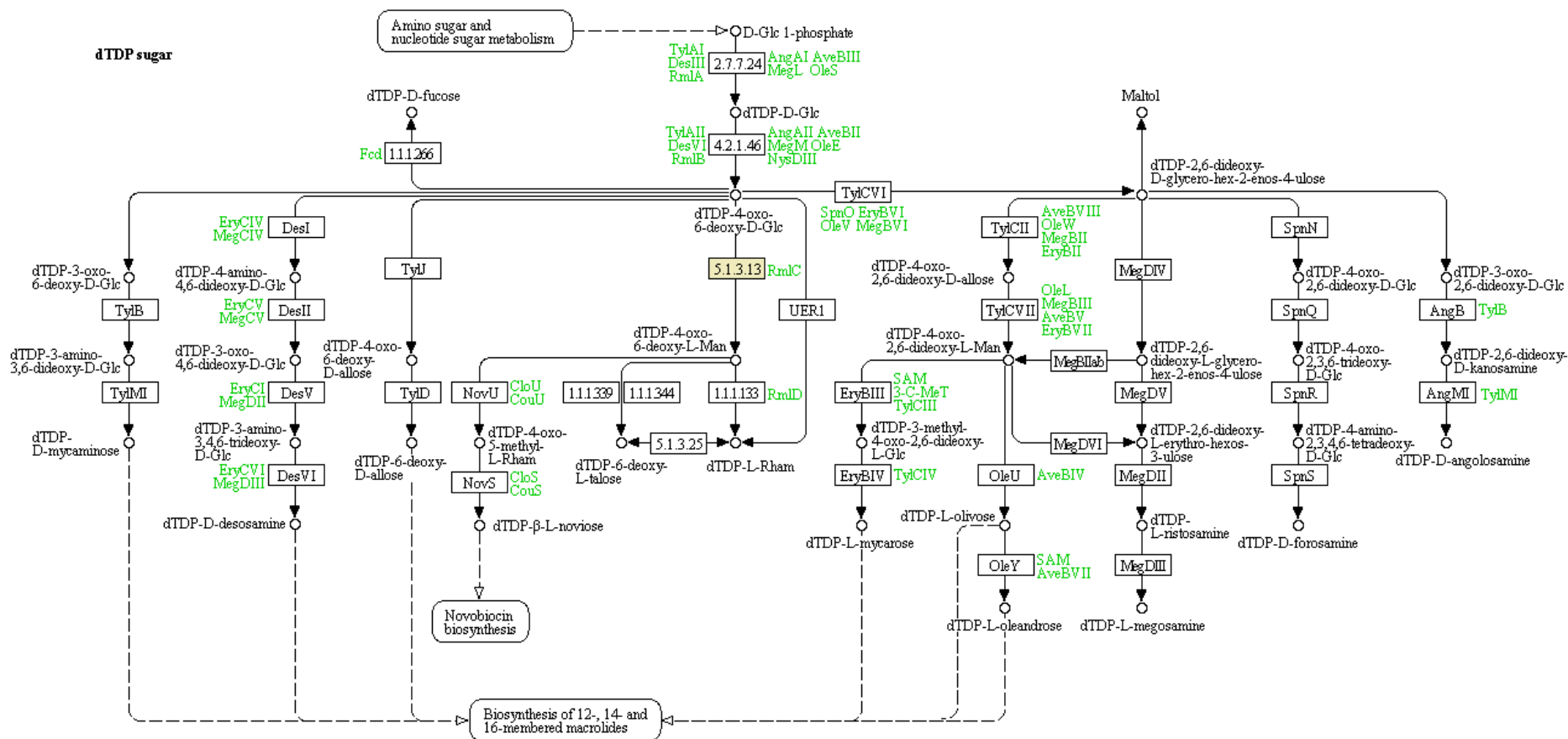
AMINO SUGAR AND NUCLEOTIDE SUGAR METABOLISM



