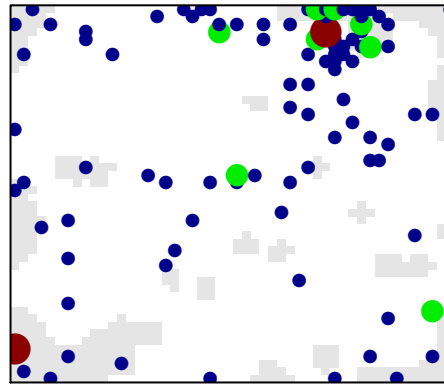
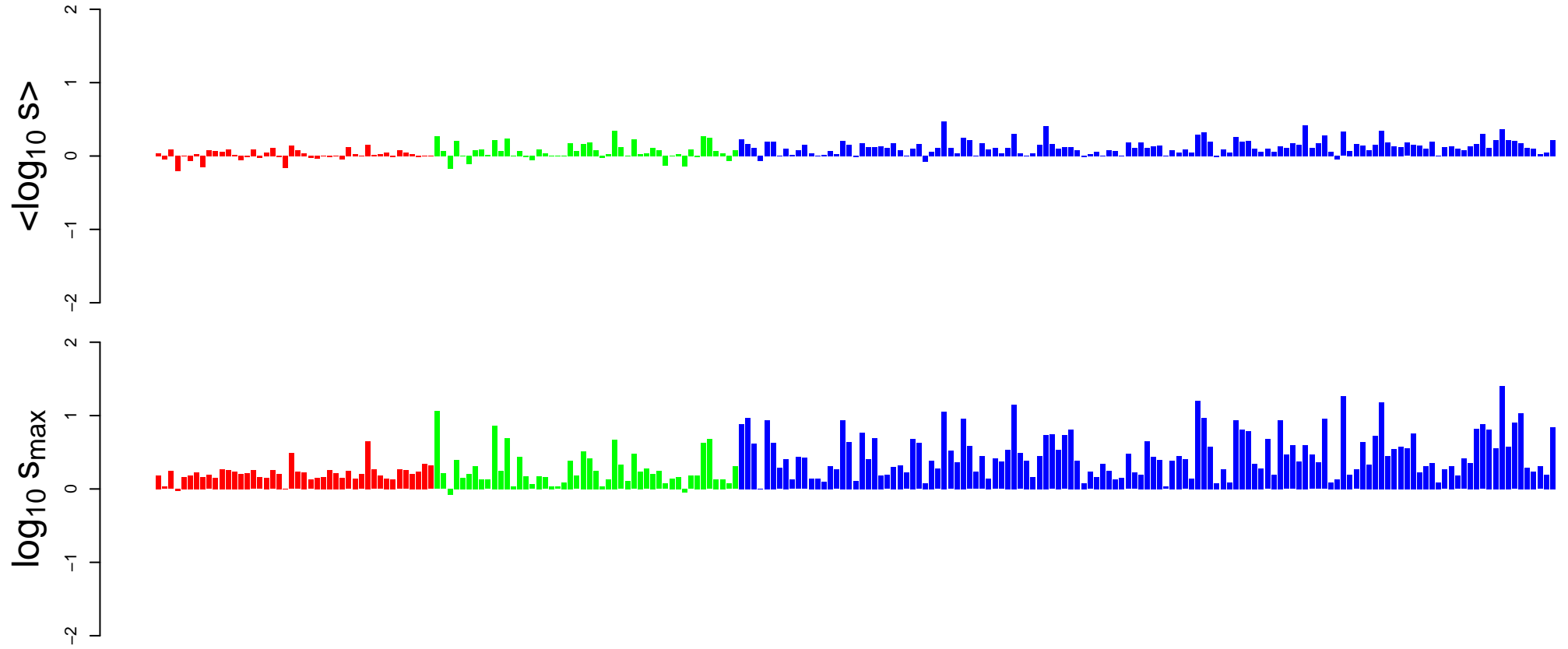