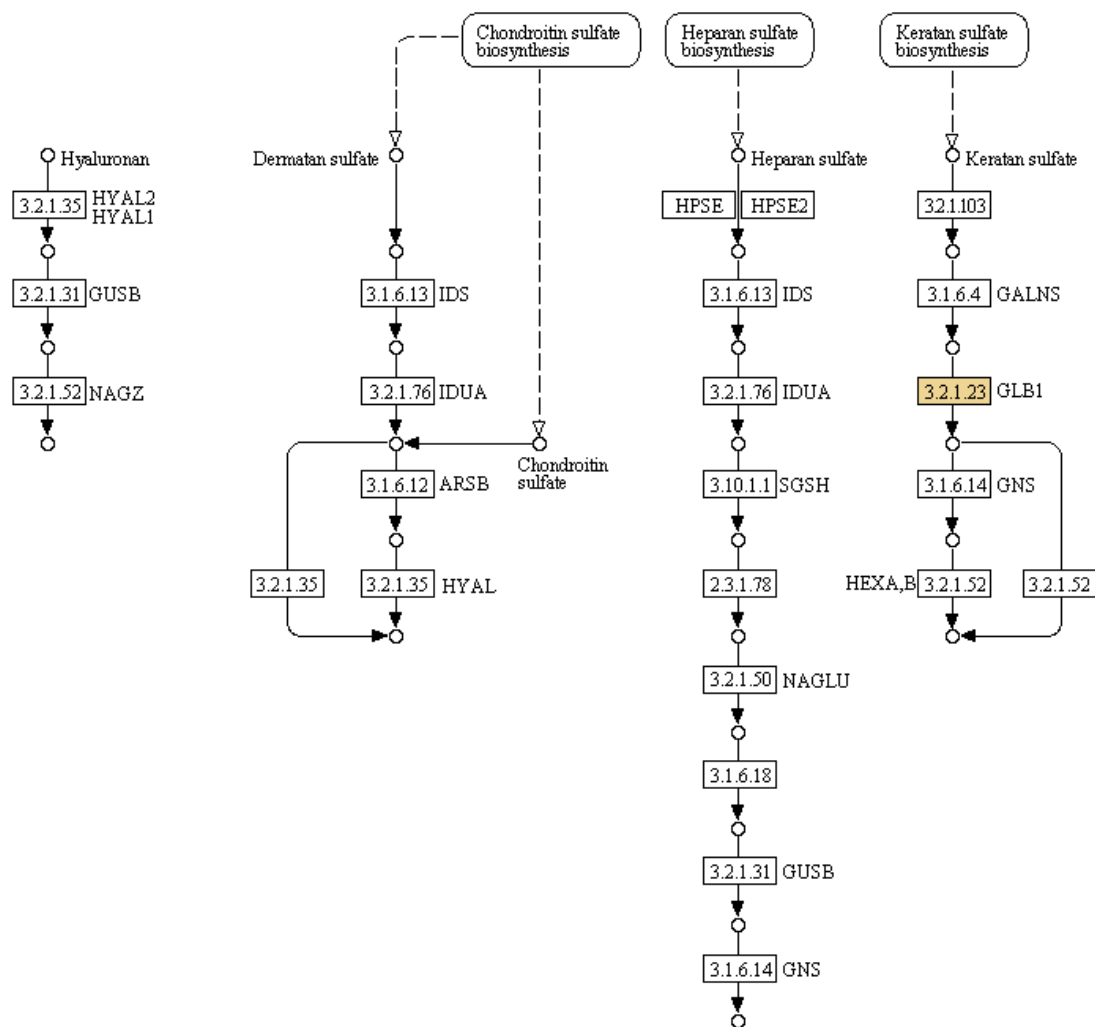
STREPTOMYCIN BIOSYNTHESIS



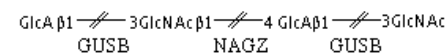
POLYKETIDE SUGAR UNIT BIOSYNTHESIS



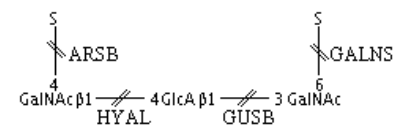
GLYCOSAMINOGLYCAN DEGRADATION



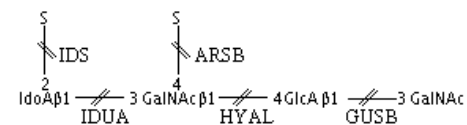
Hyaluronan



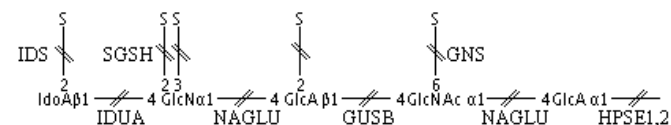
Chondroitin sulfate



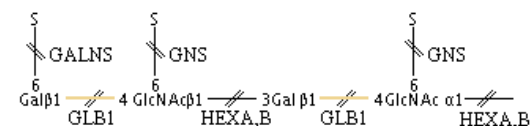
Dermatan sulfate



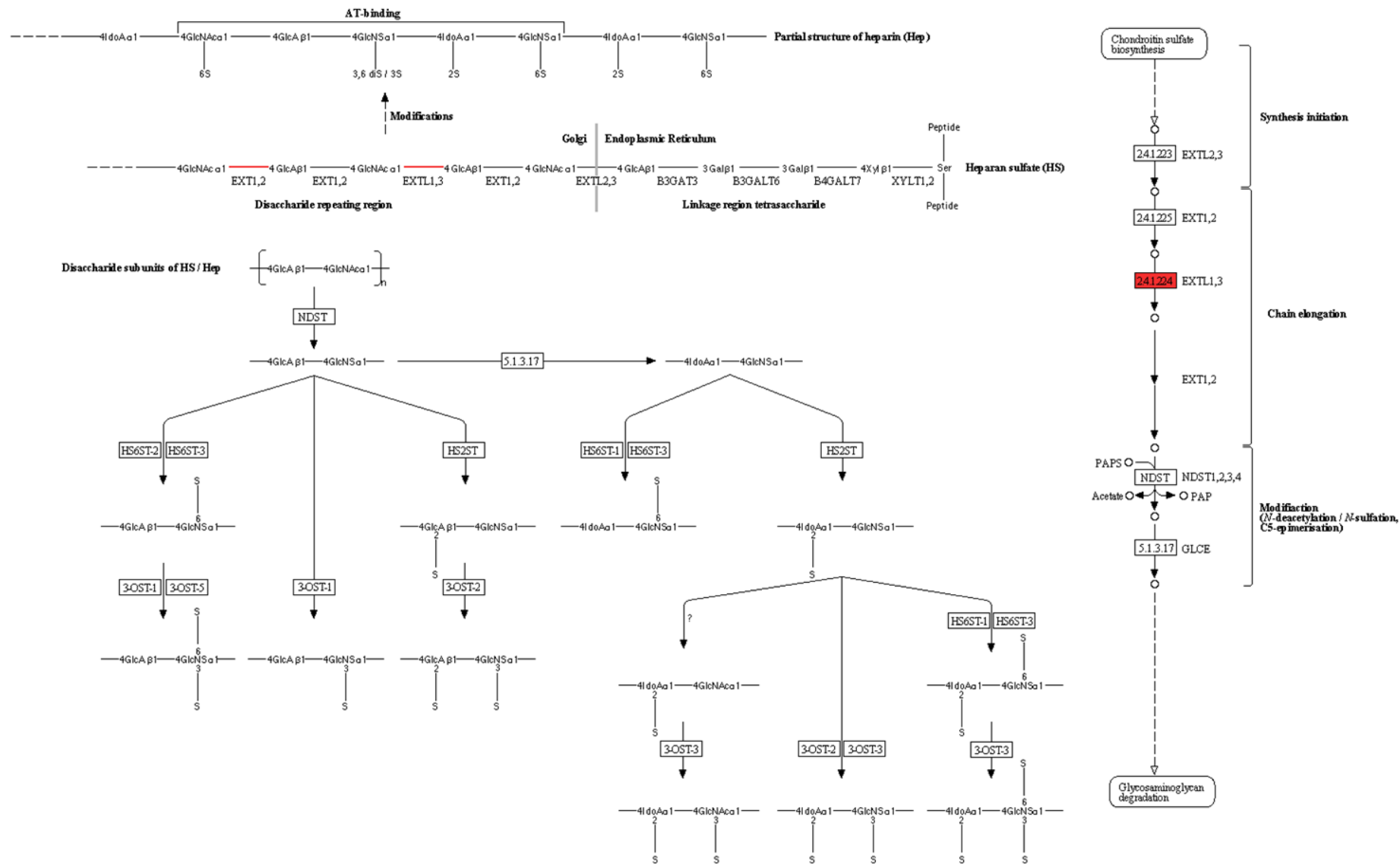
Heparan sulfate



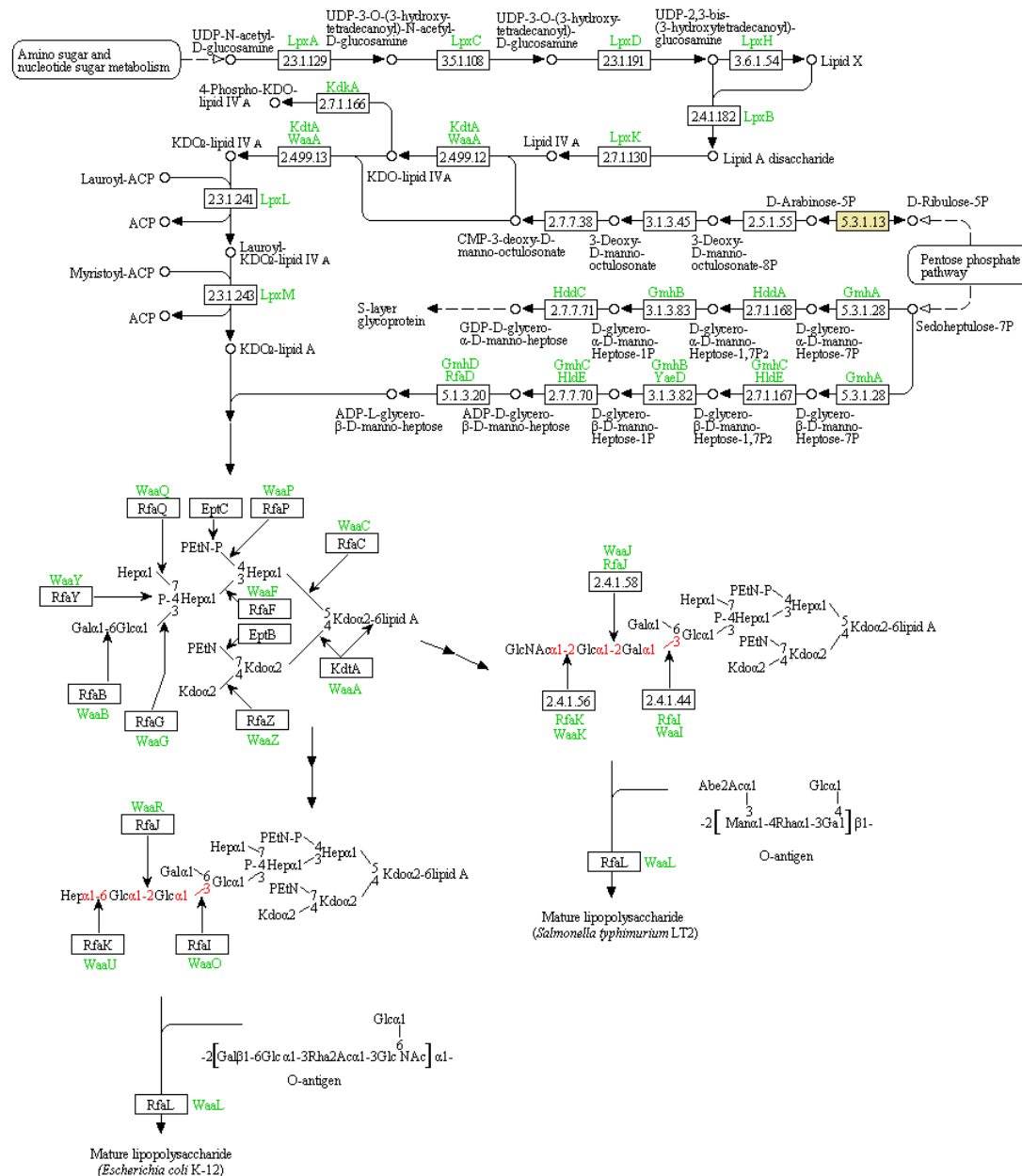
Keratan sulfate



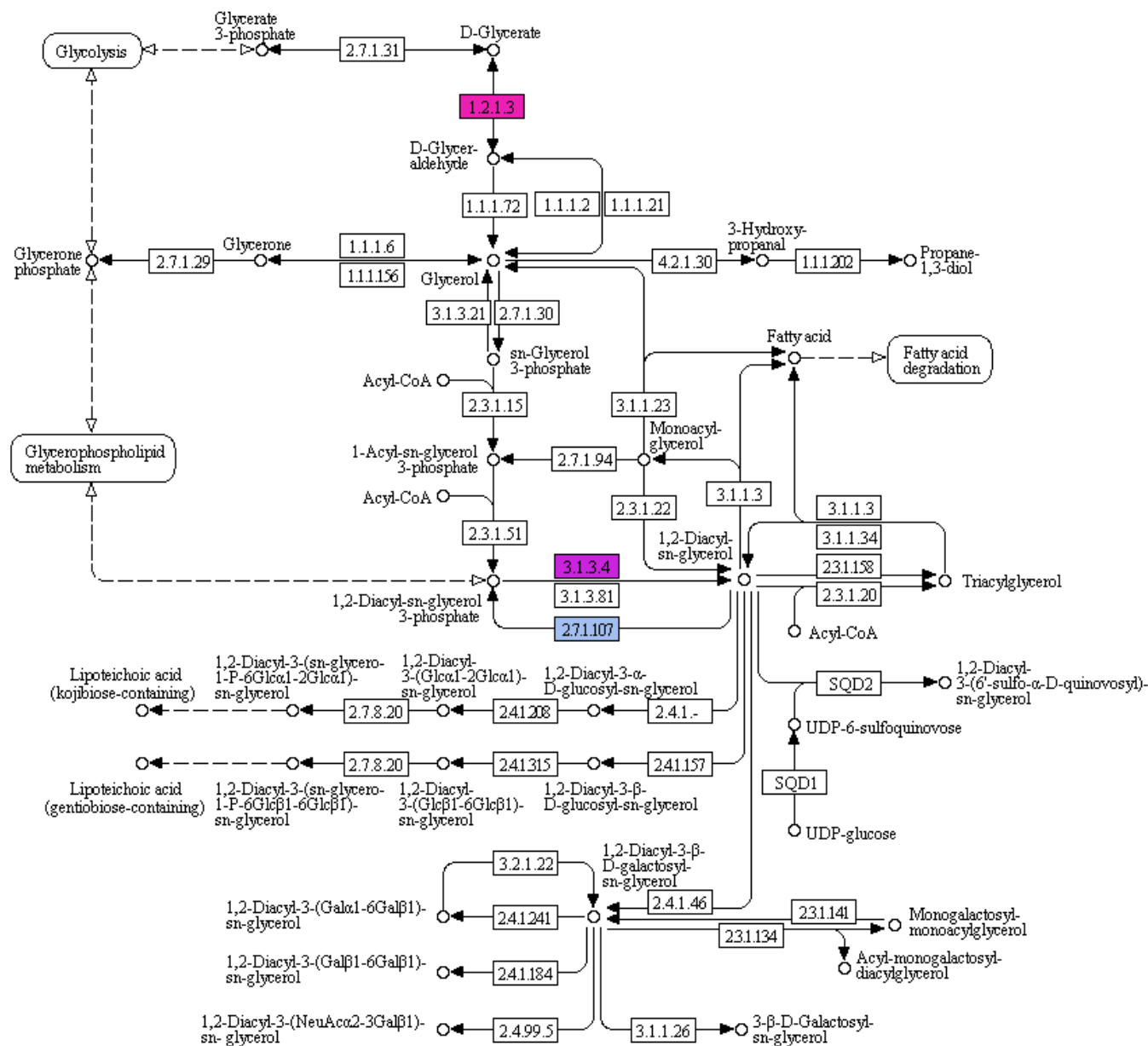
GLYCOSAMINOGLYCAN BIOSYNTHESIS - HEPARAN SULFATE / HEPARIN



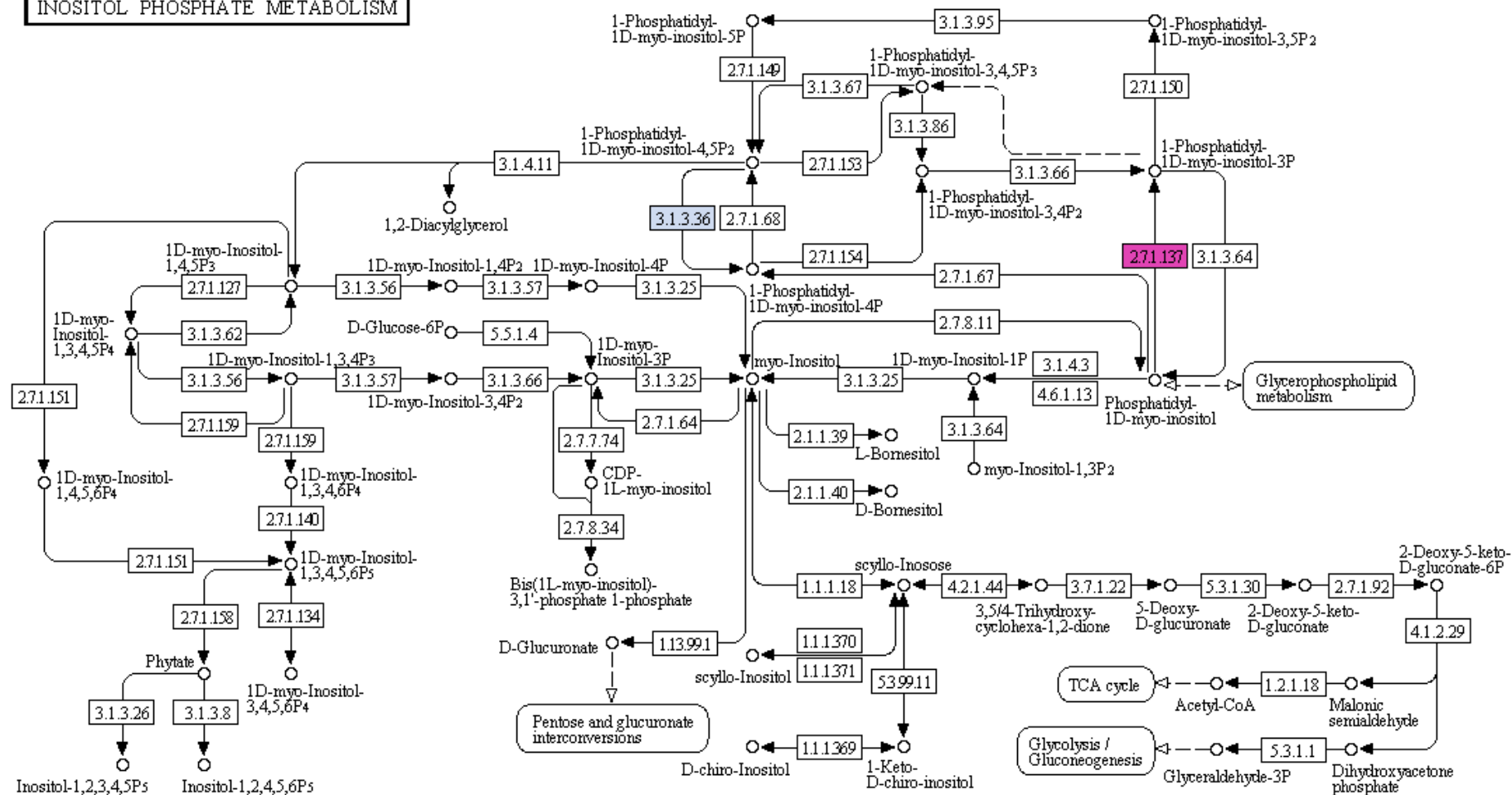