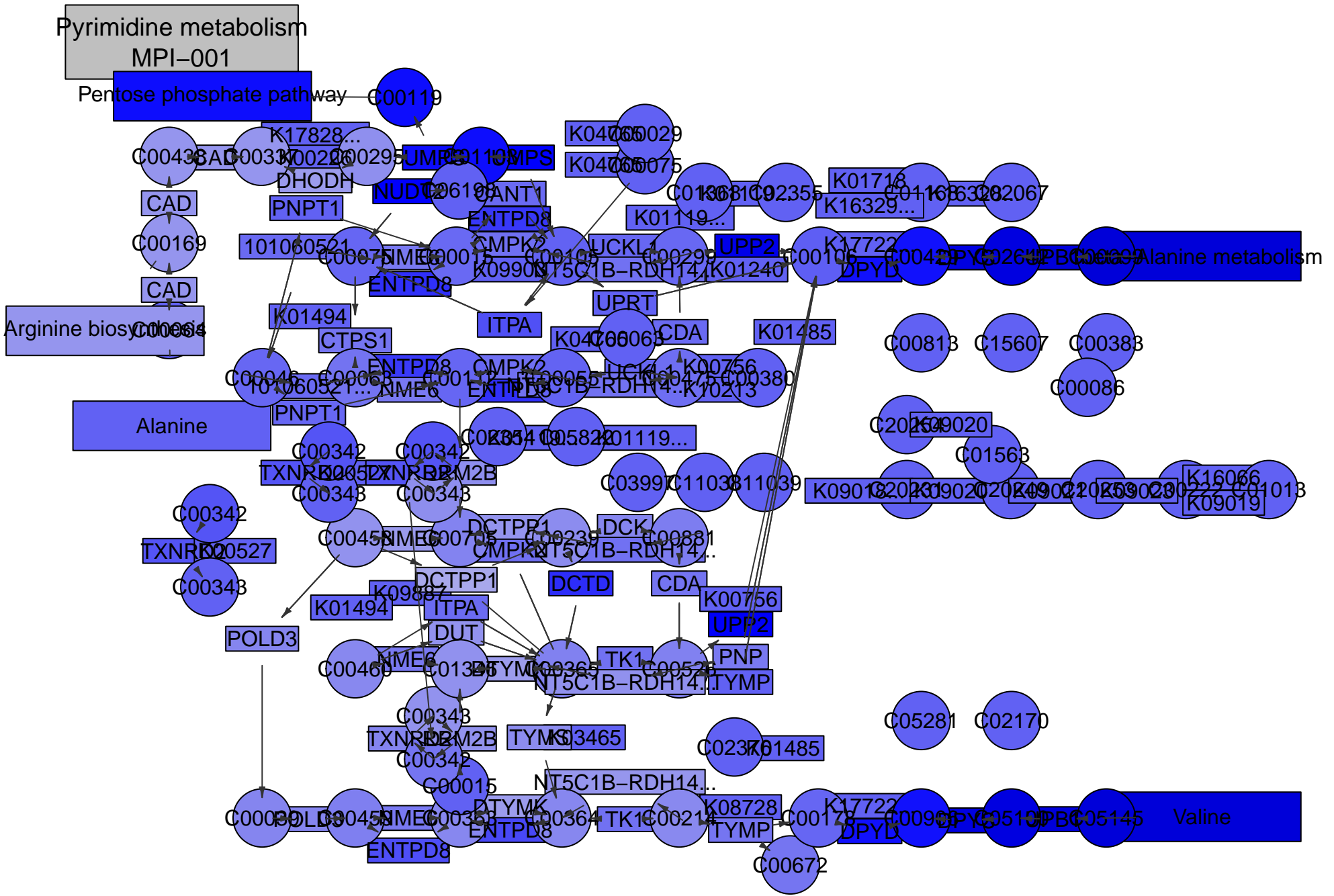
Pyrimidine metabolism

all genes



maximum = 3



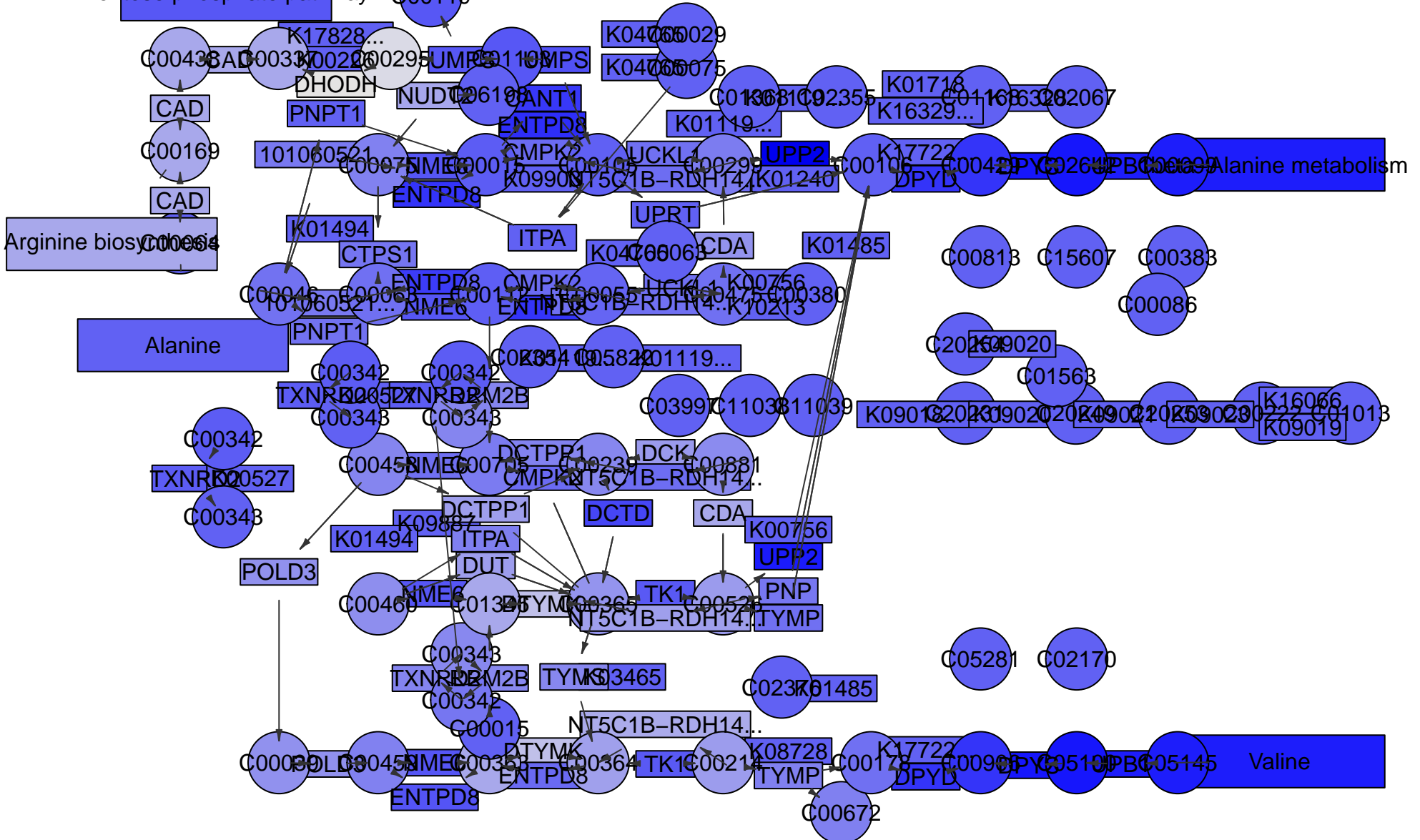


Pyrimidine metabolism

MPI-003