LIPOPOLYSACCHARIDE BIOSYNTHESIS



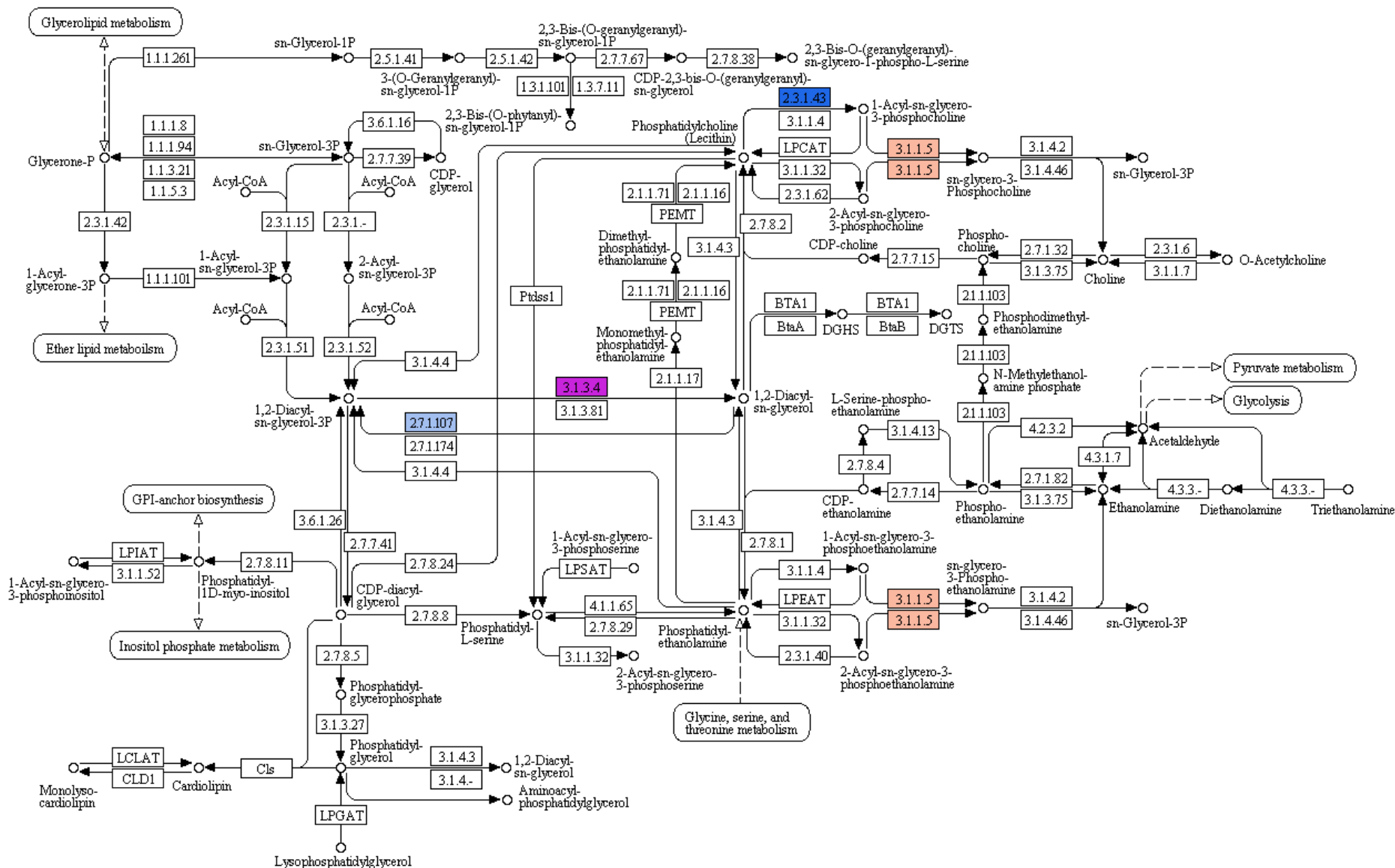
GLYCEROLIPID METABOLISM



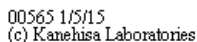
INOSITOL PHOSPHATE METABOLISM



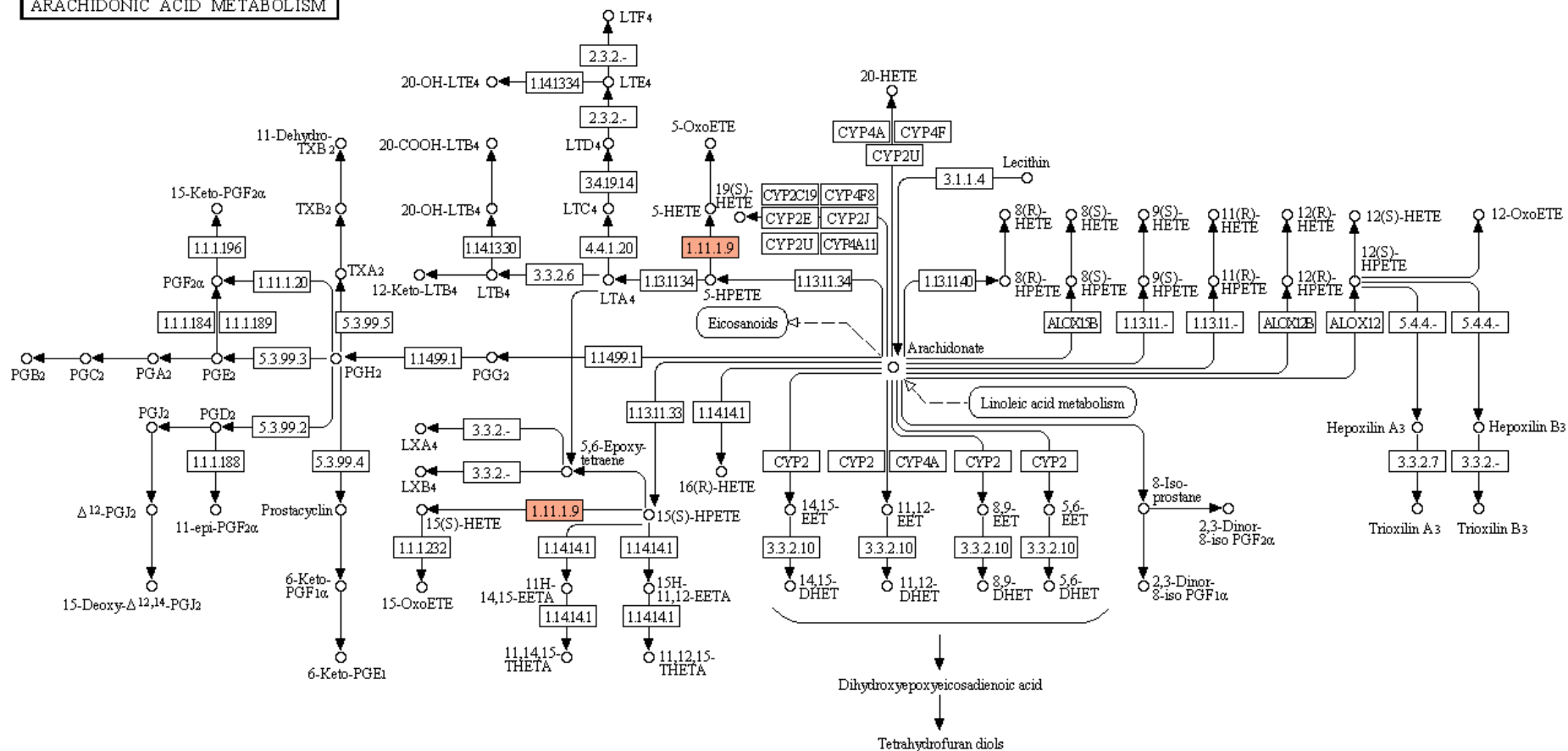
GLYCEROPHOSPHOLIPID METABOLISM



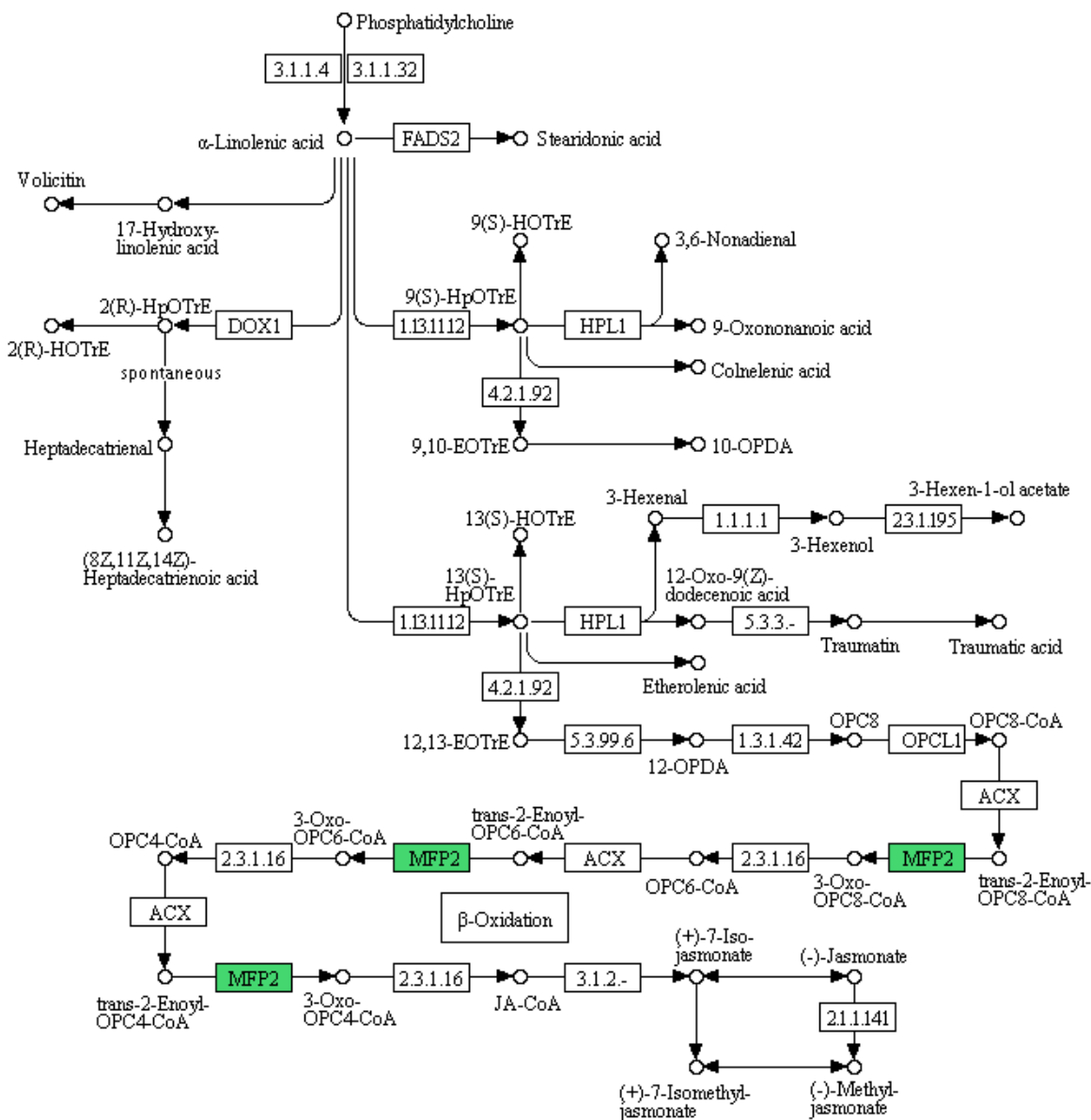
ETHER LIPID METABOLISM



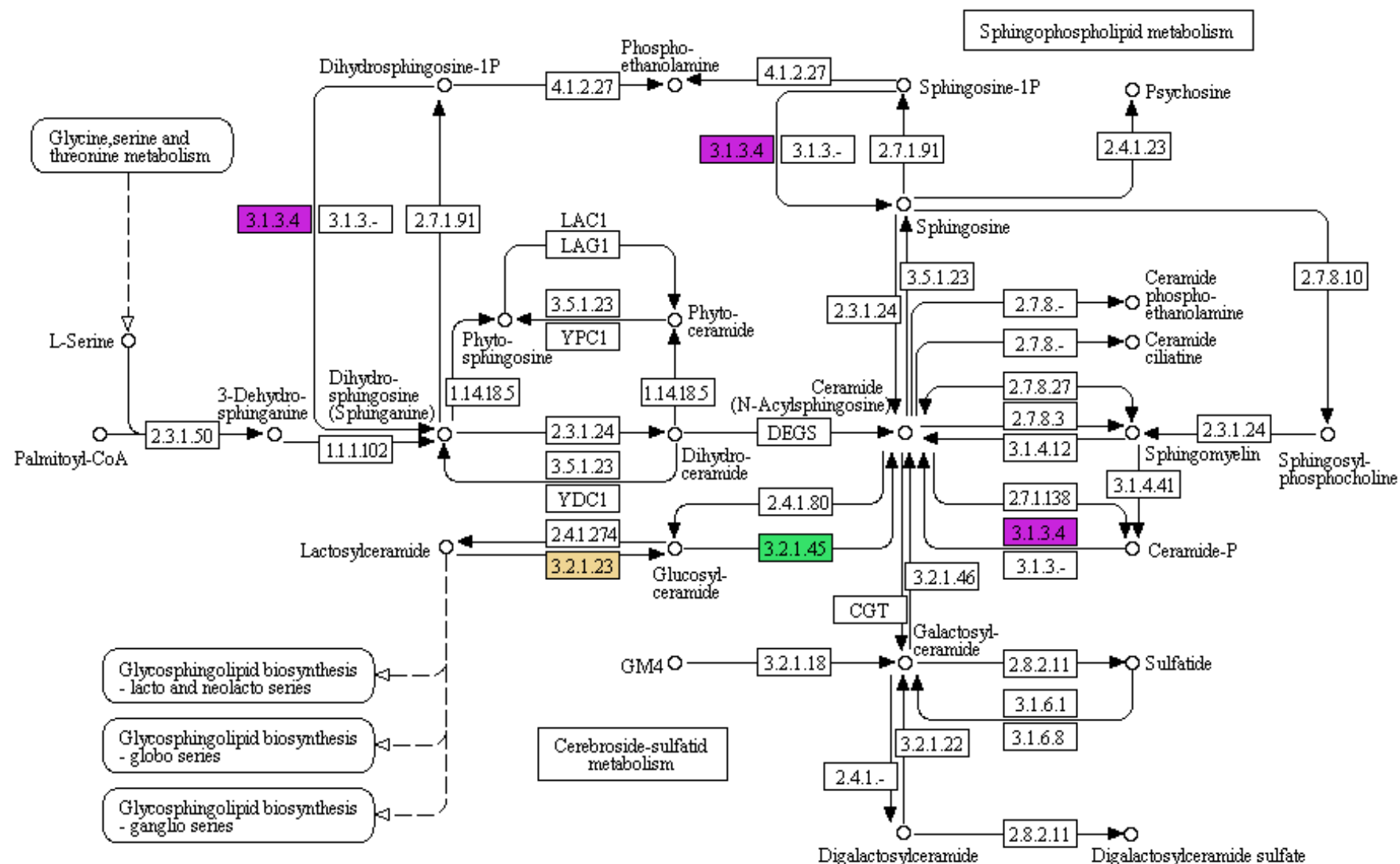
ARACHIDONIC ACID METABOLISM



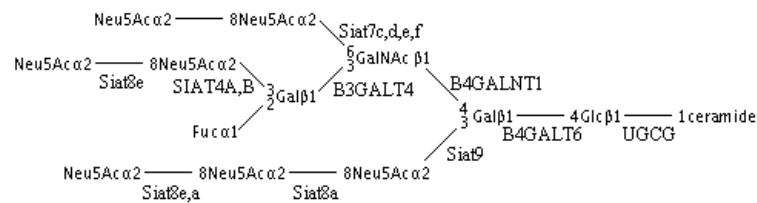
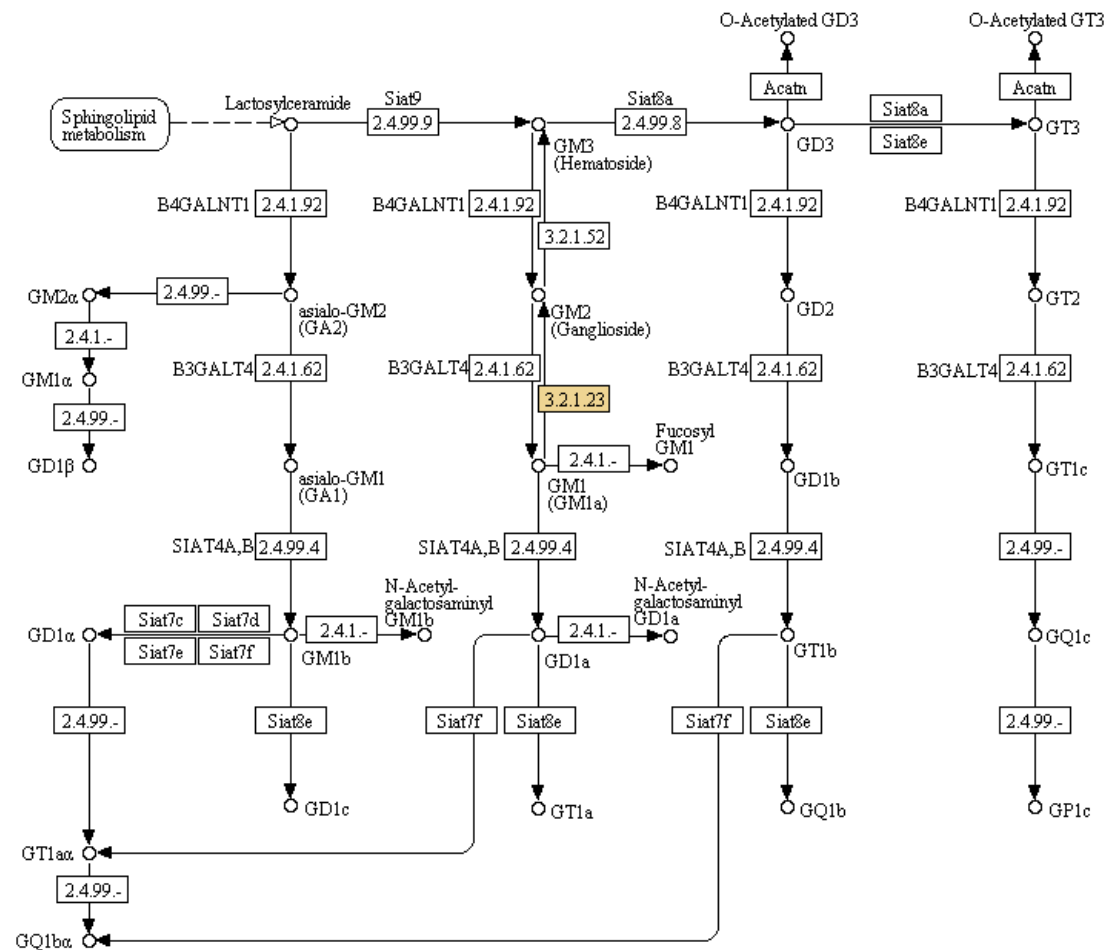
α-LINOLENIC ACID METABOLISM



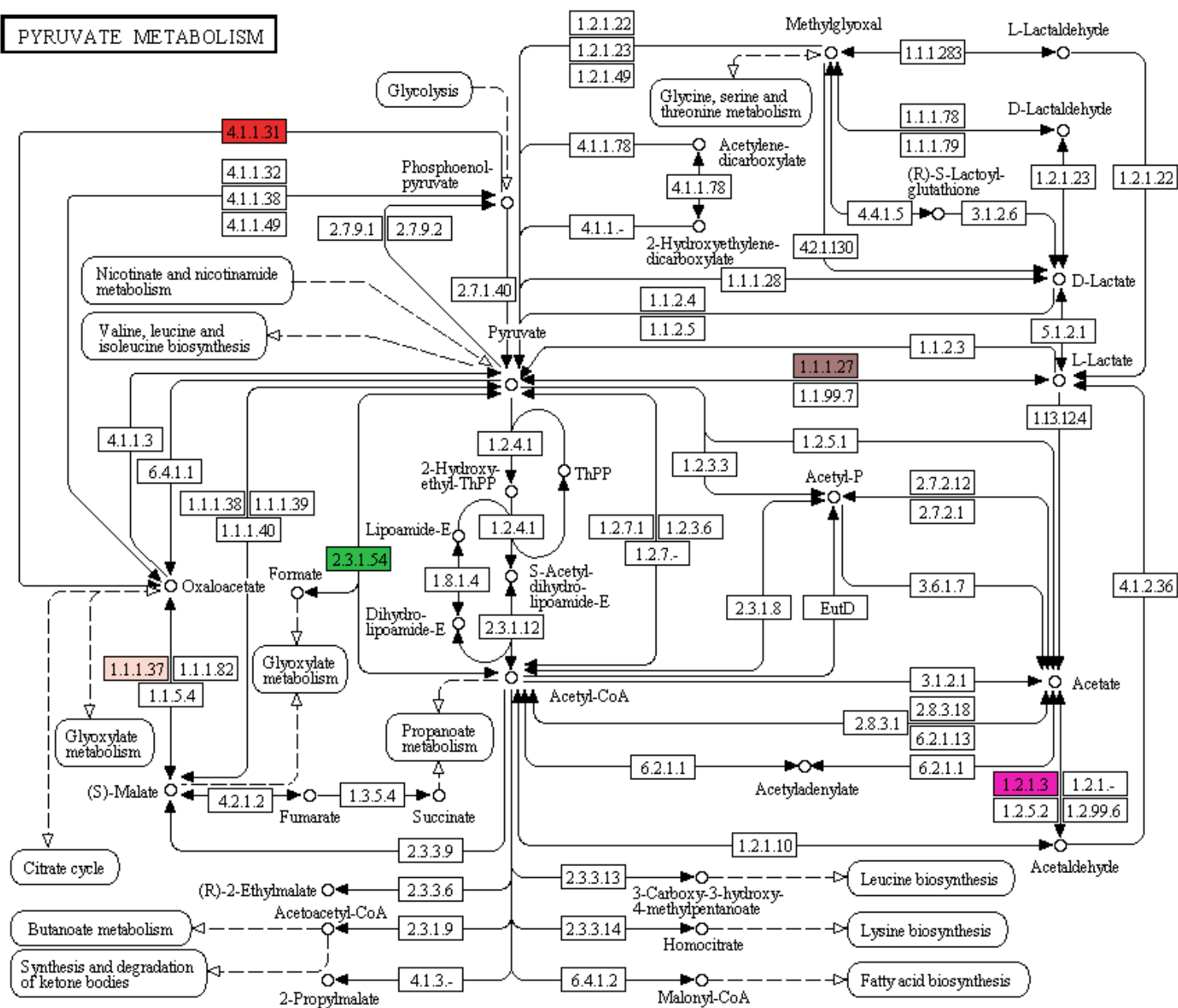
SPHINGOLIPID METABOLISM



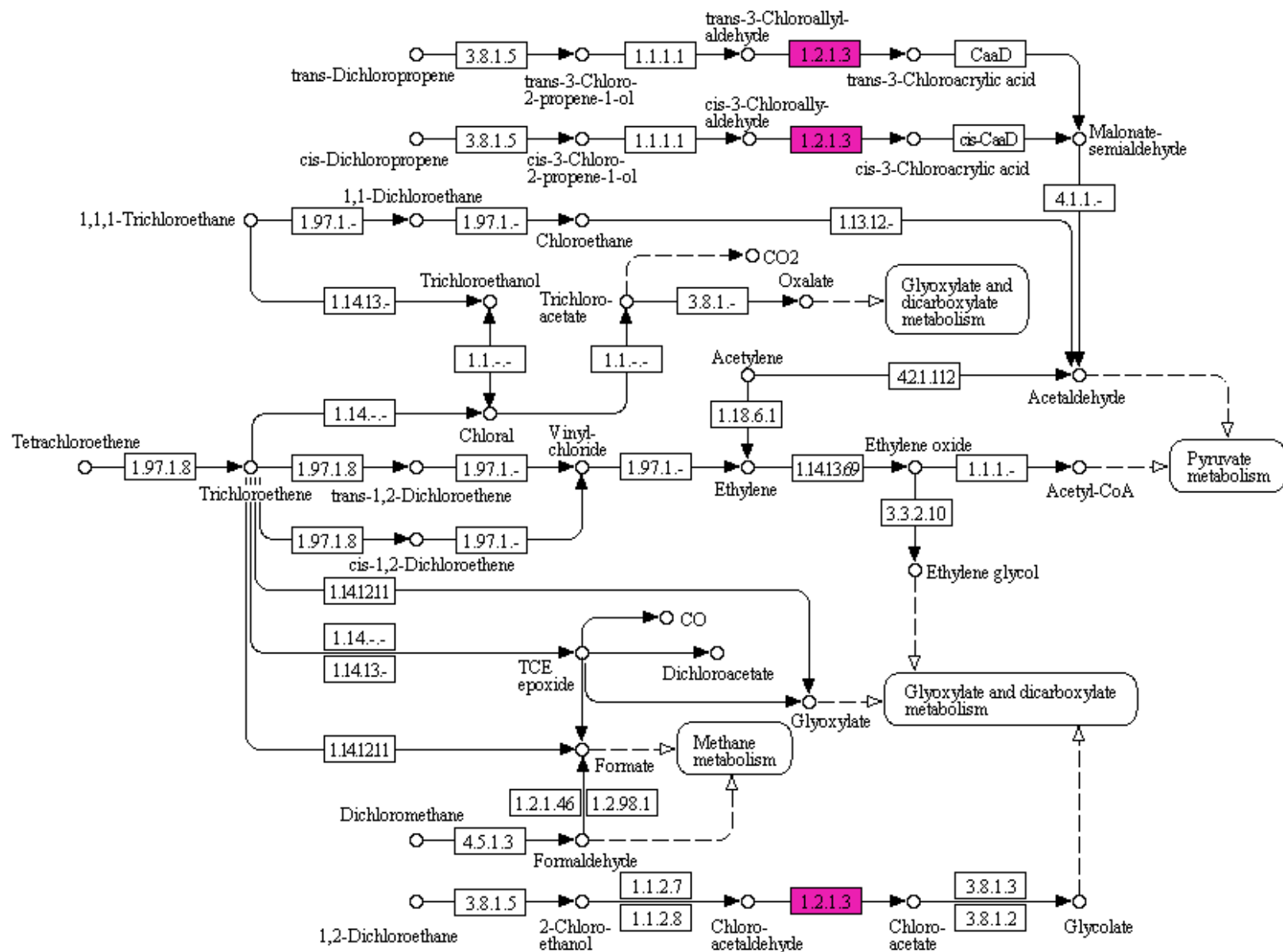
GLYCOSPHINGOLIPID BIOSYNTHESIS - GANGLIO SERIES



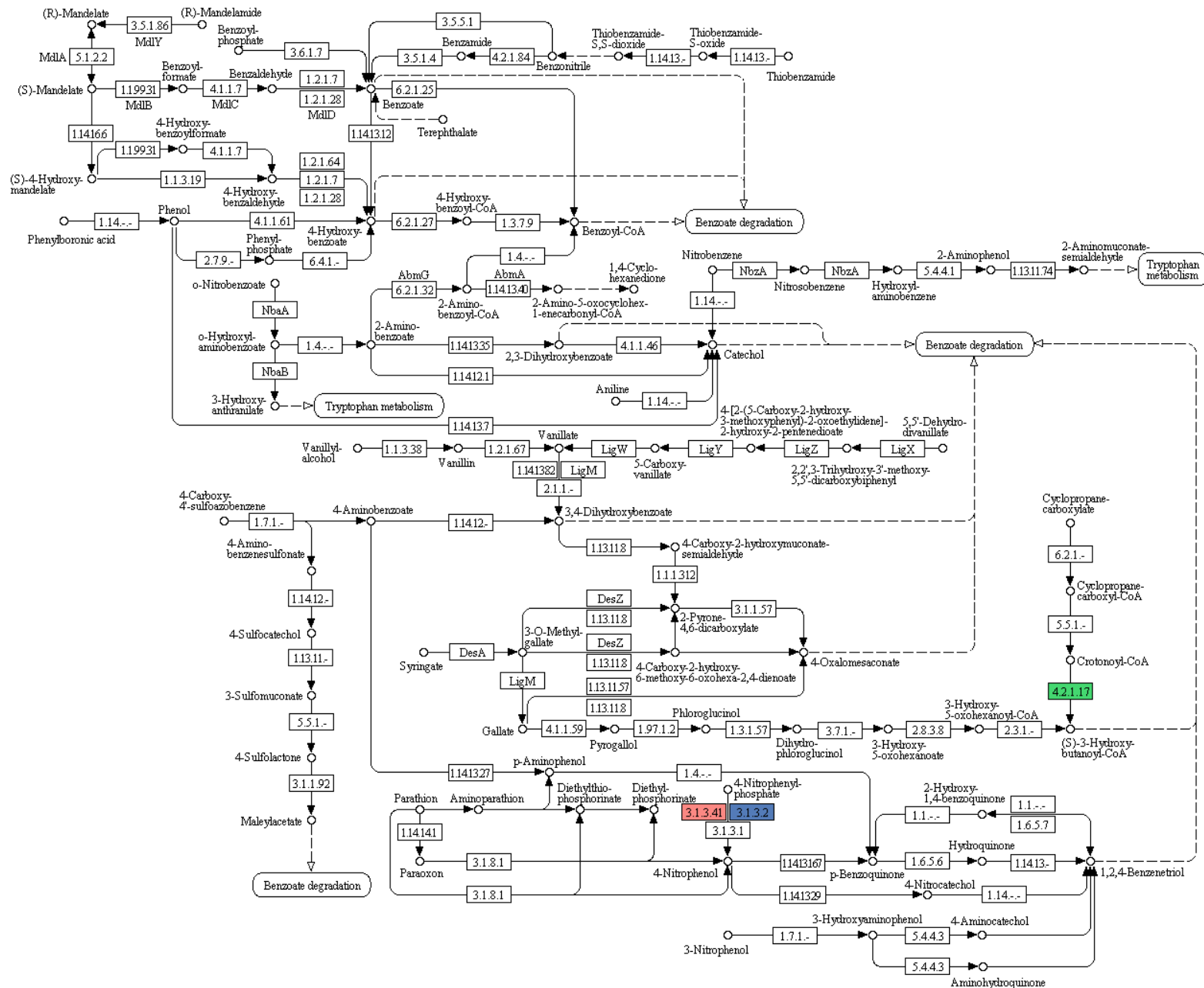
PYRUVATE METABOLISM



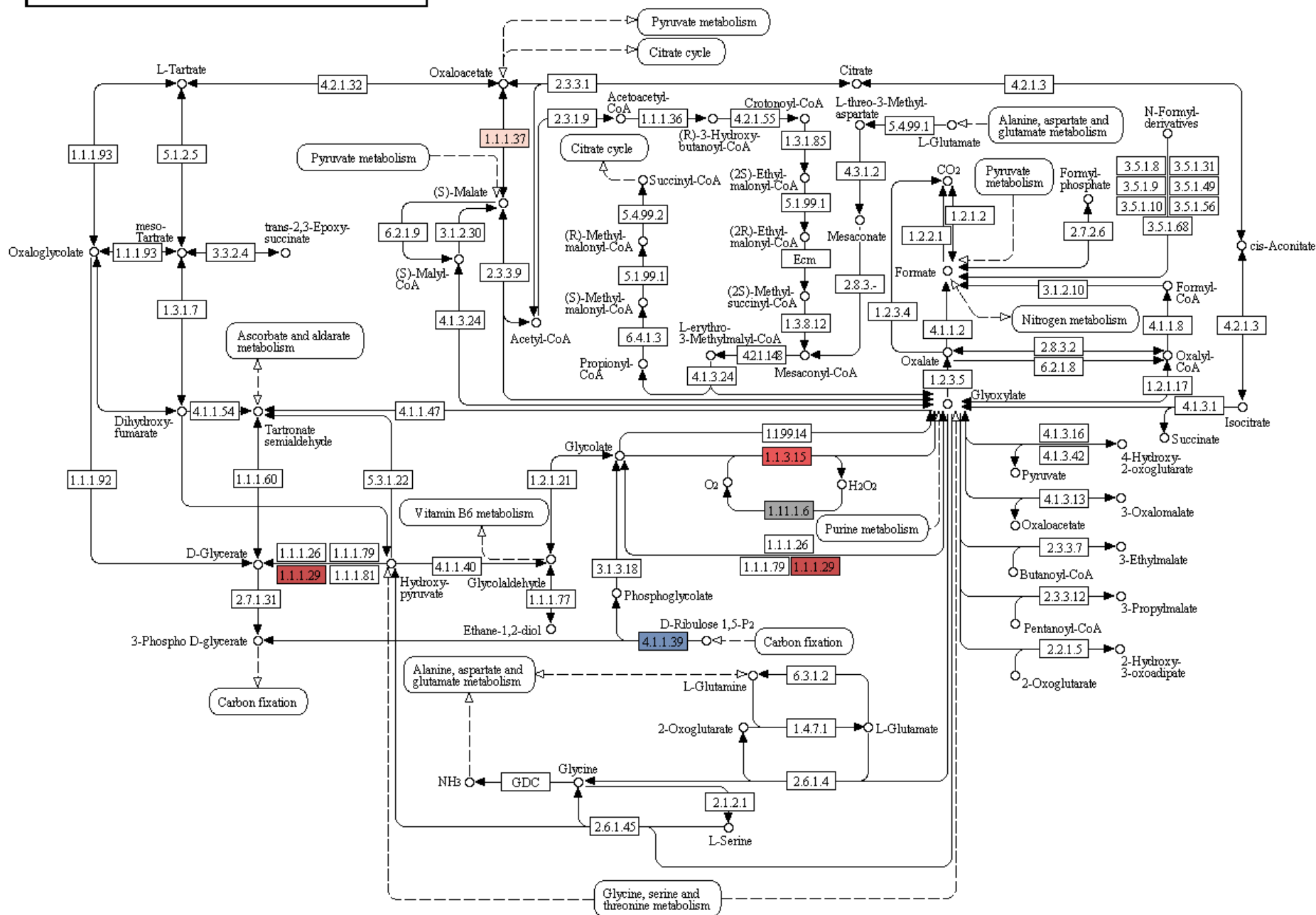
CHLOROALKANE AND CHLOROALKENE DEGRADATION