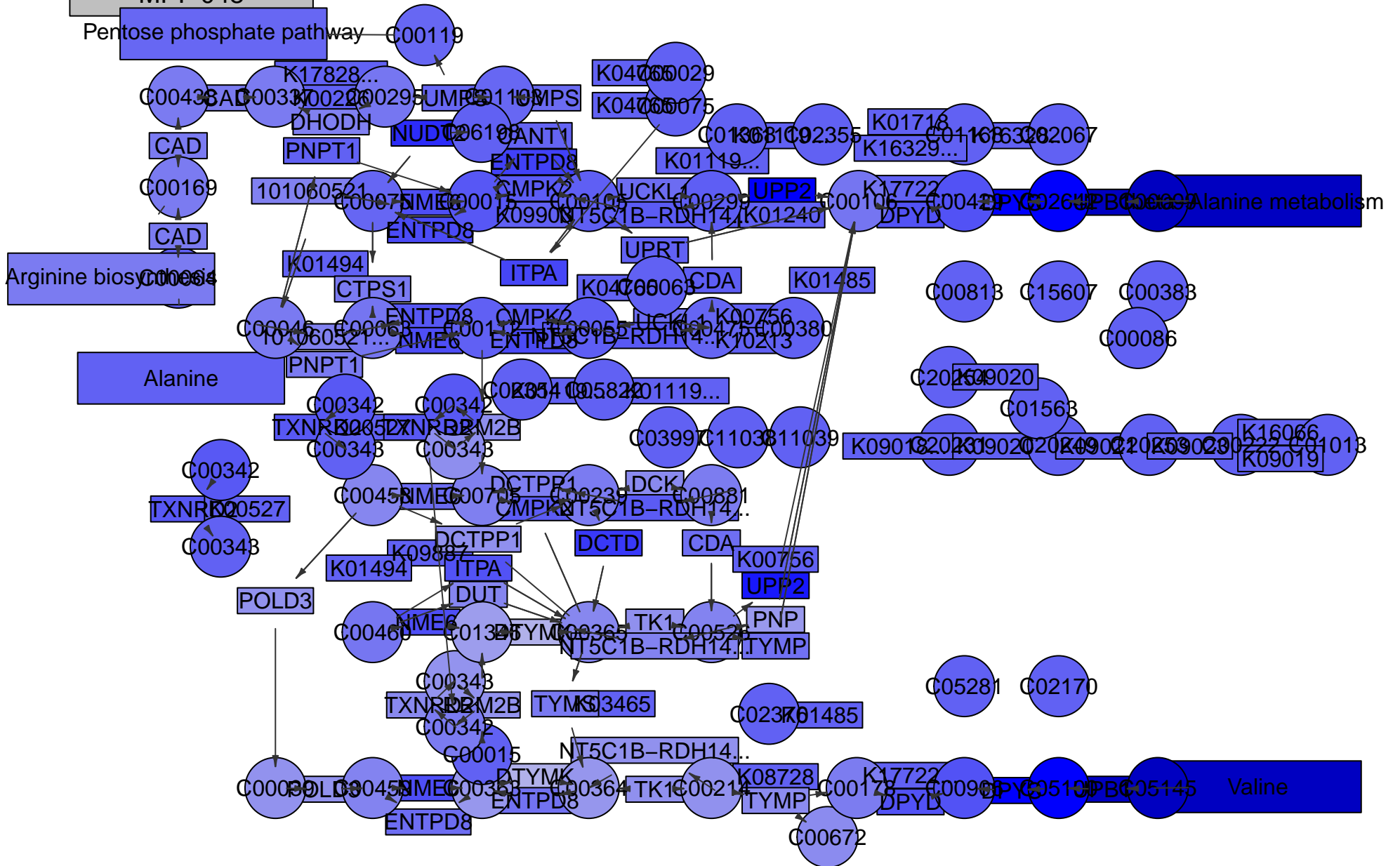
Pentose phosphate pathway

C00119



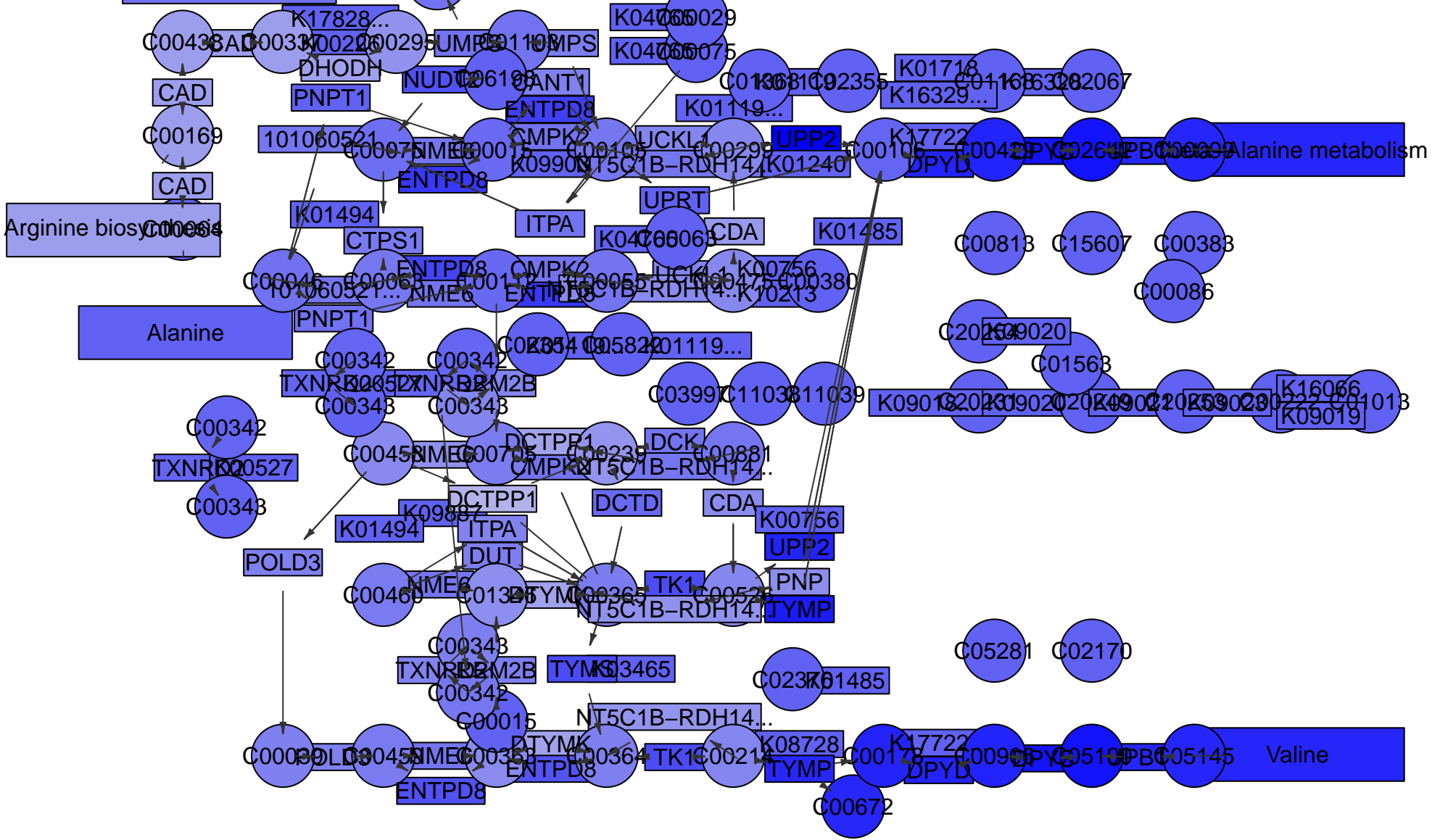