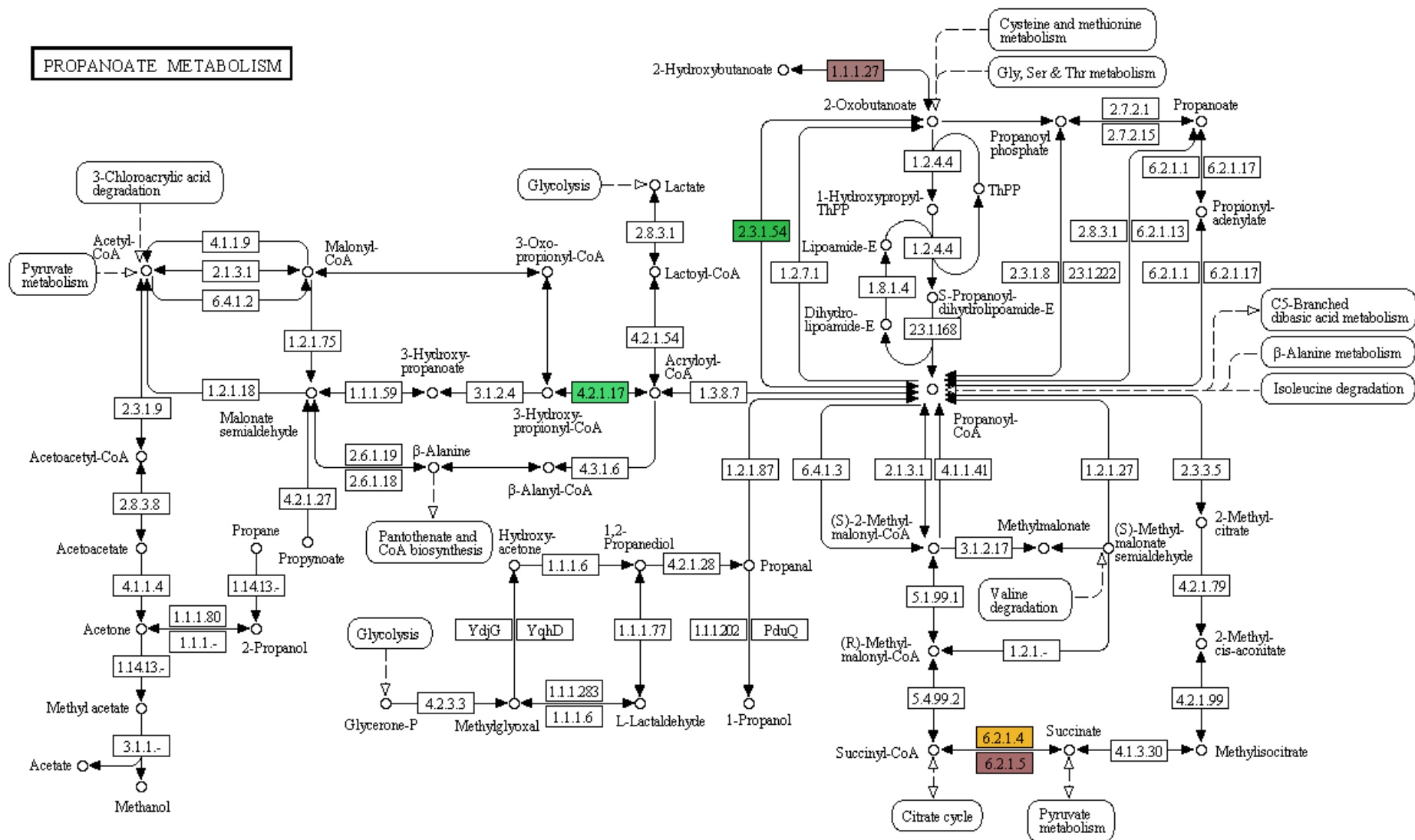
AMINO BENZOATE DEGRADATION



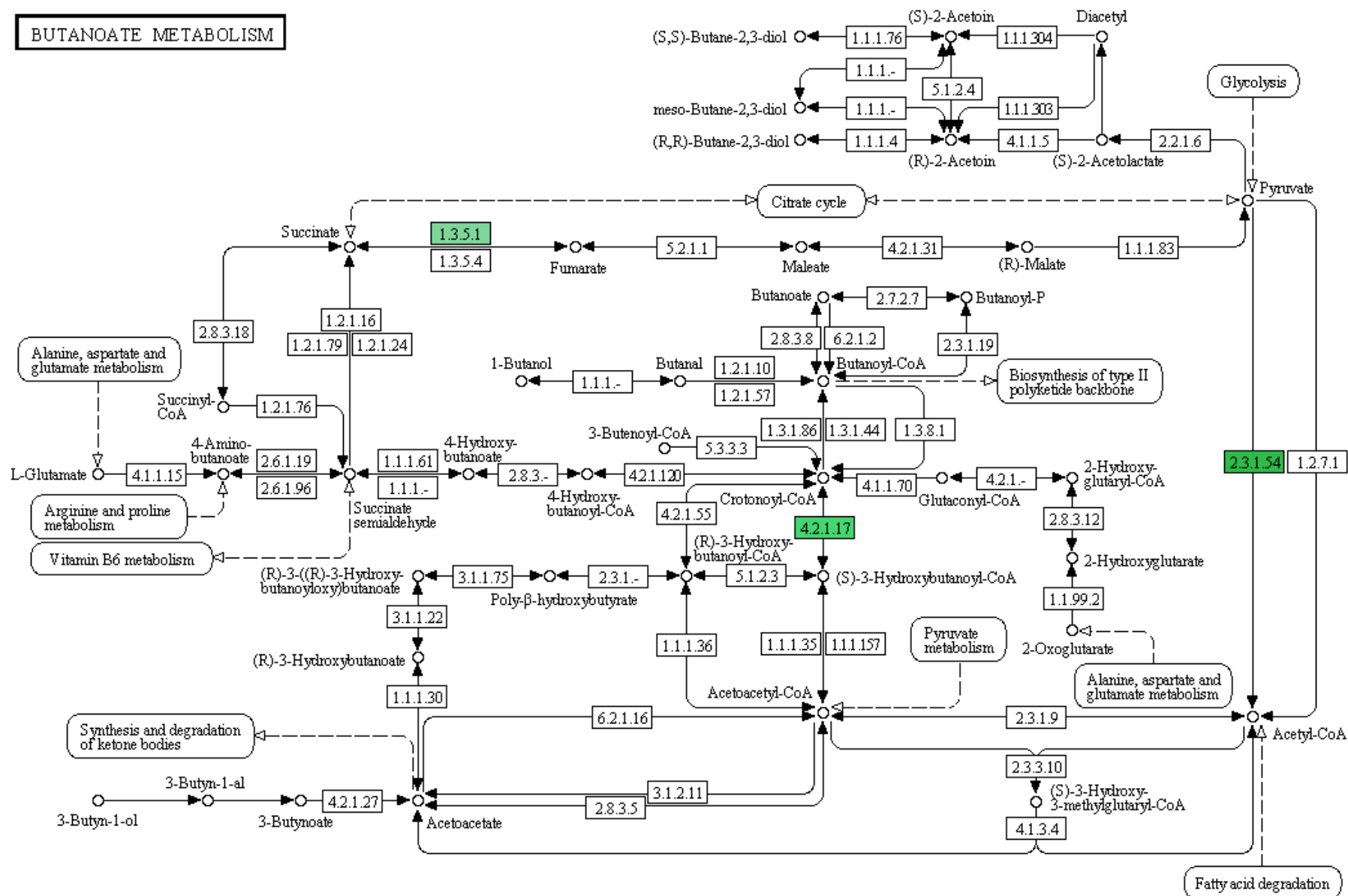
GLYOXYLATE AND DICARBOXYLATE METABOLISM



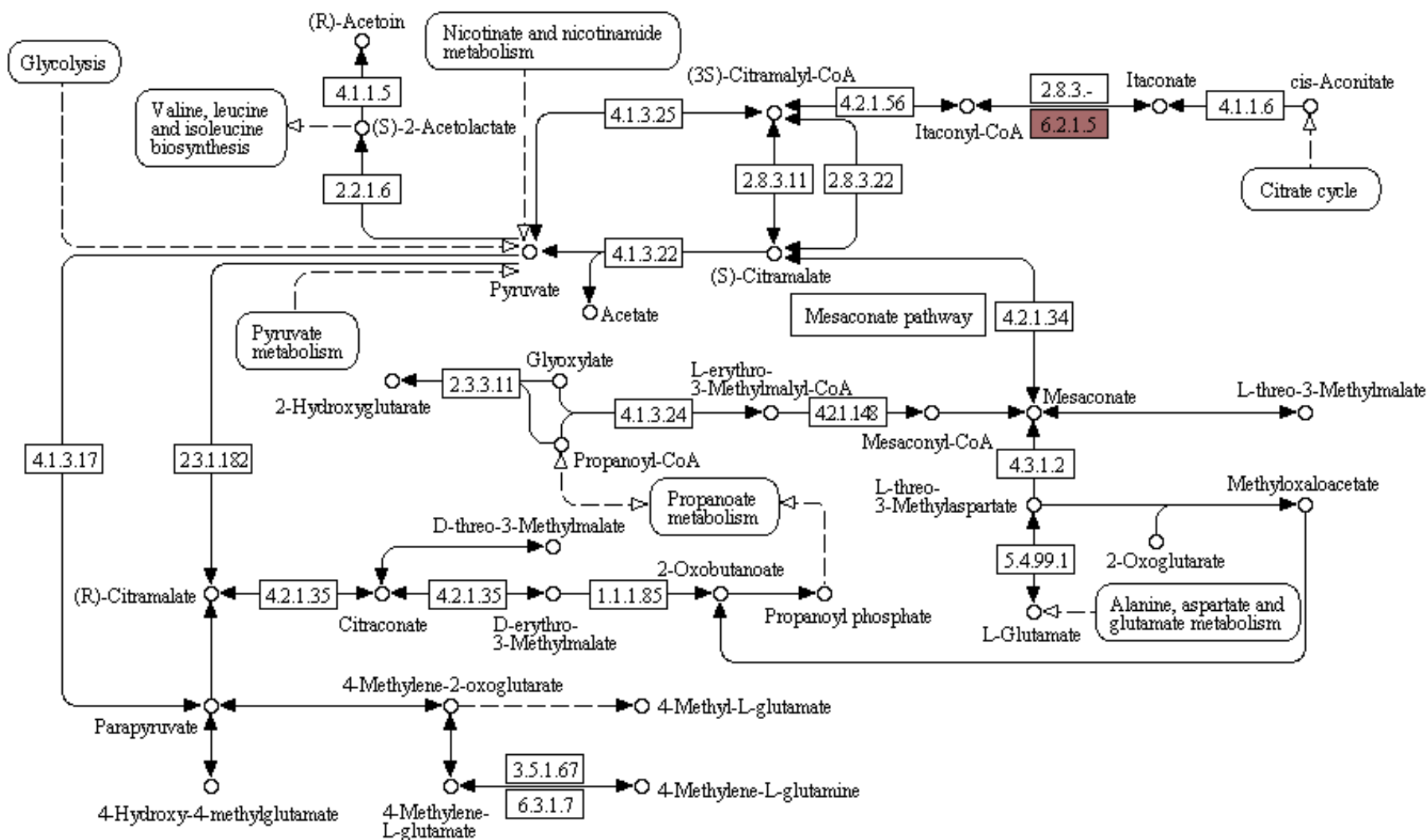
PROPANOATE METABOLISM



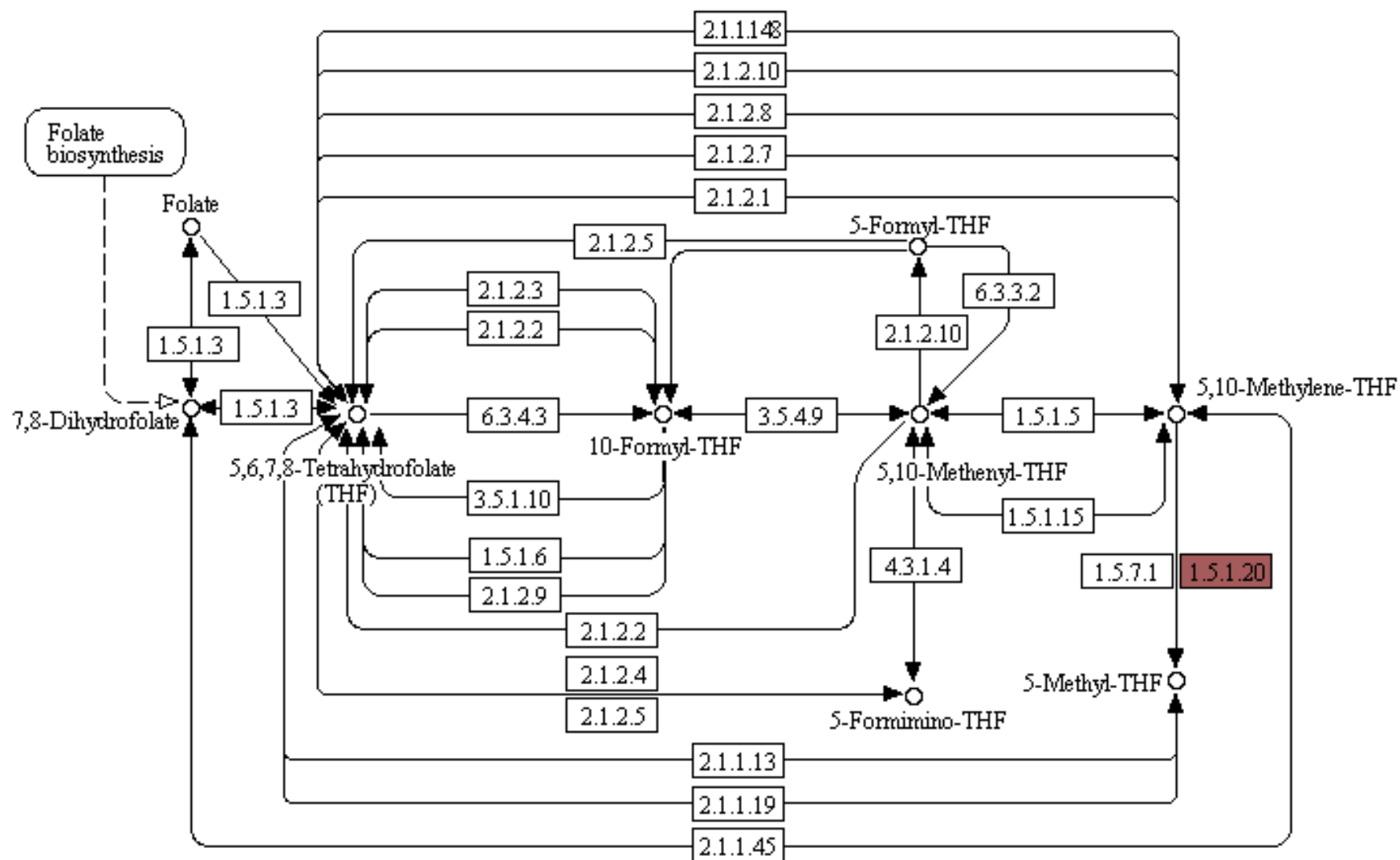
BUTANOATE METABOLISM



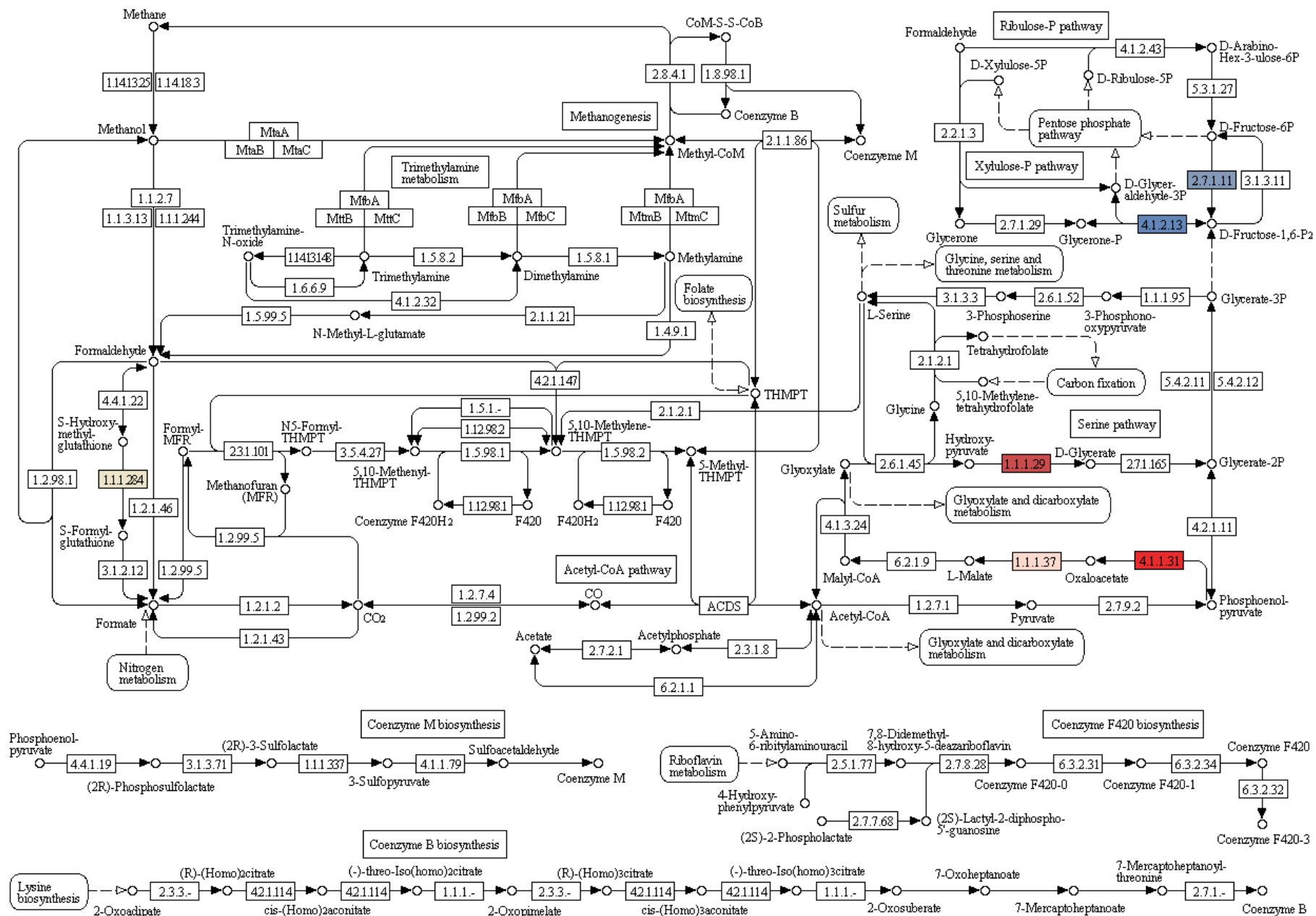
C5-BRANCHED DIBASIC ACID METABOLISM



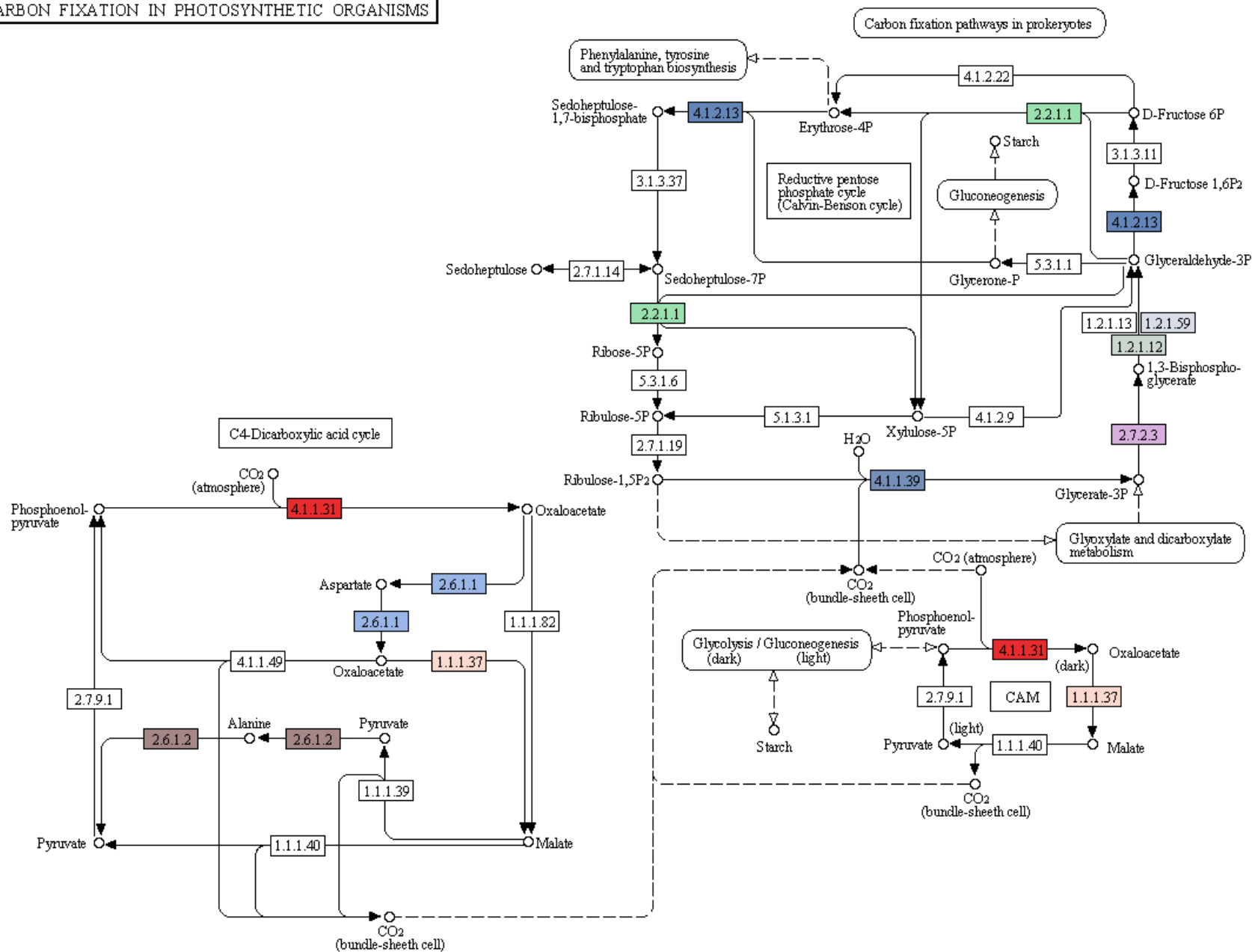
ONE CARBON POOL BY FOLATE



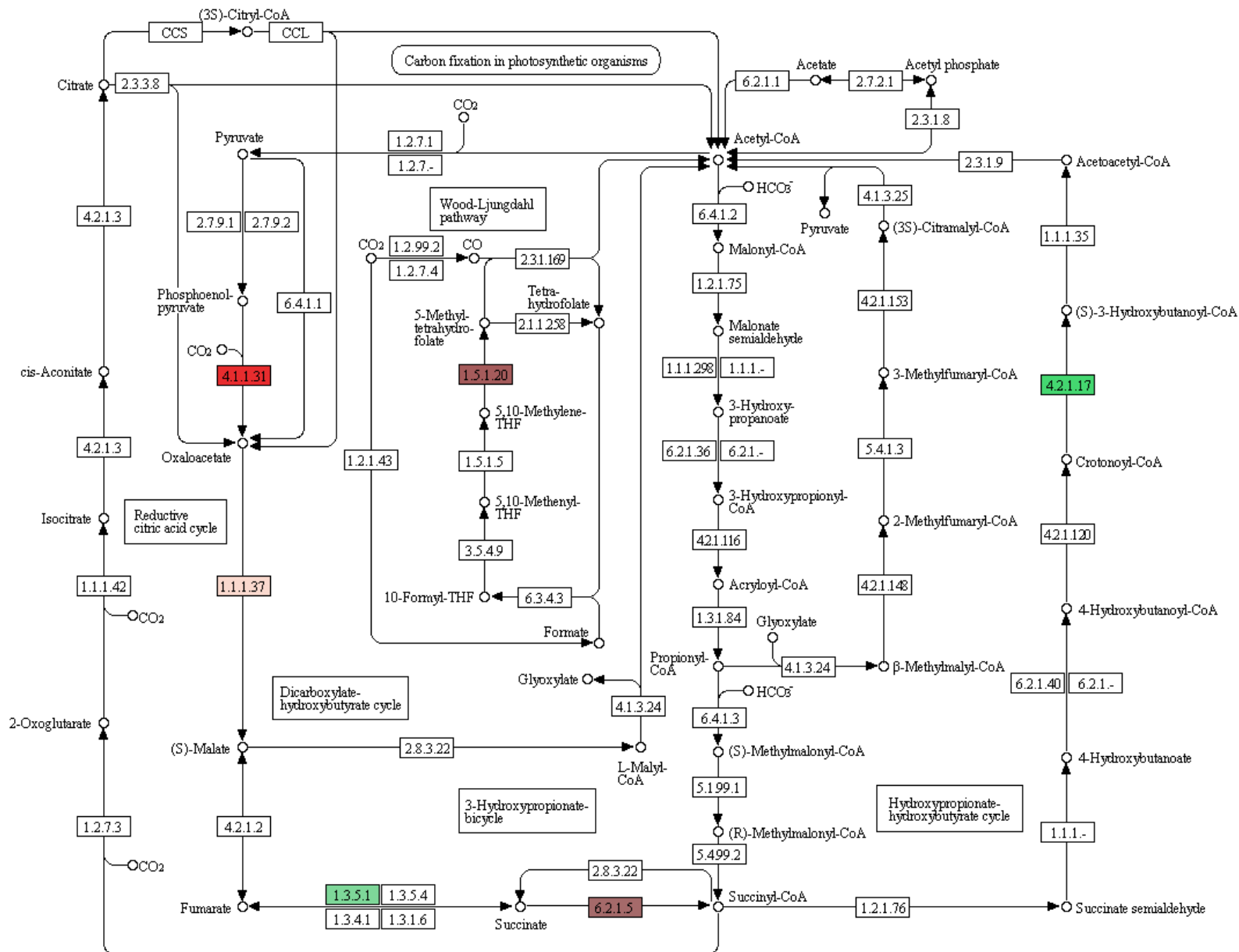
METHANE METABOLISM



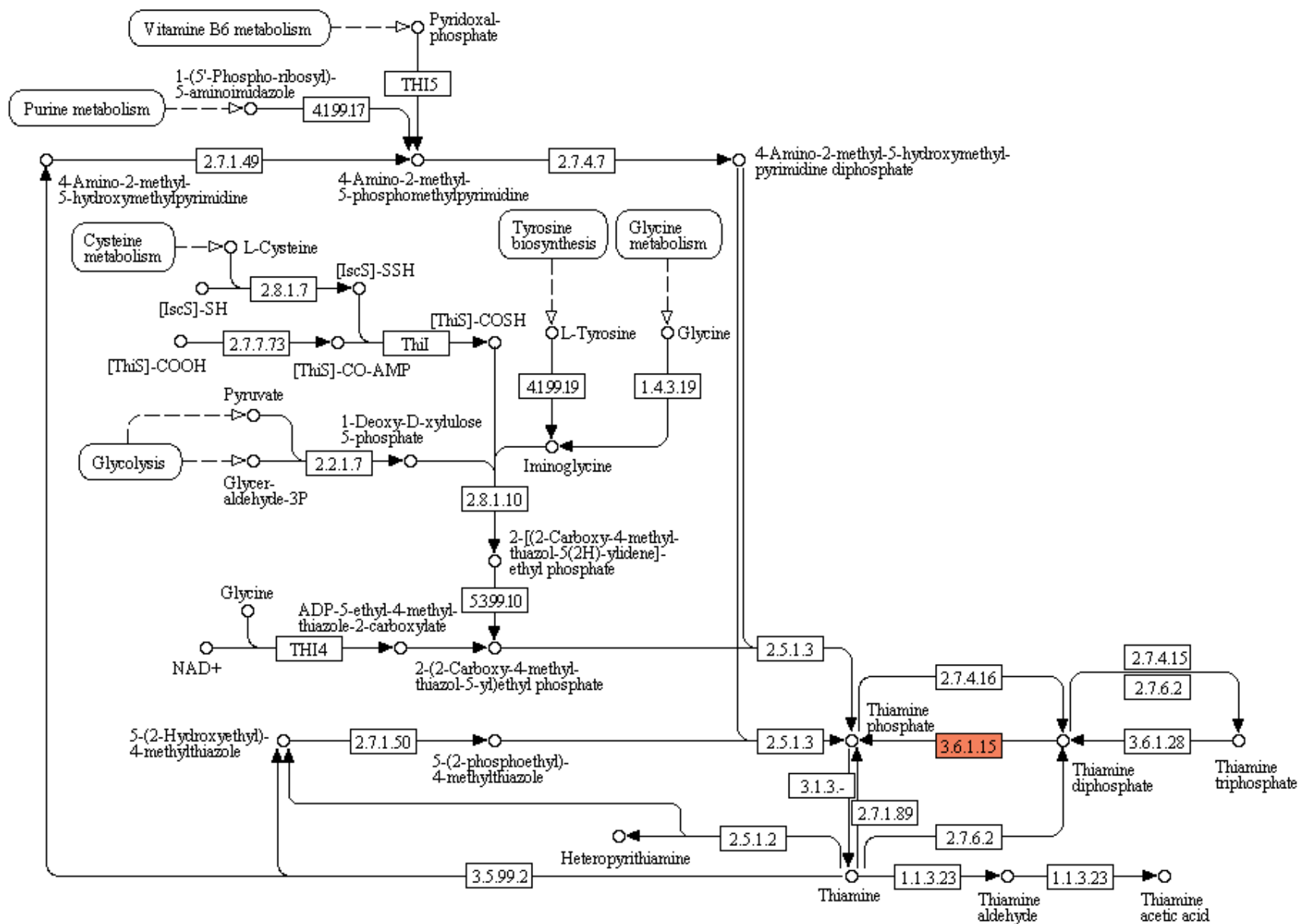
CARBON FIXATION IN PHOTOSYNTHETIC ORGANISMS