Pyrimidine metabolism
MPI-048

Pentose phosphate pathway C00119



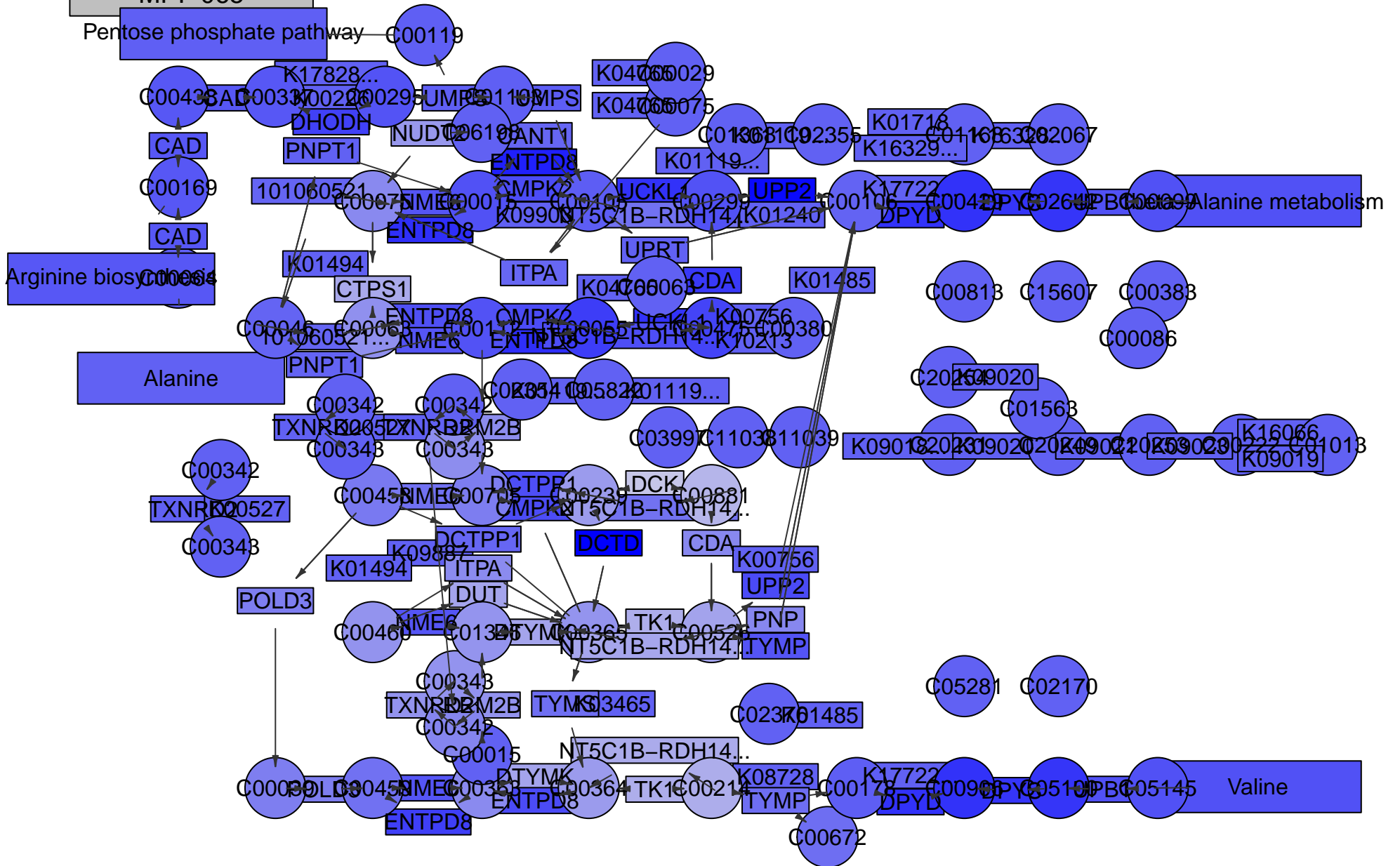
Pyrimidine metabolism
MPI-055