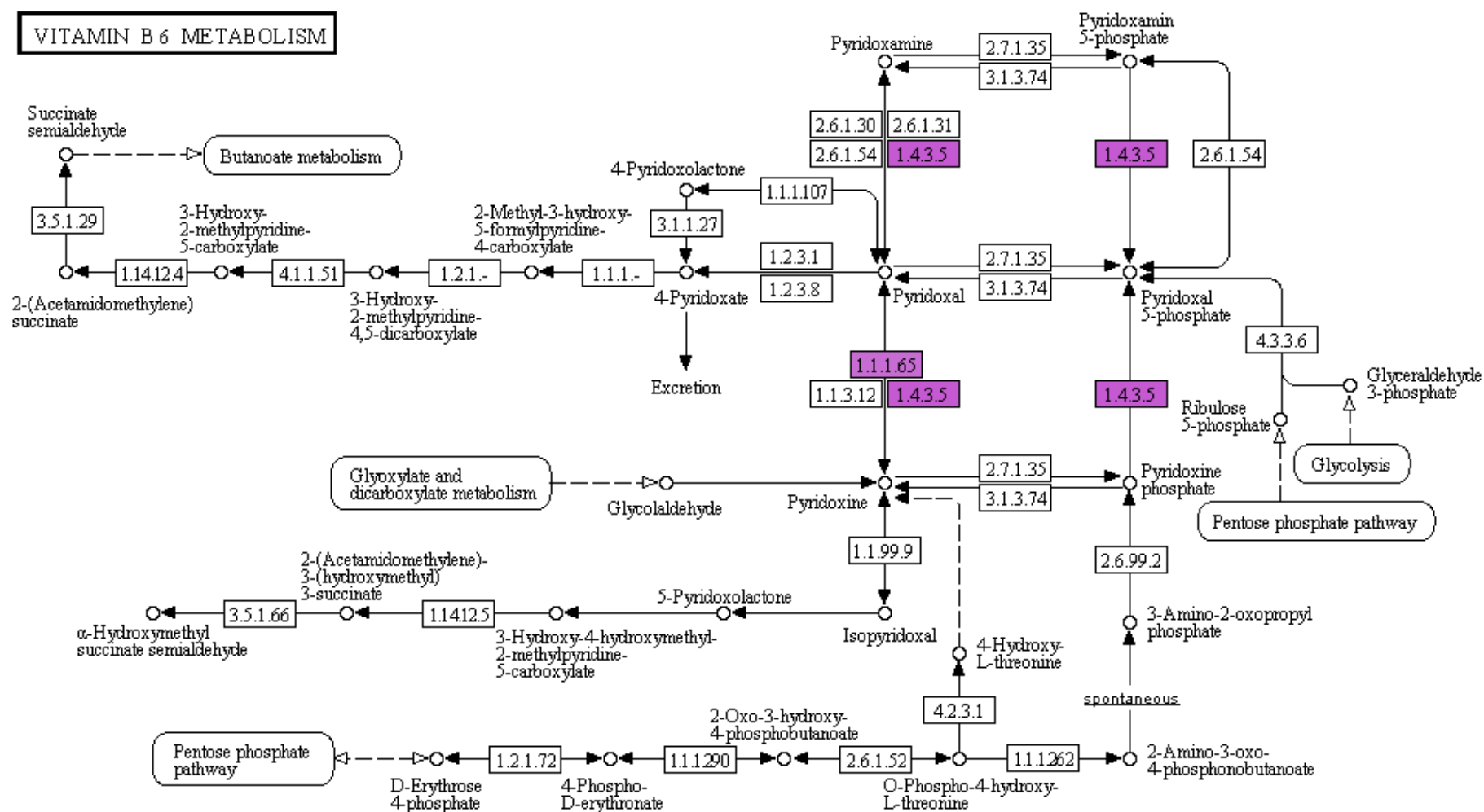
CARBON FIXATION PATHWAYS IN PROKARYOTES



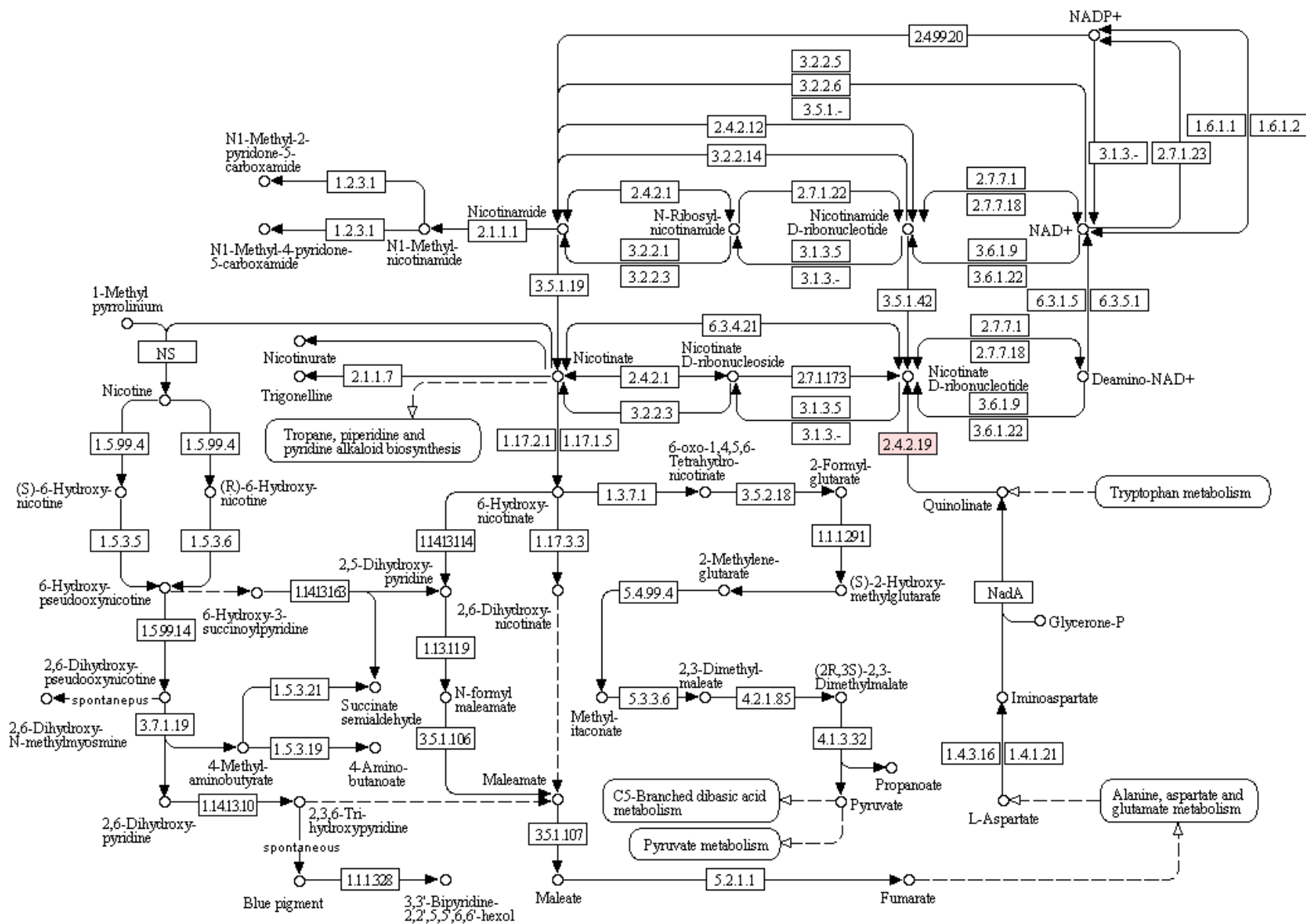
THIAMINE METABOLISM



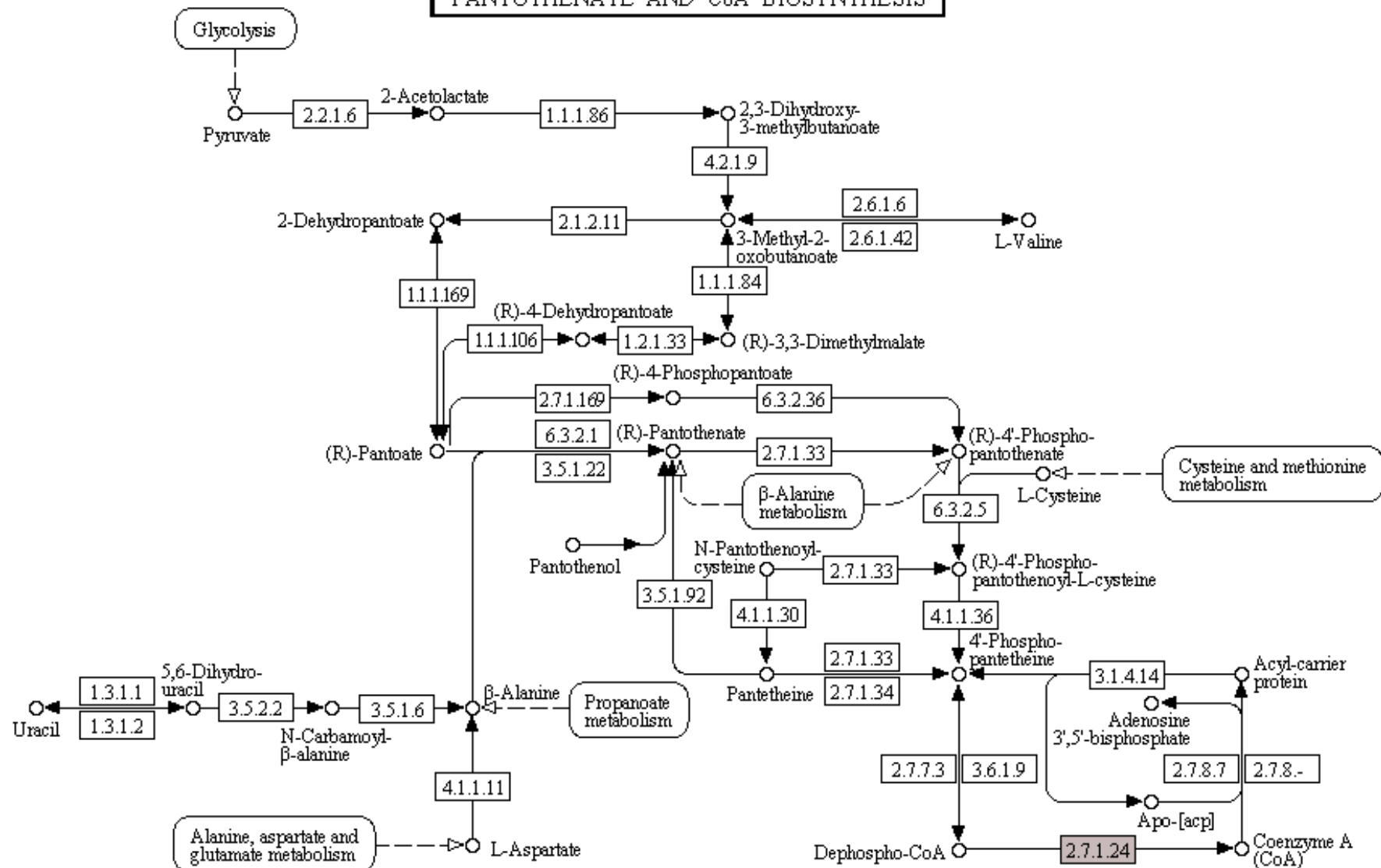
VITAMIN B 6 METABOLISM



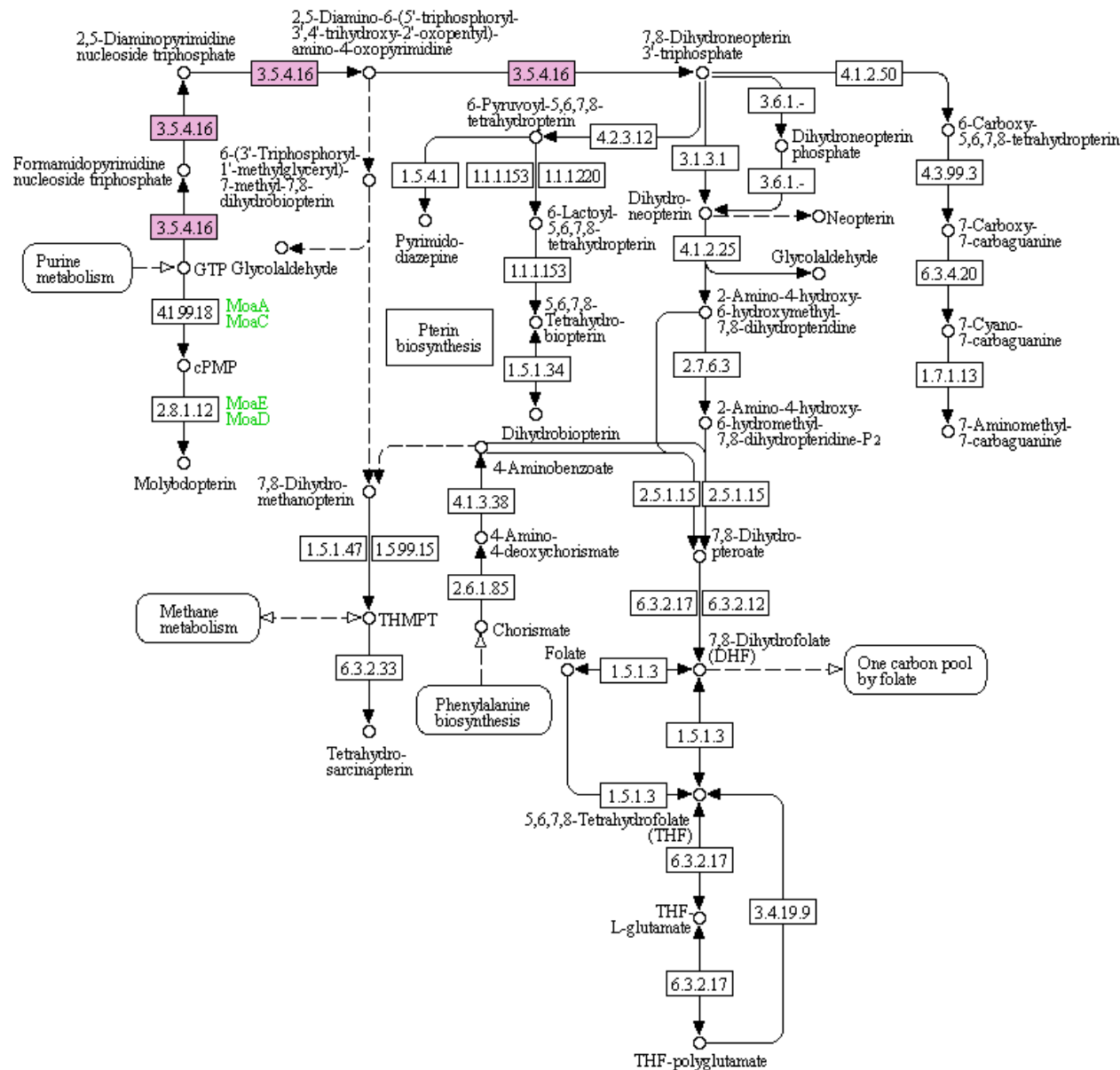
NICOTINATE AND NICOTINAMIDE METABOLISM



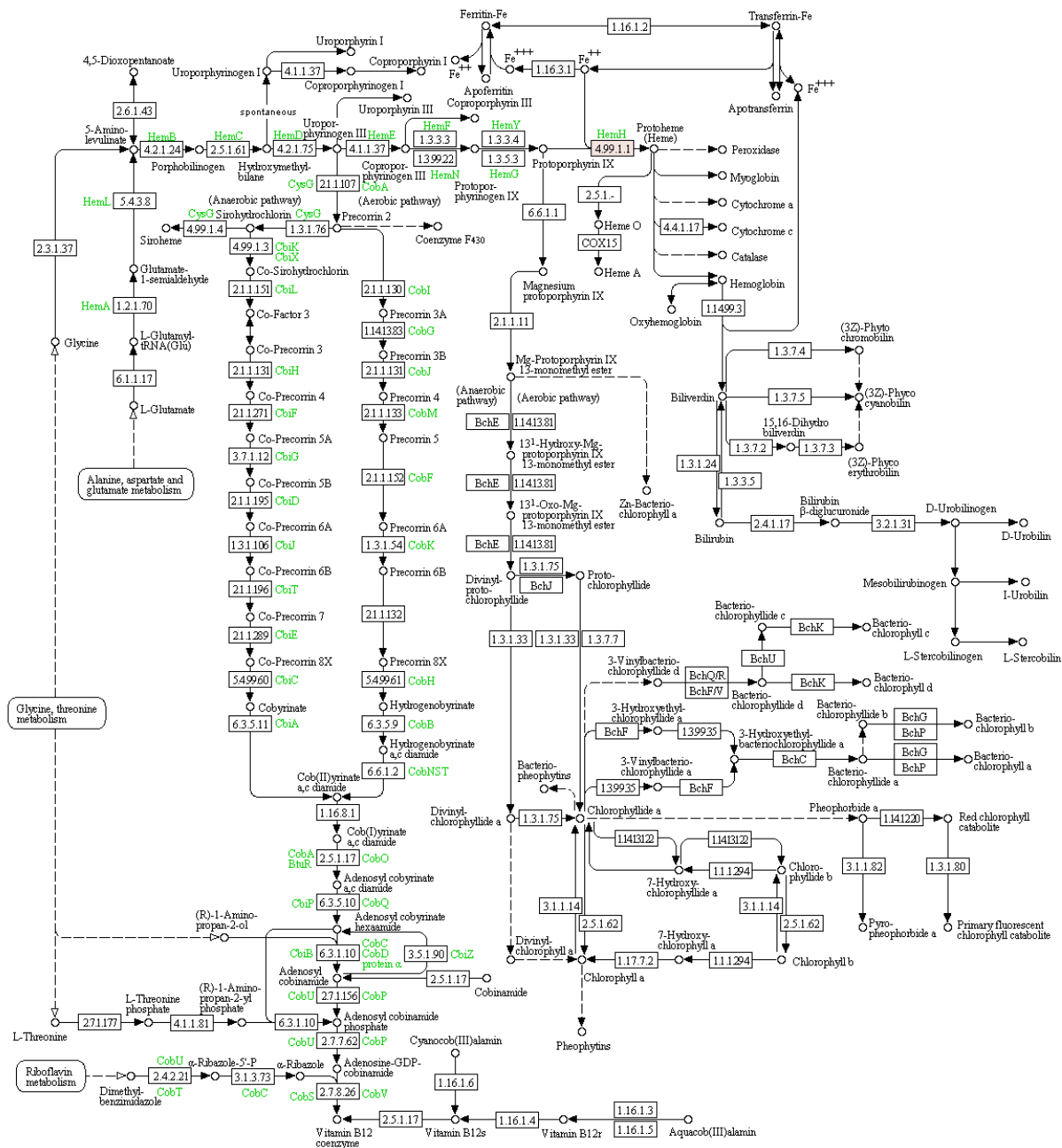
PANTOTHENATE AND CoA BIOSYNTHESIS



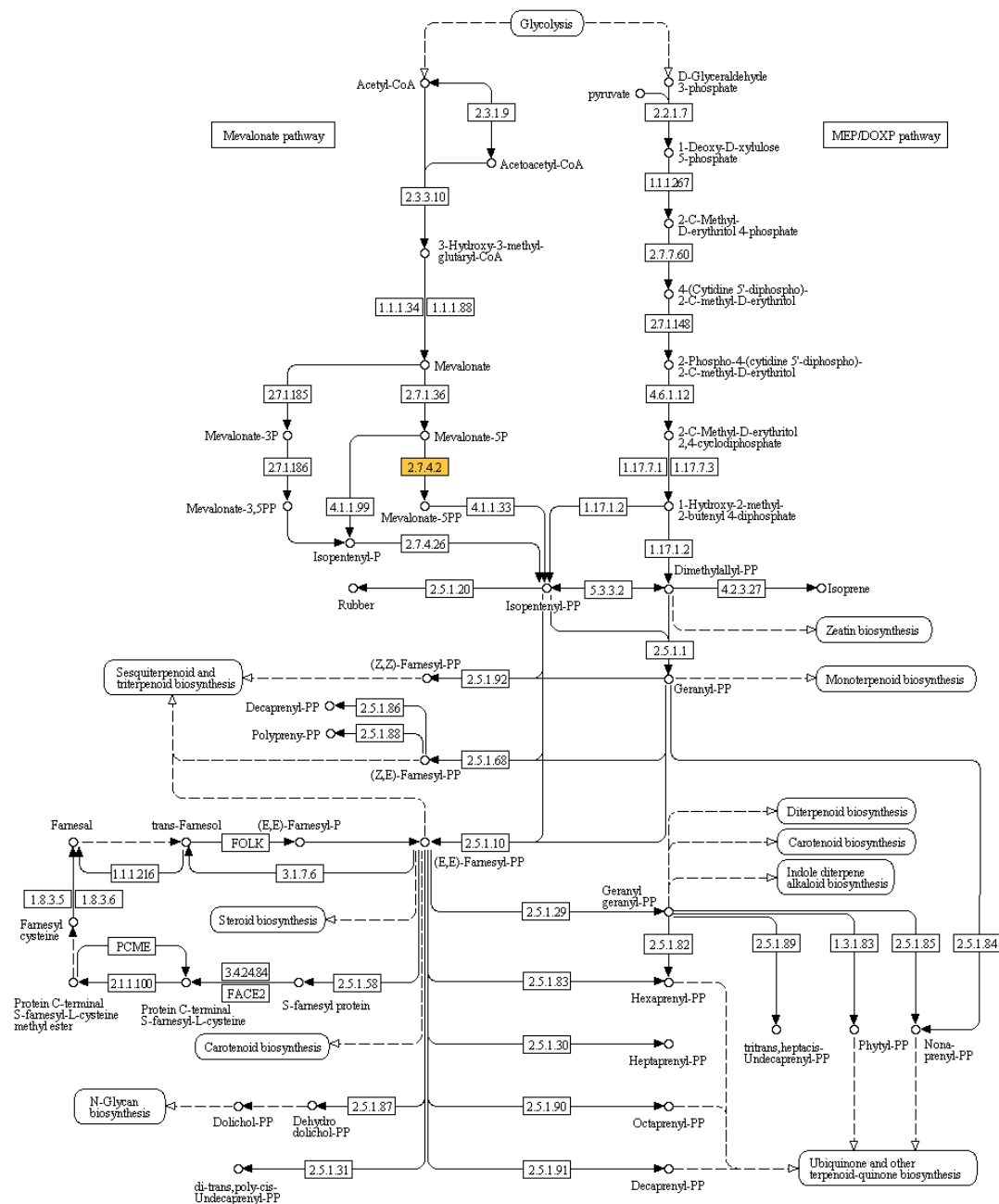
FOLATE BIOSYNTHESIS



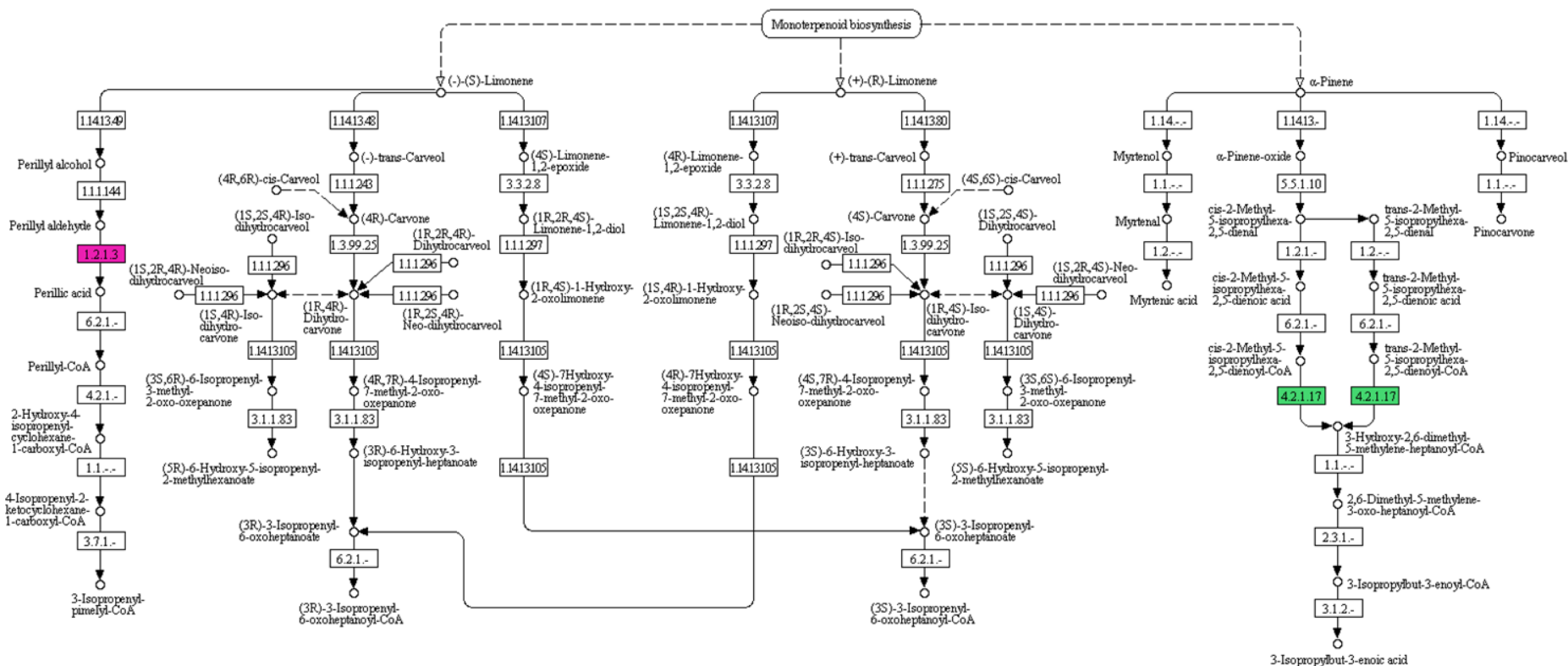
PORPHYRIN AND CHLOROPHYLL METABOLISM



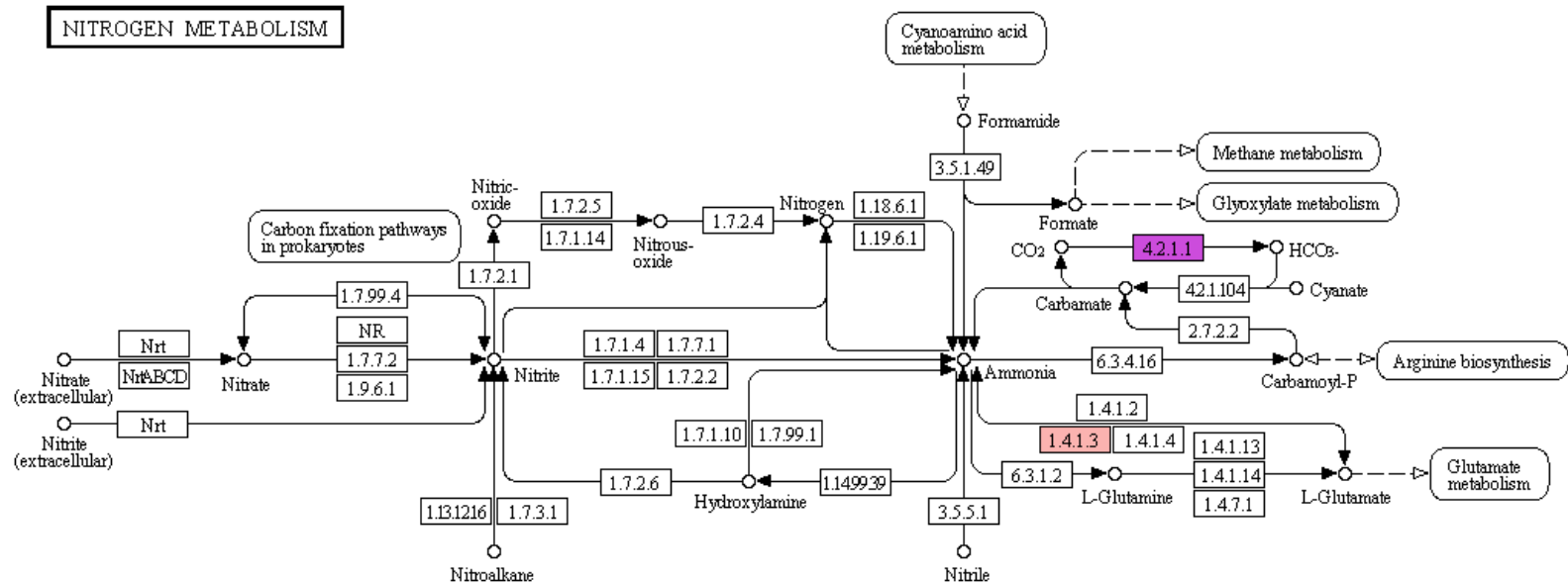
TERPENOID BACKBONE BIOSYNTHESIS



LIMONENE AND PINENE DEGRADATION

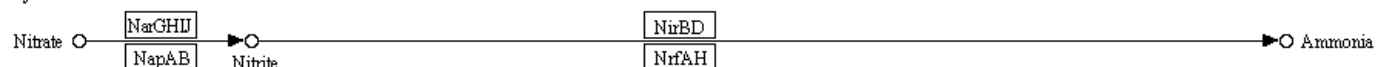


NITROGEN METABOLISM



Oxidation state +5 +3 +2 +1 0 -1 -2 -3

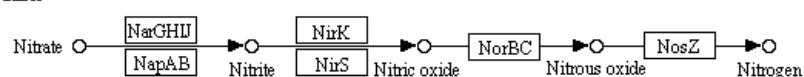
Disimilatory nitrate reduction



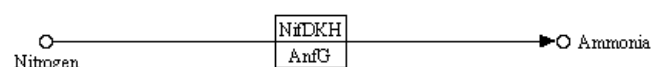
Assimilatory nitrate reduction



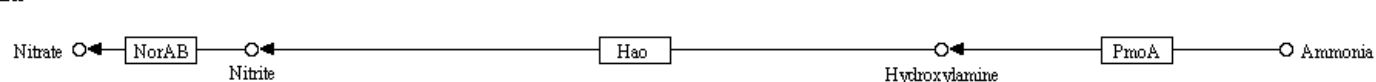
Denitrification



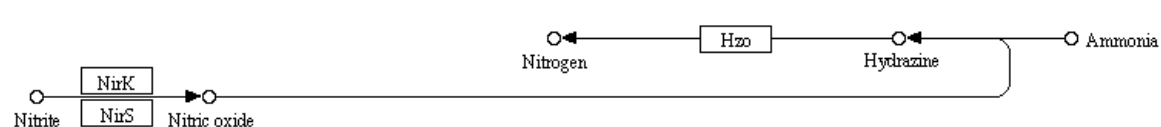
Nitrogen fixation



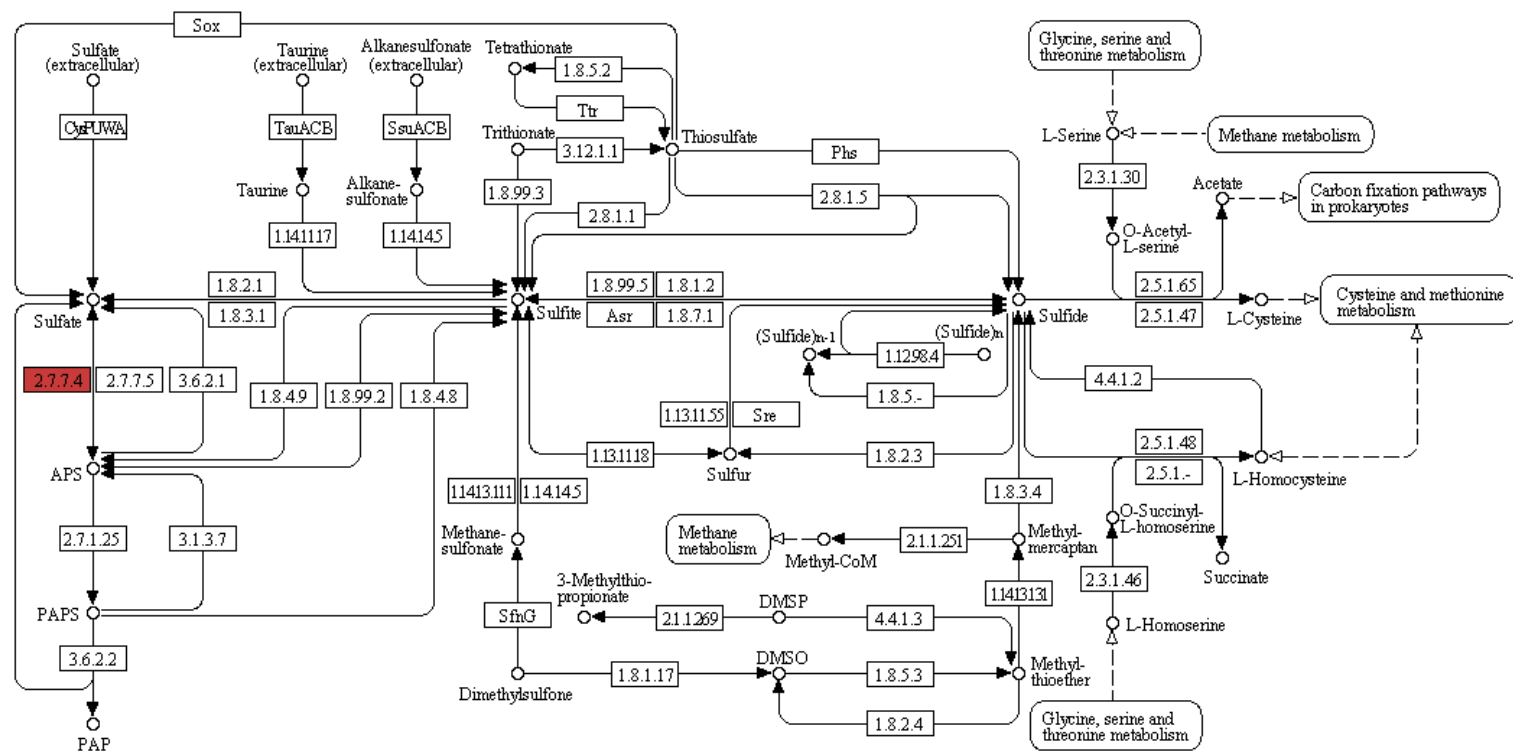
Nitrification



Anammox



SULFUR METABOLISM



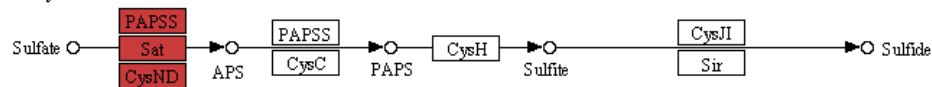
Oxidation state +6

+4

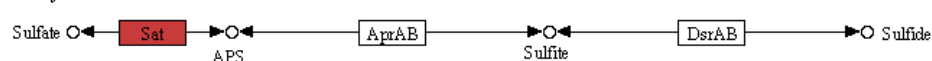
+2

-2

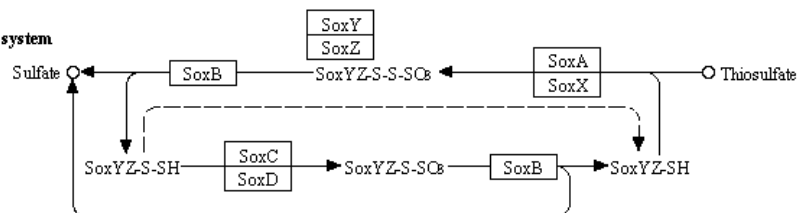
Assimilatory sulfate reduction



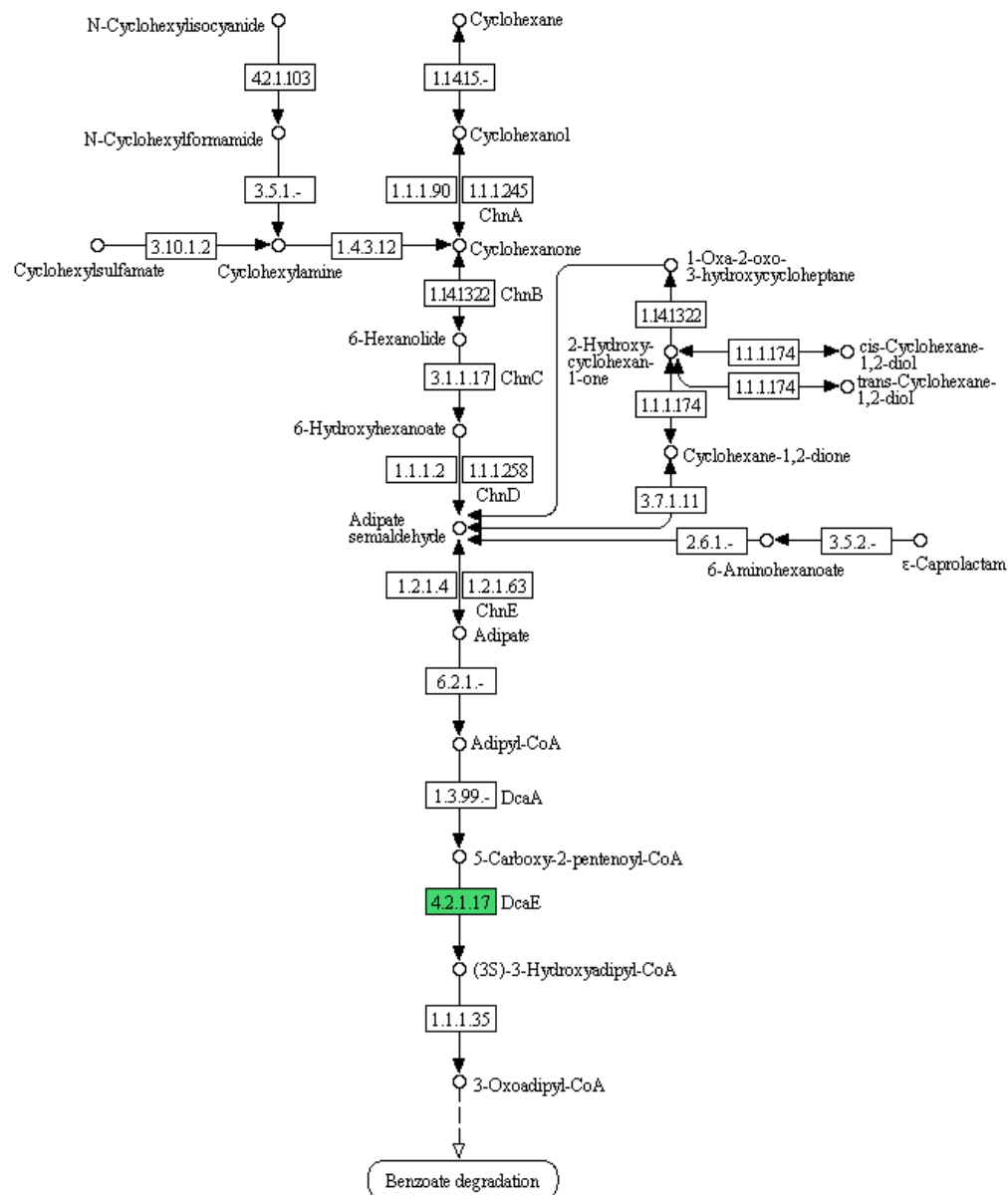
Dissimilatory sulfate reduction and oxidation



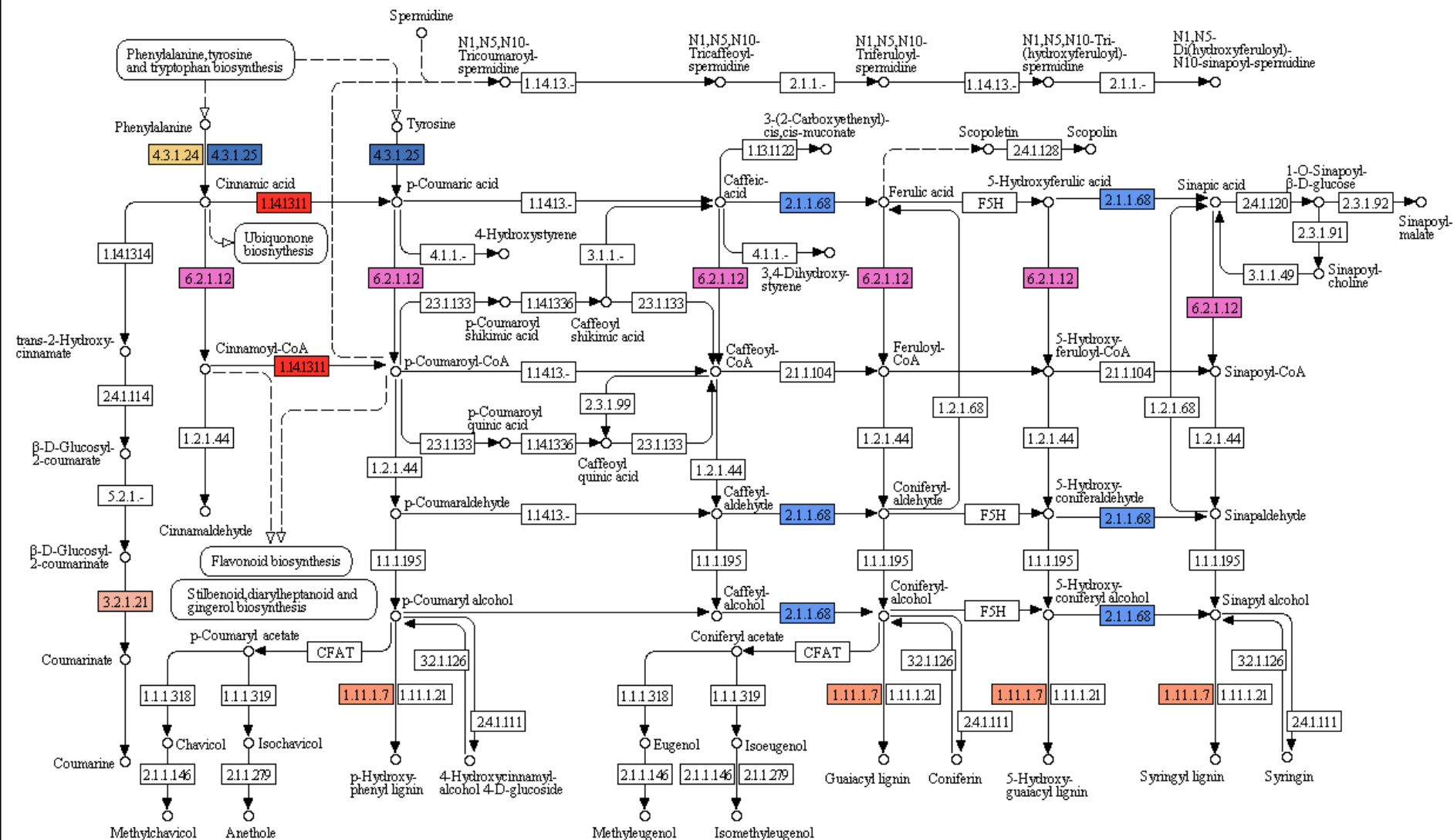
SOX system



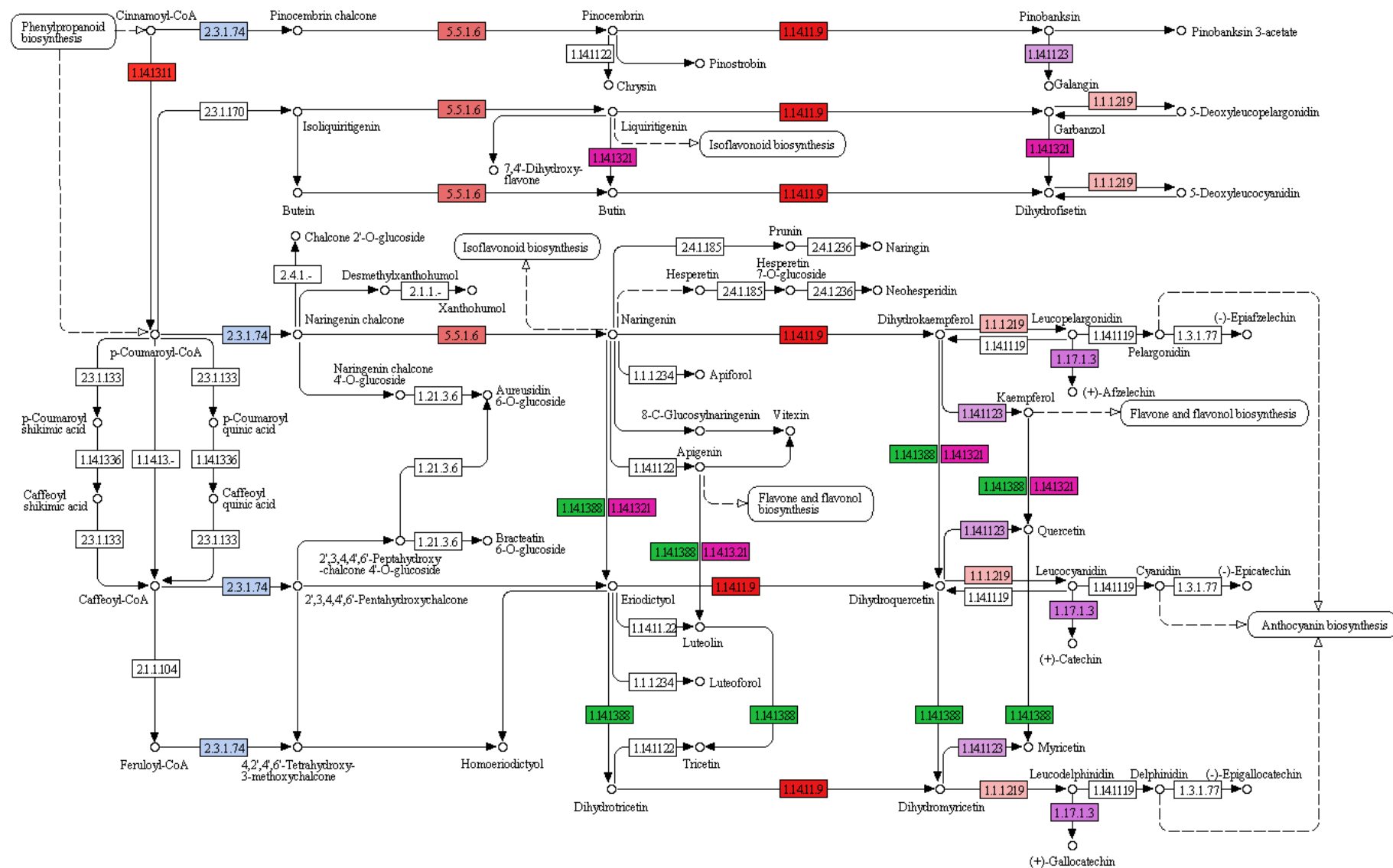
CAPROLACTAM DEGRADATION



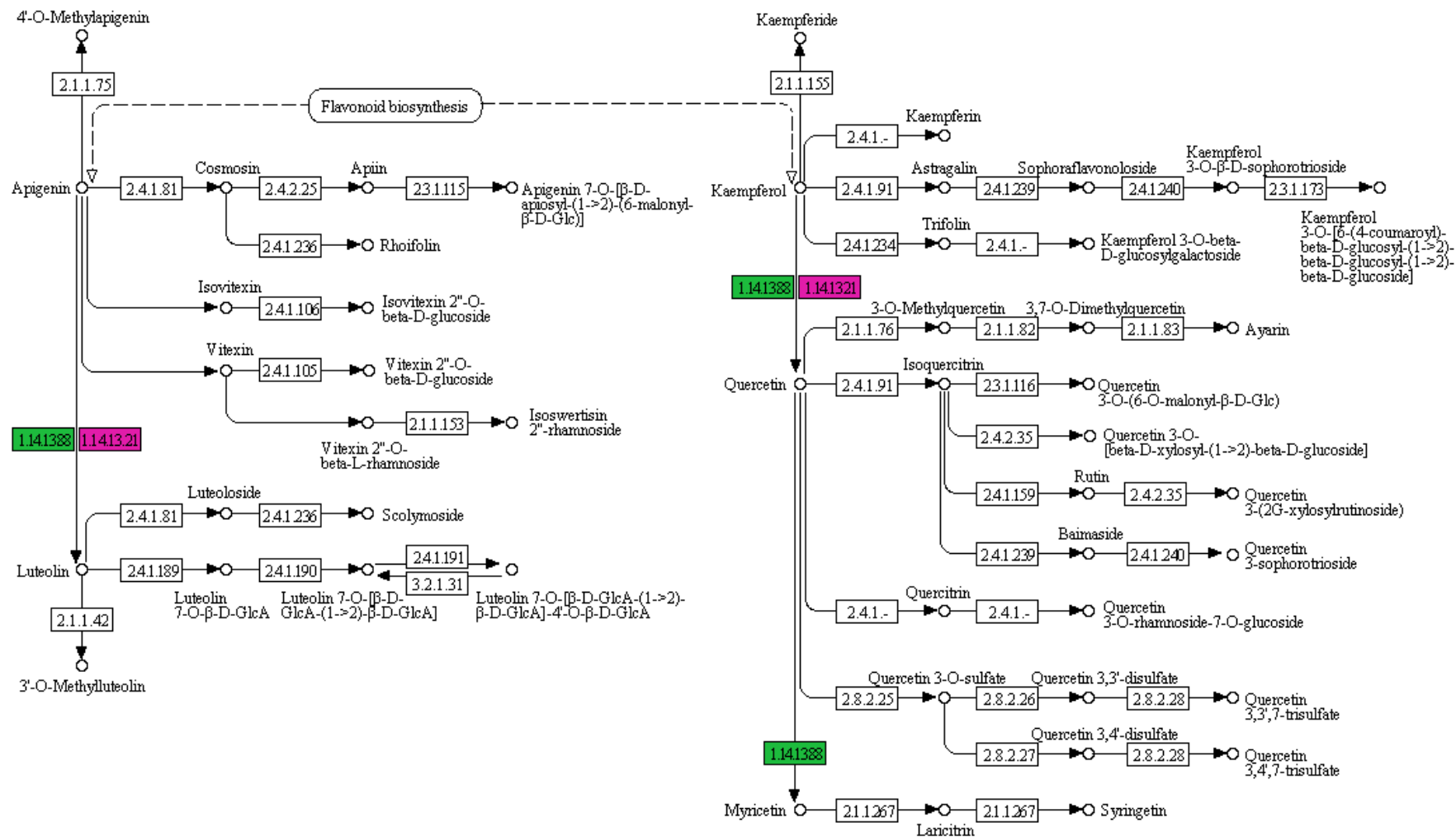
PHENYLPROPANOID BIOSYNTHESIS



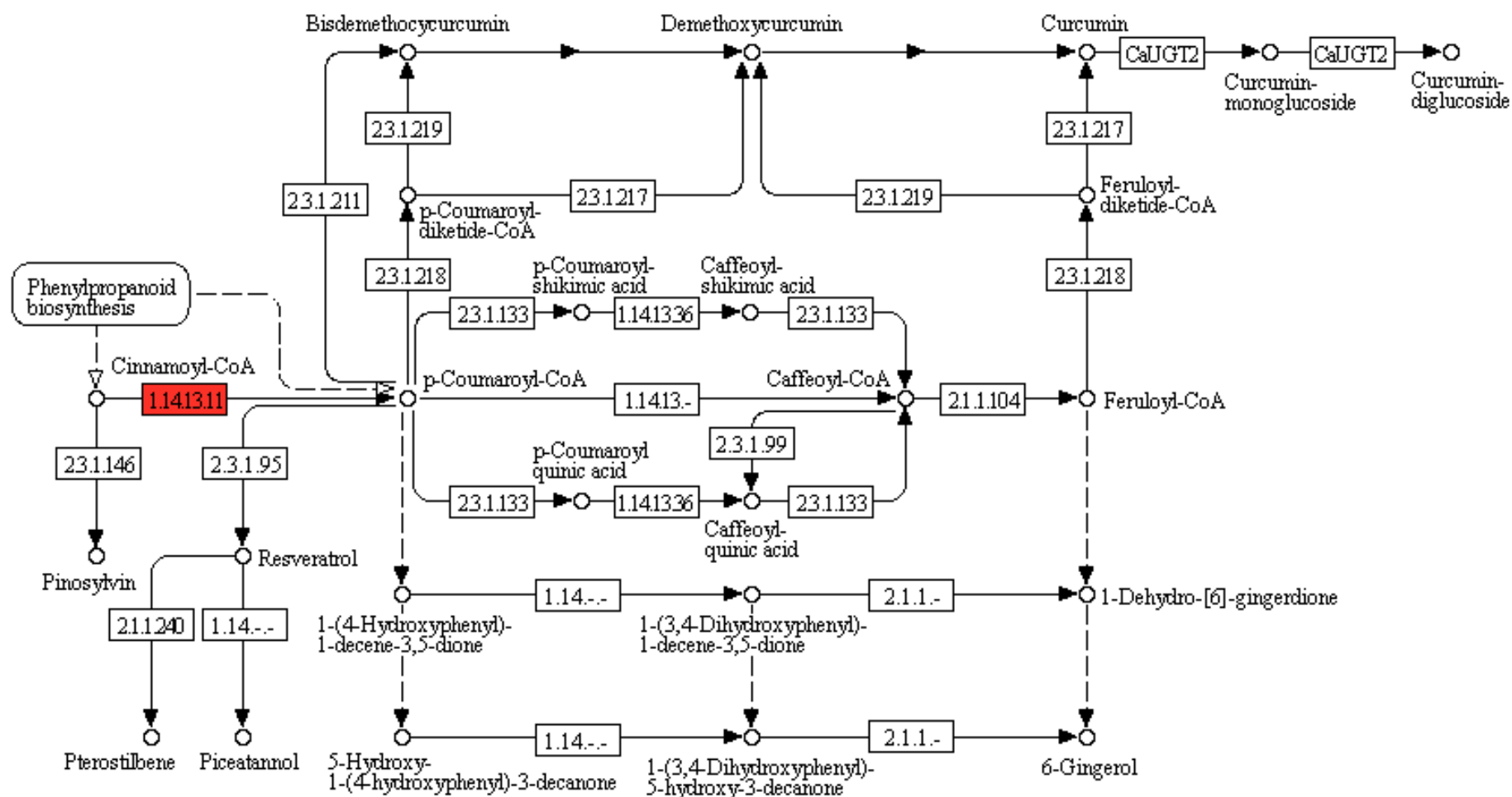
FLAVONOID BIOSYNTHESIS



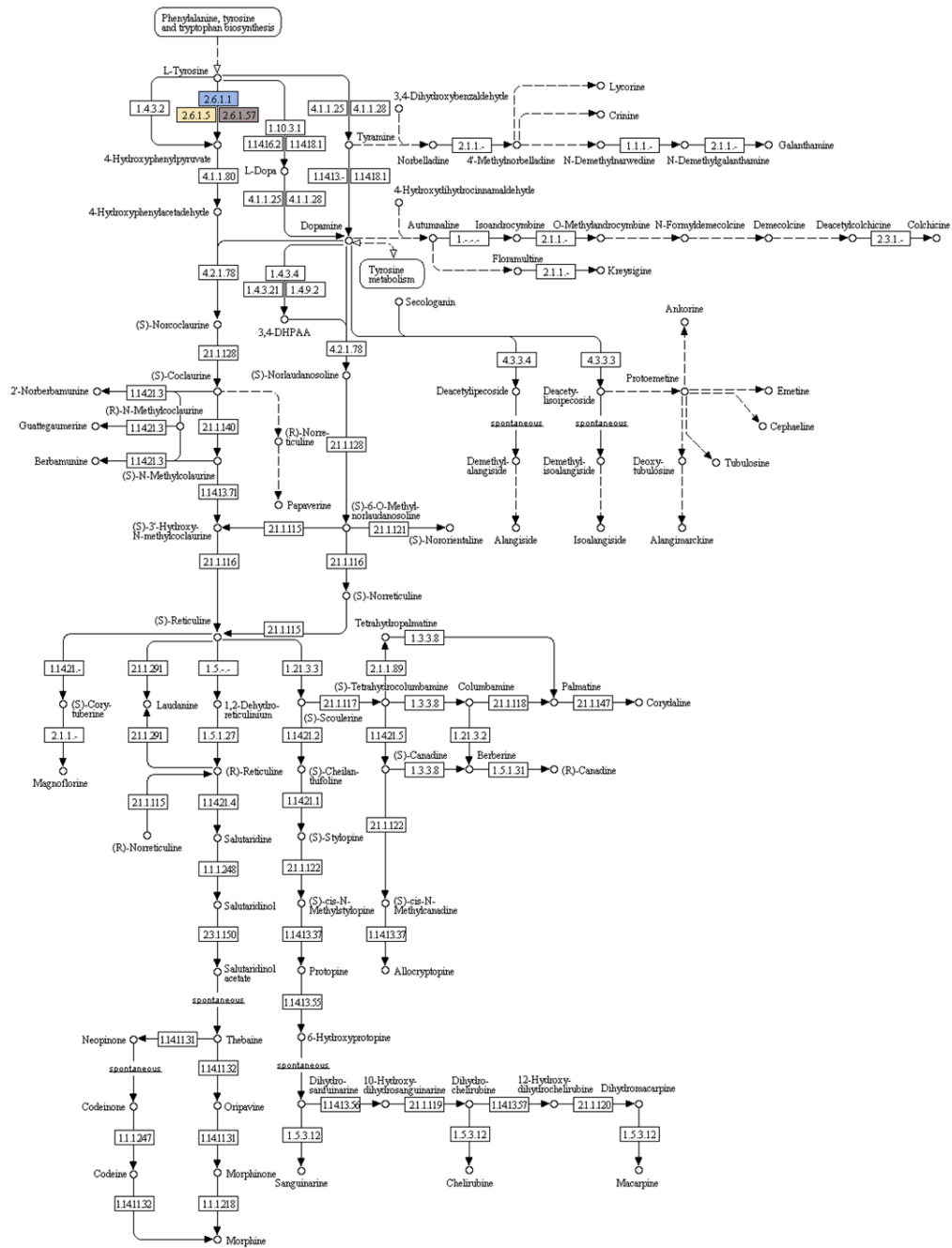
FLAVONE AND FLAVONOL BIOSYNTHESIS



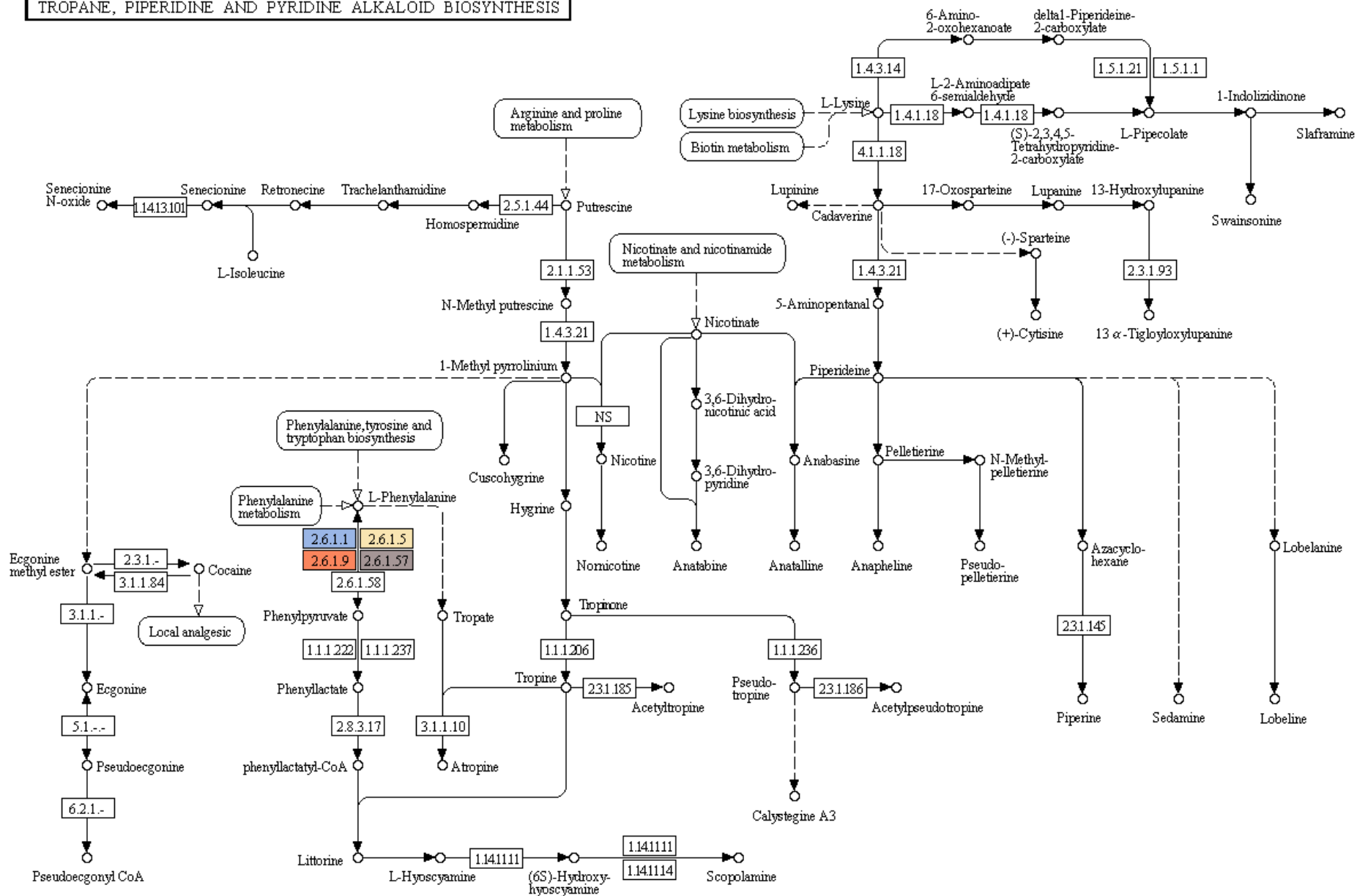
STILBENOID, DIARYLHEPTANOID AND GINGEROL BIOSYNTHESIS



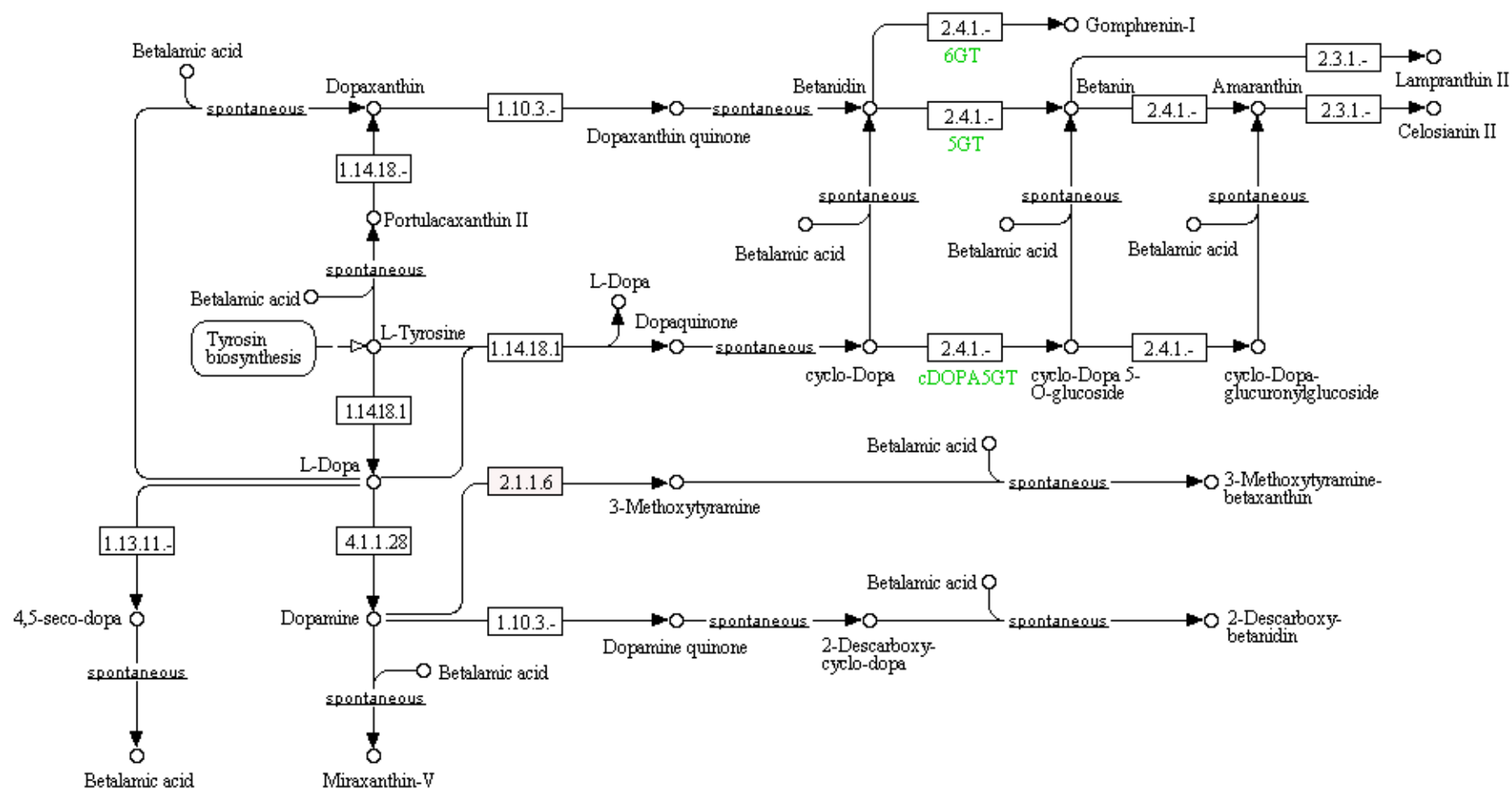
ISOQUINOLINE ALKALOID BIOSYNTHESIS



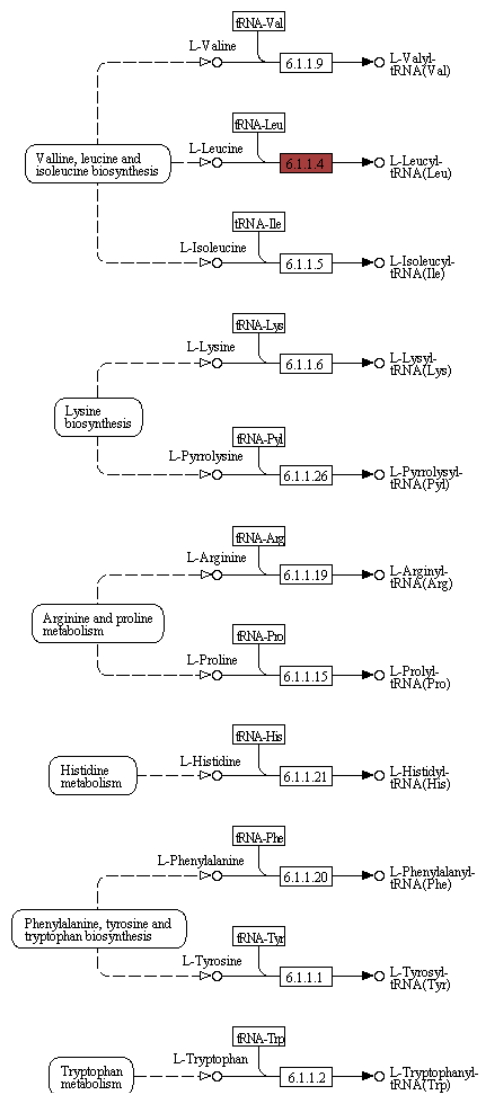
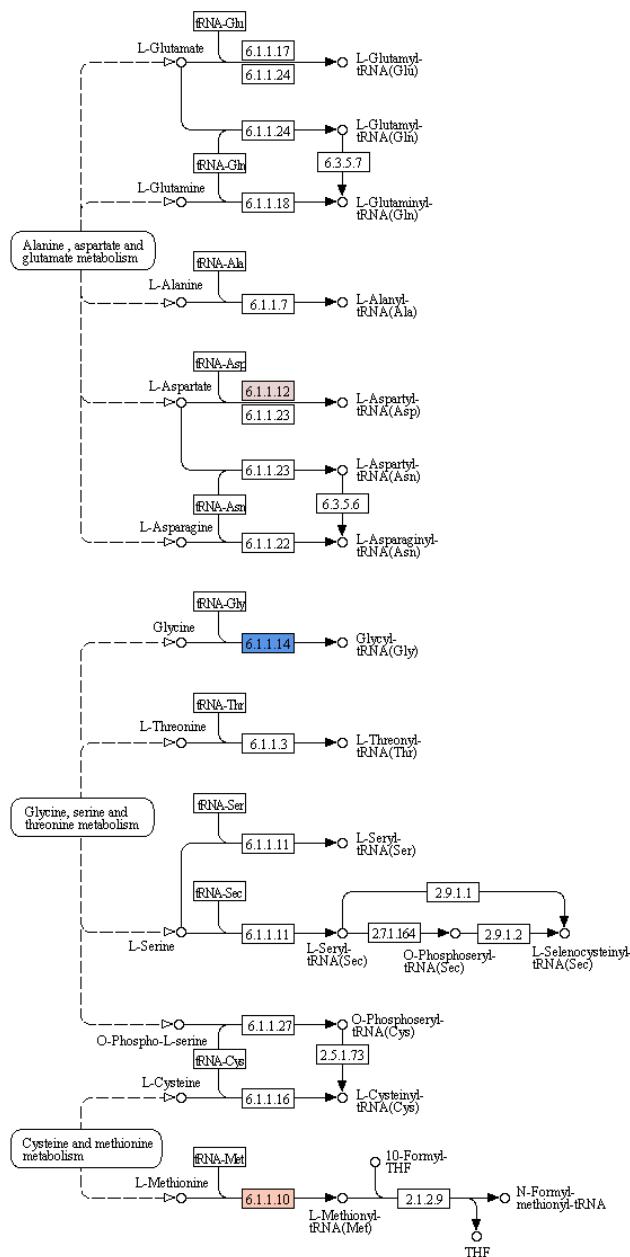
TROPANE, PIPERIDINE AND PYRIDINE ALKALOID BIOSYNTHESIS

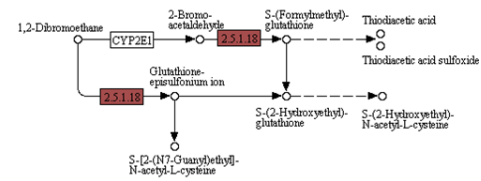
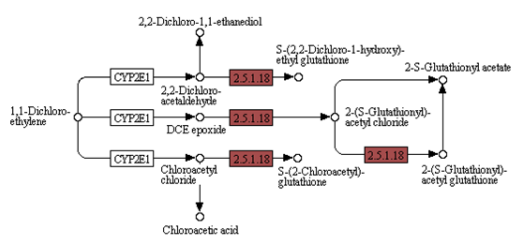
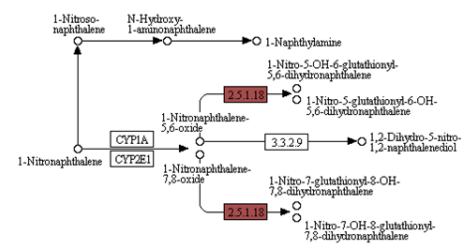
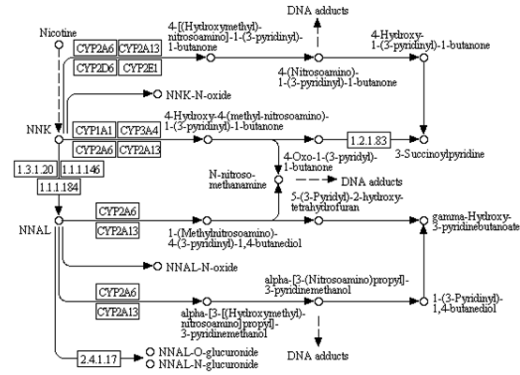
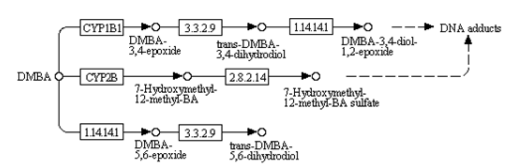
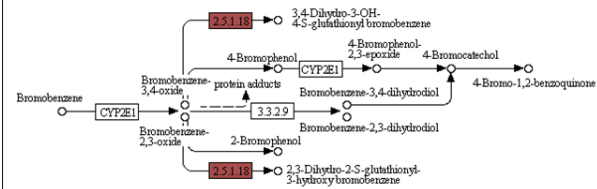
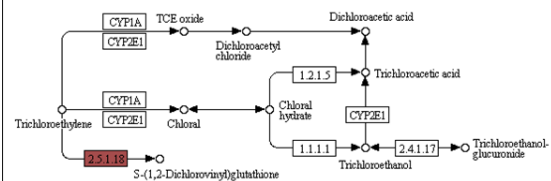
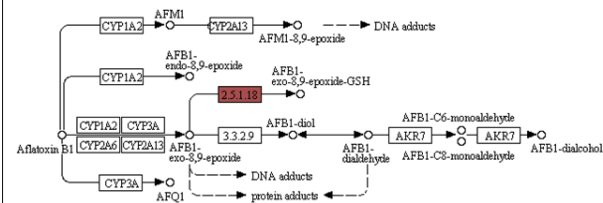
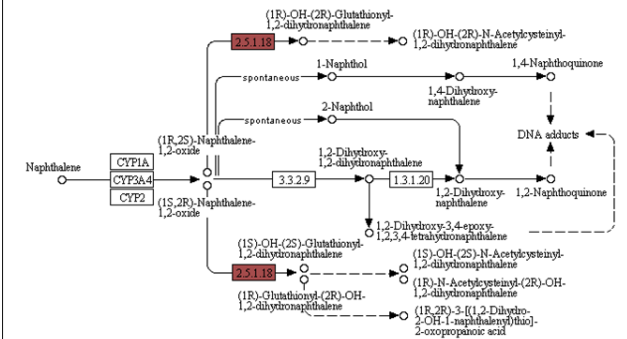


BETALAIN BIOSYNTHESIS



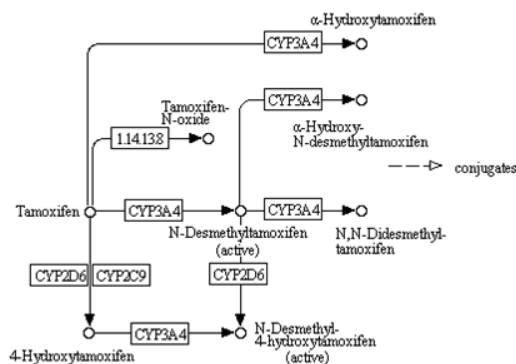
AMINOACYL-tRNA BIOSYNTHESIS



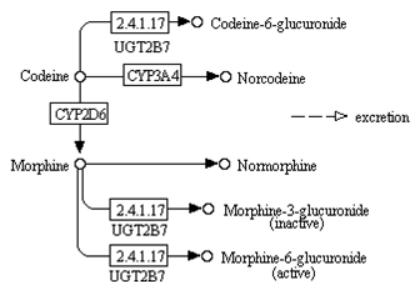
[illegible]

Cyclophosphamide & Ifosfamide

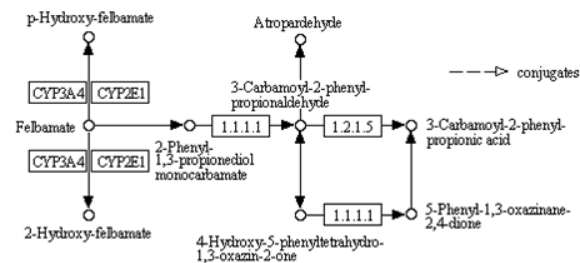
Tamoxifen



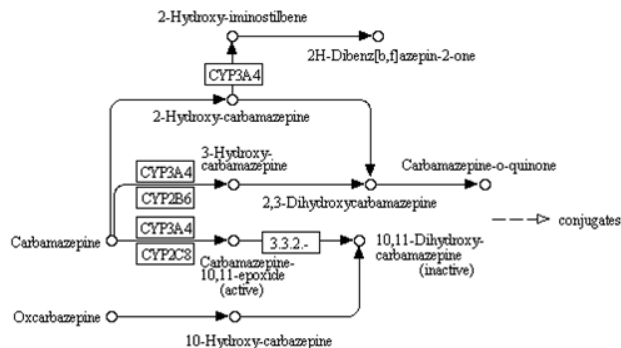
Codeine & Morphine



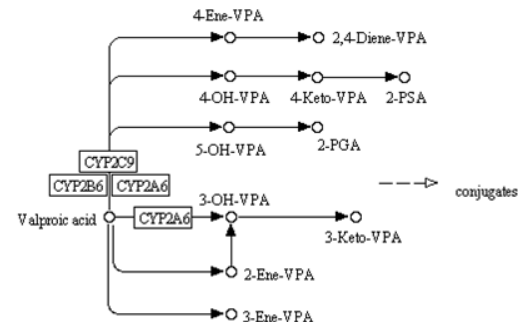
Felbamate



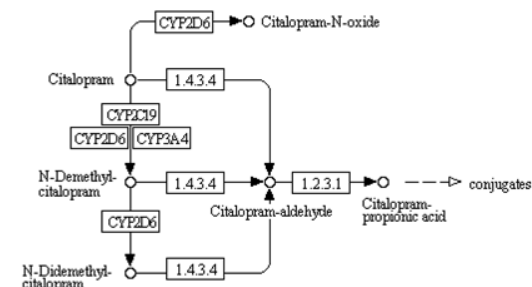
Carbamazepine & Oxcarbazepine



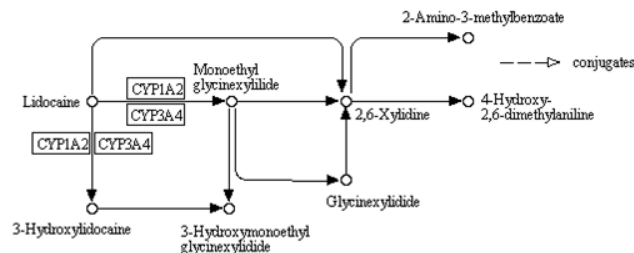
Valproic acid



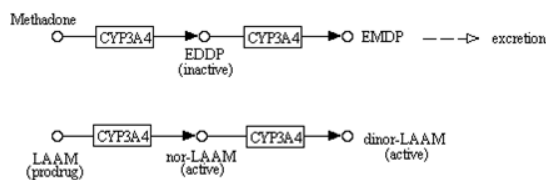
Citalopram



Lidocaine

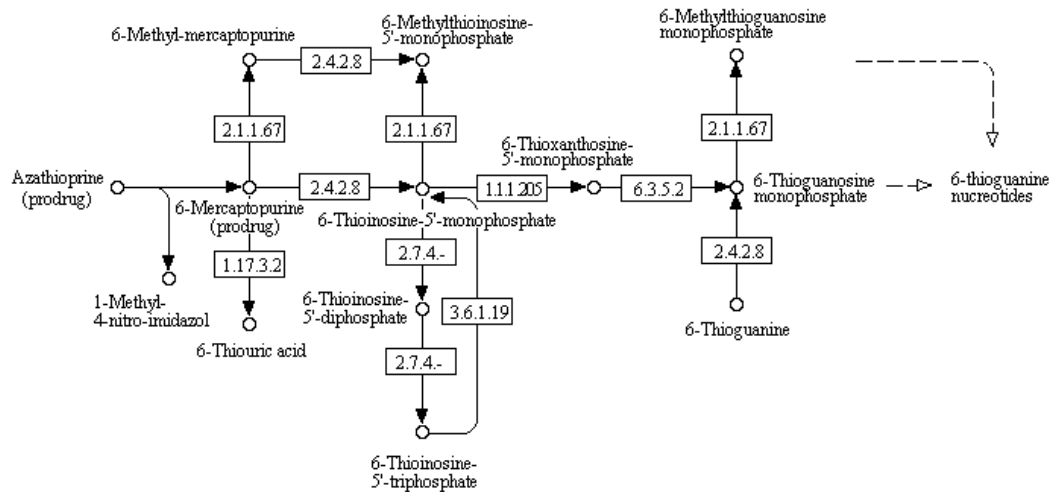


Methadone

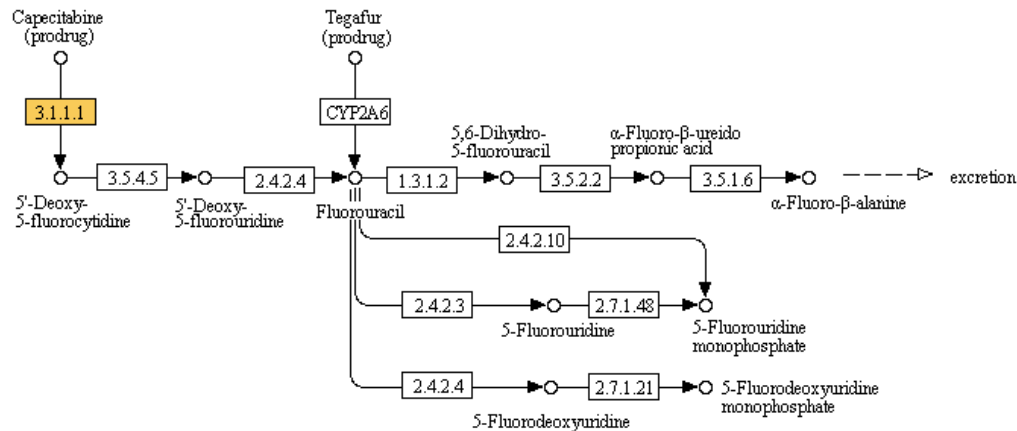


DRUG METABOLISM - OTHER ENZYMES

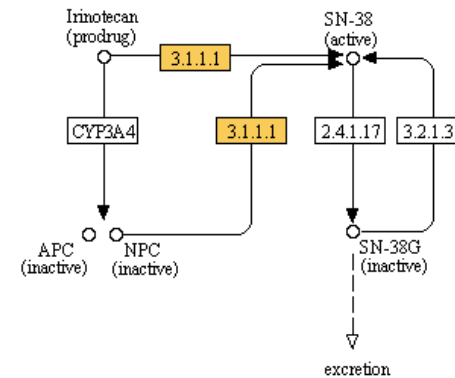
Azathioprine & 6-Mercaptopurine



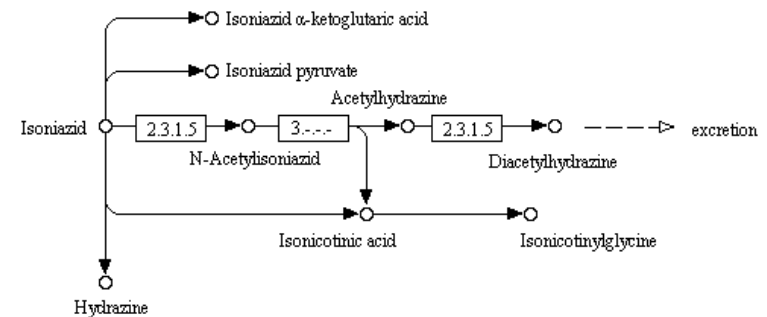
Fluorouracil



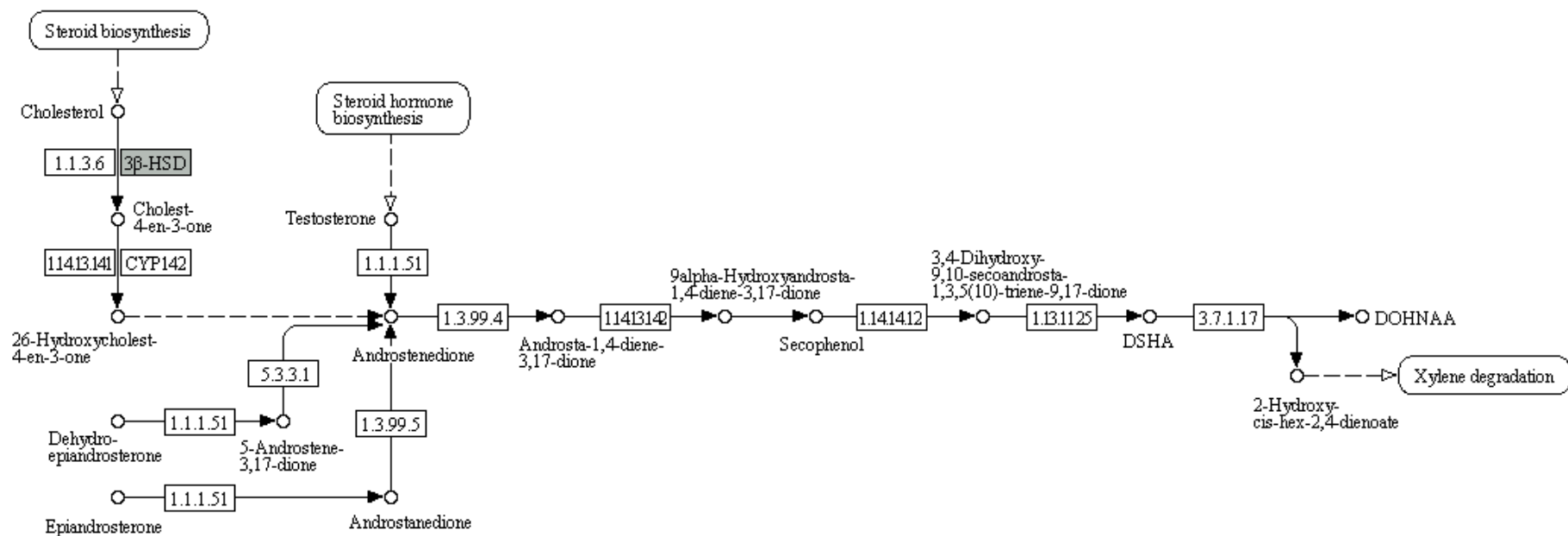
Irinotecan



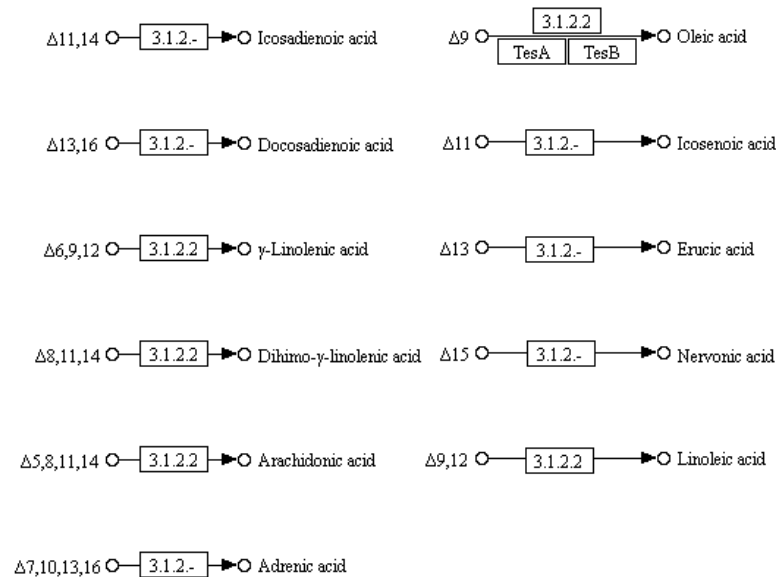
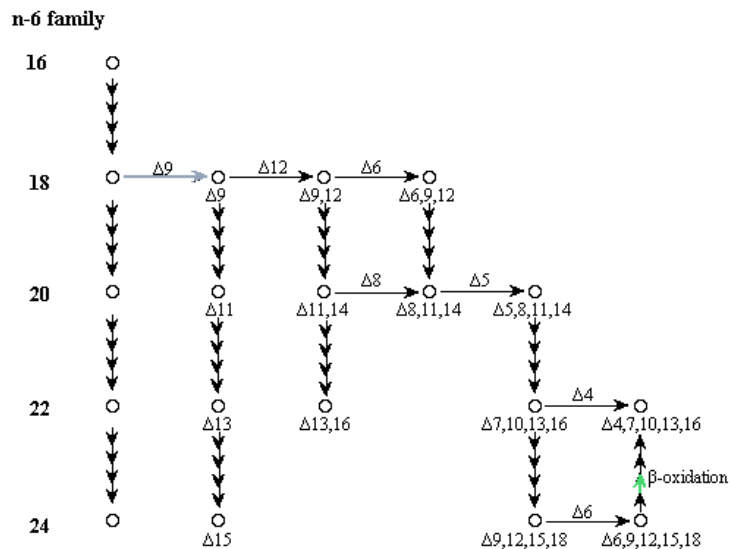
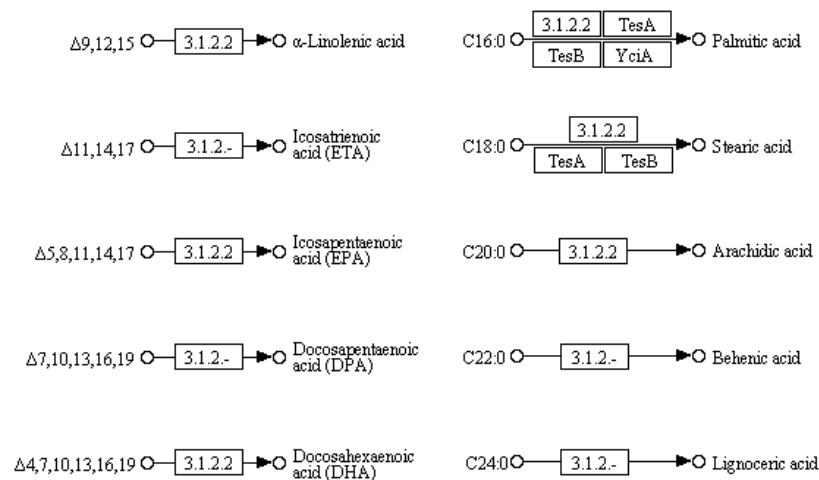
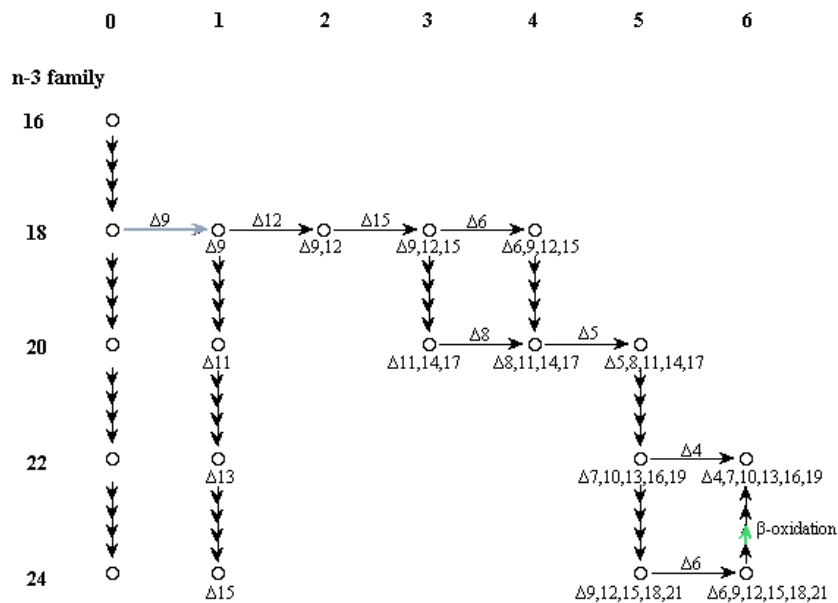
Isoniazid



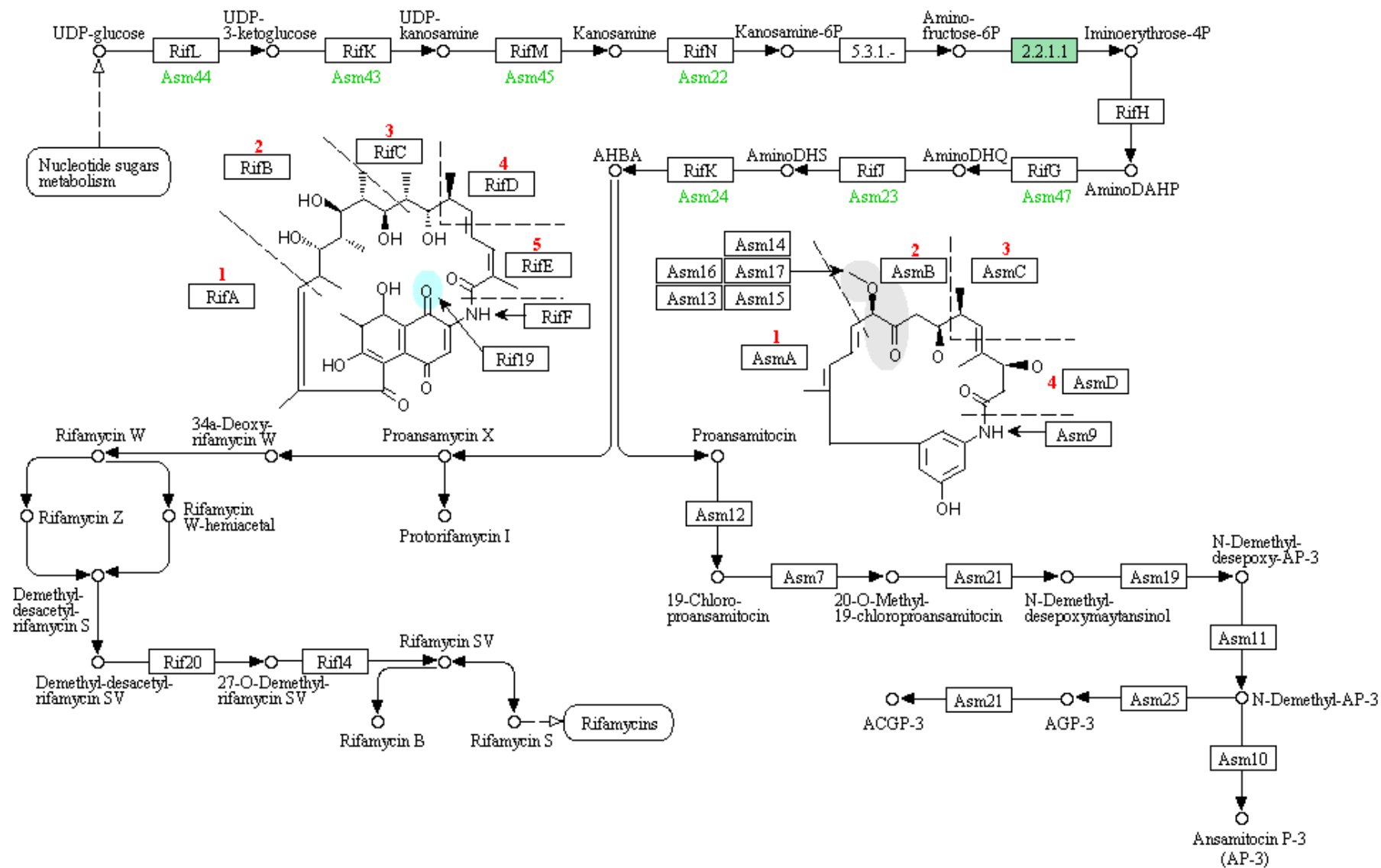
STEROID DEGRADATION



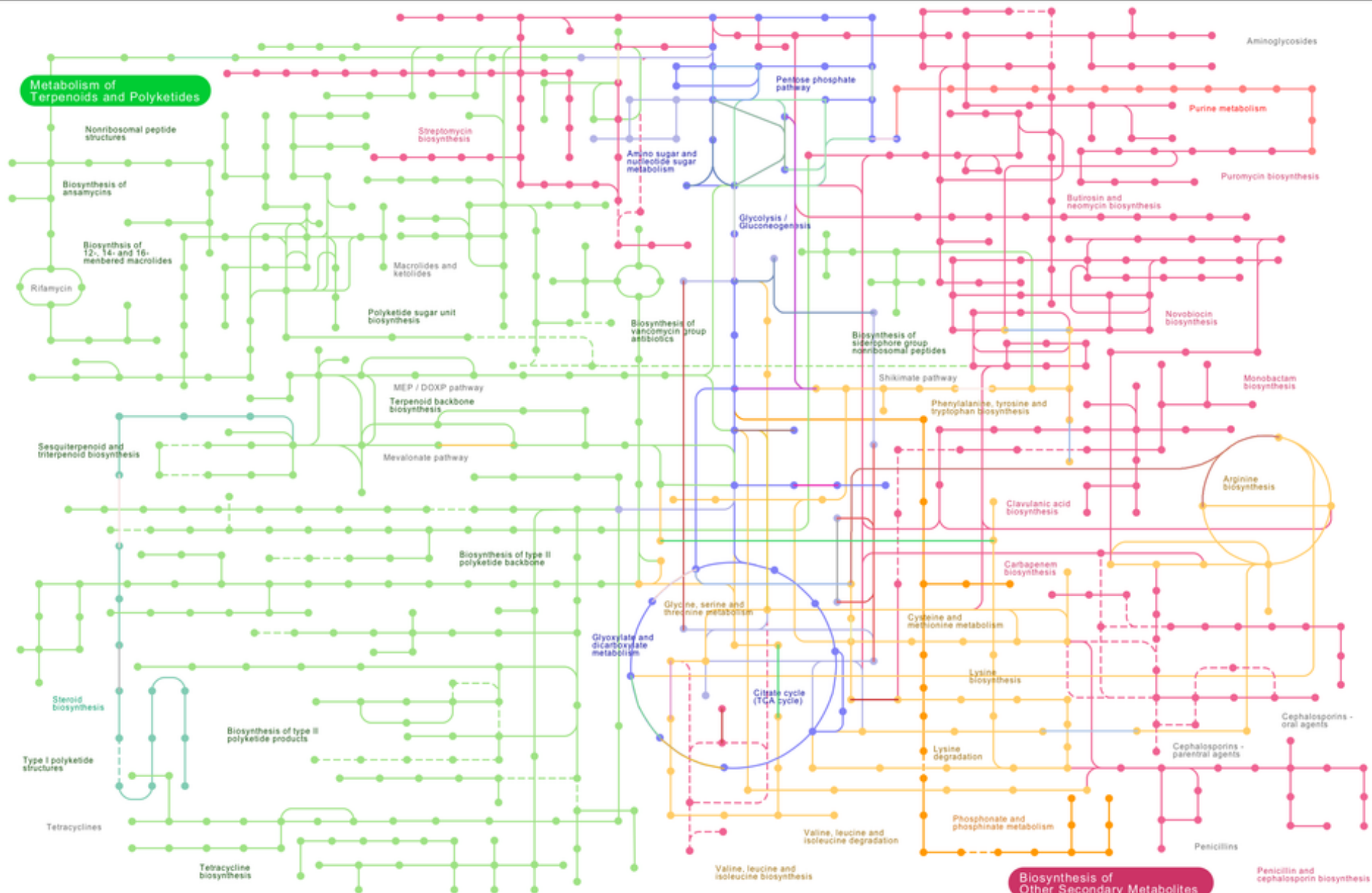
BIOSYNTHESIS OF UNSATURATED FATTY ACIDS



BIOSYNTHESIS OF ANSAMYCINS

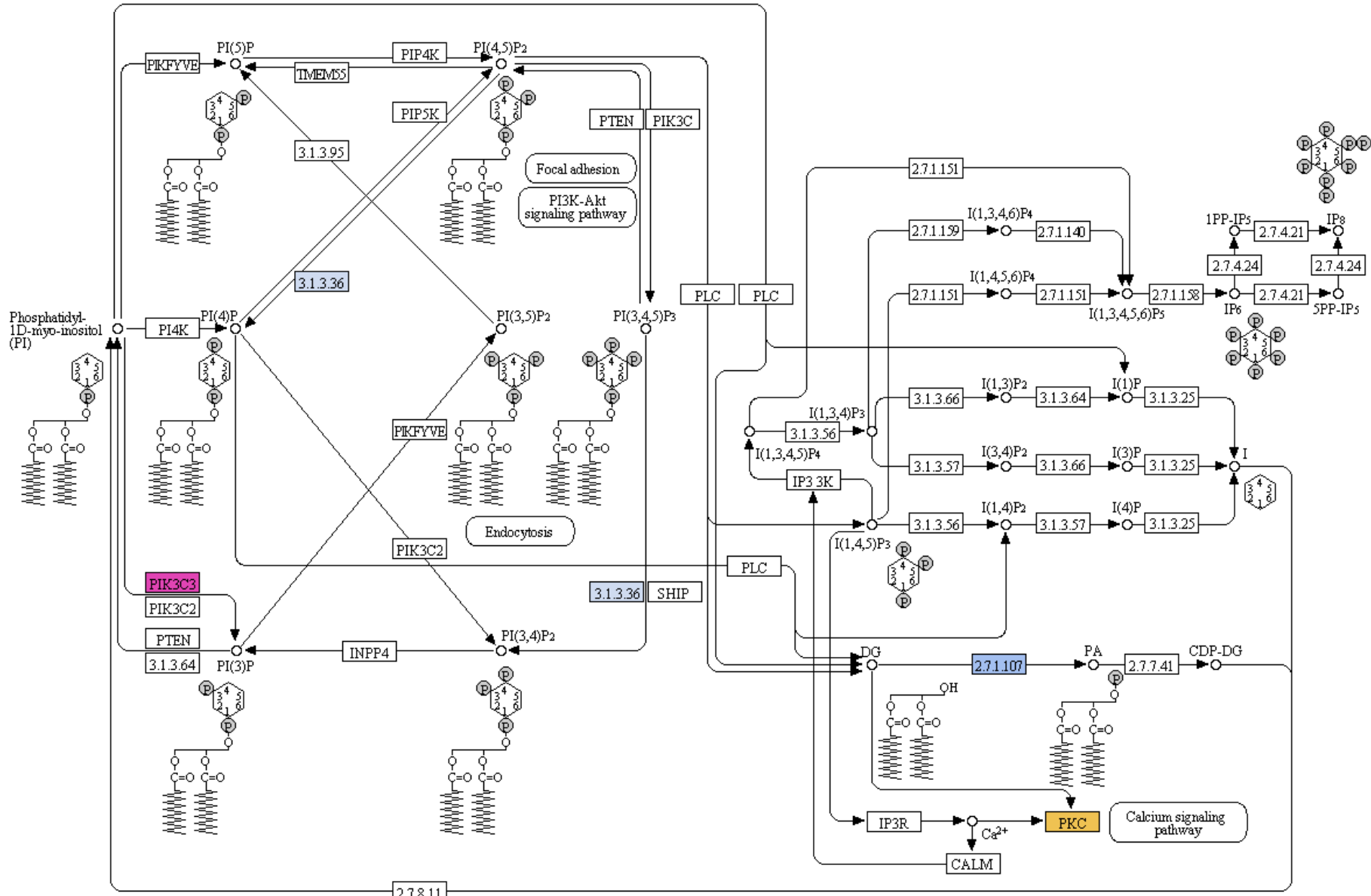


Metabolism of Terpenoids and Polyketides

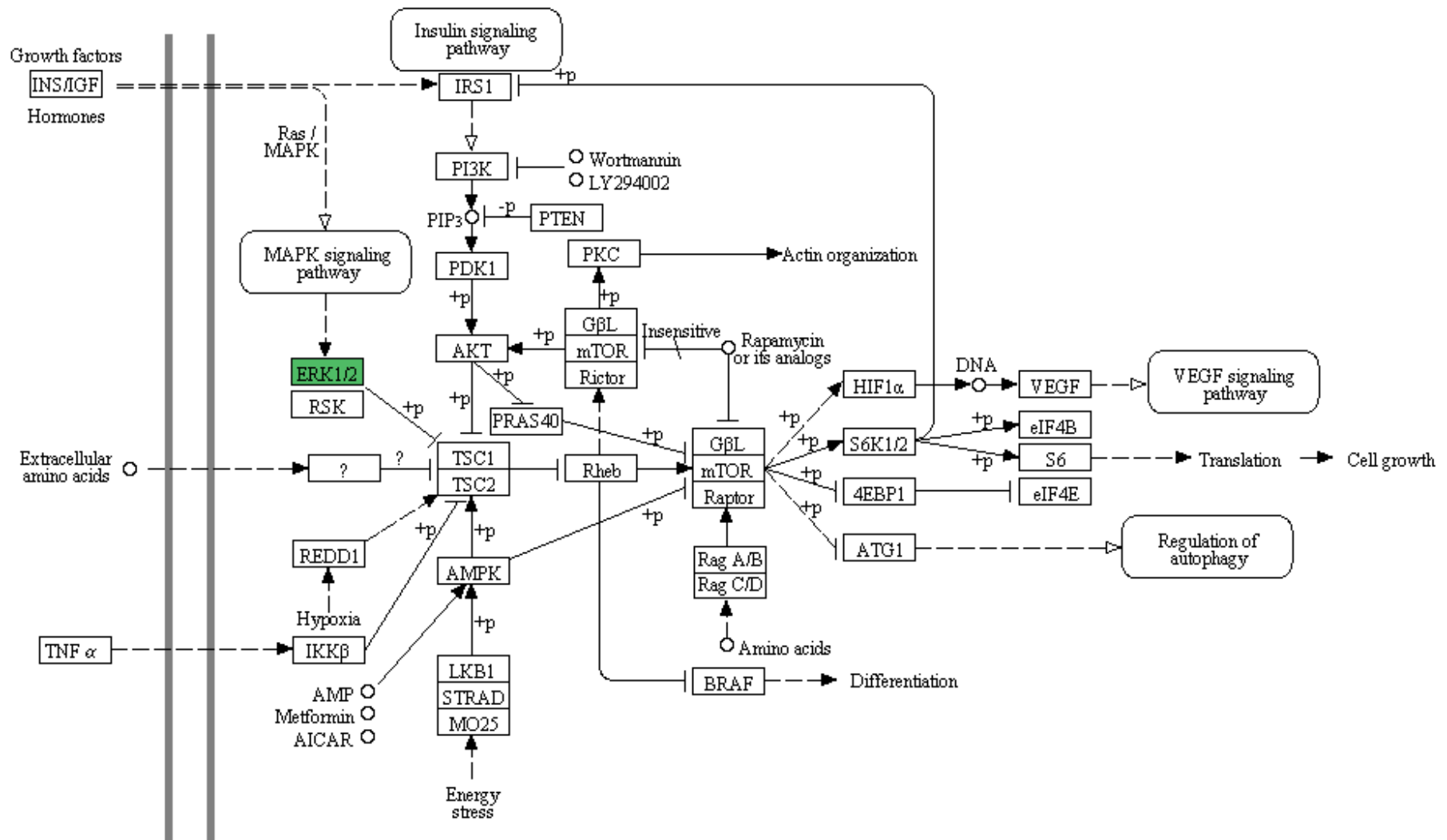


Biosynthesis of Other Secondary Metabolites

PHOSPHATIDYLINOSITOL SIGNALING SYSTEM



mTOR SIGNALING PATHWAY



T CELL RECEPTOR SIGNALING PATHWAY