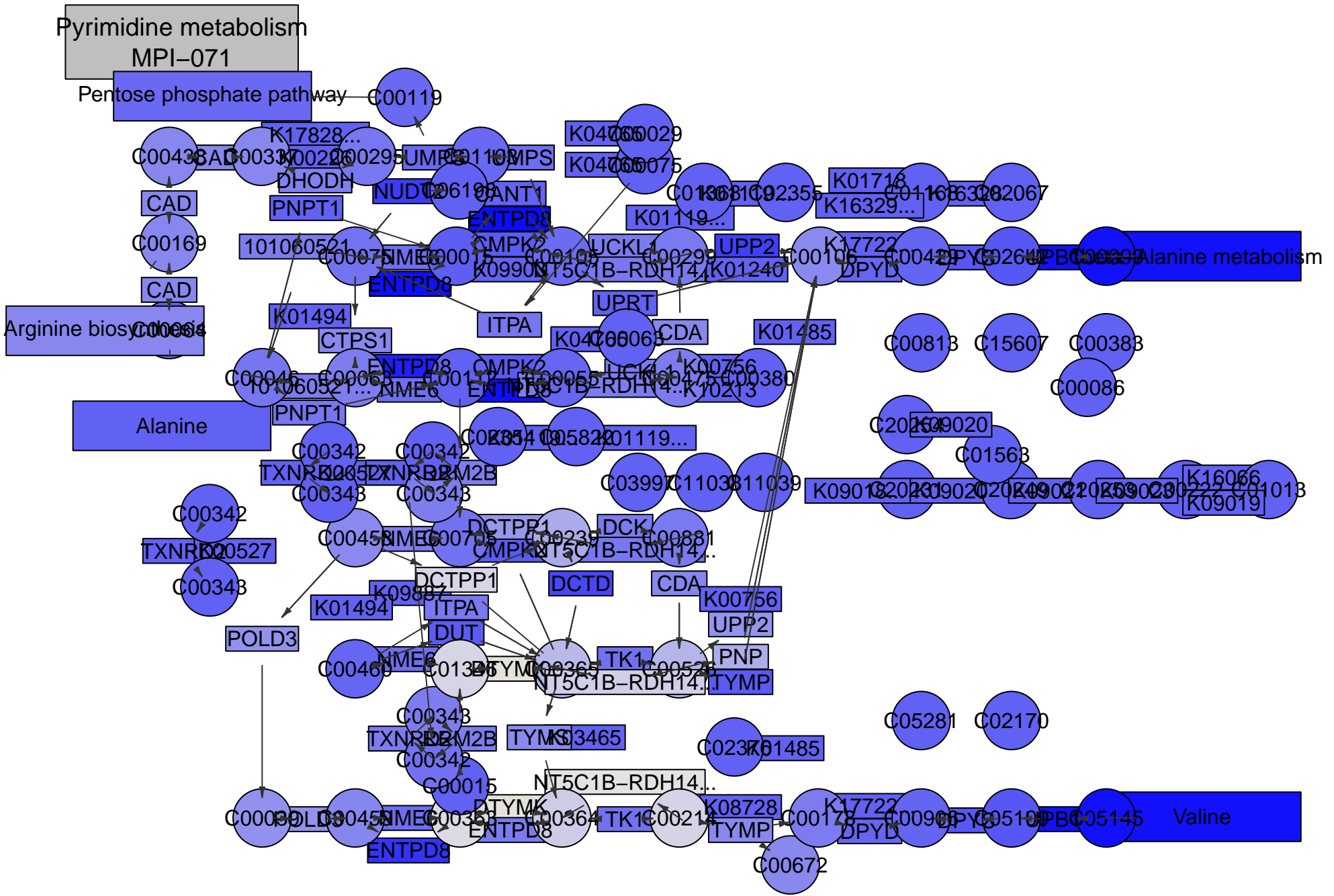
Pentose phosphate pathway C00119



Pyrimidine metabolism
MPI-065

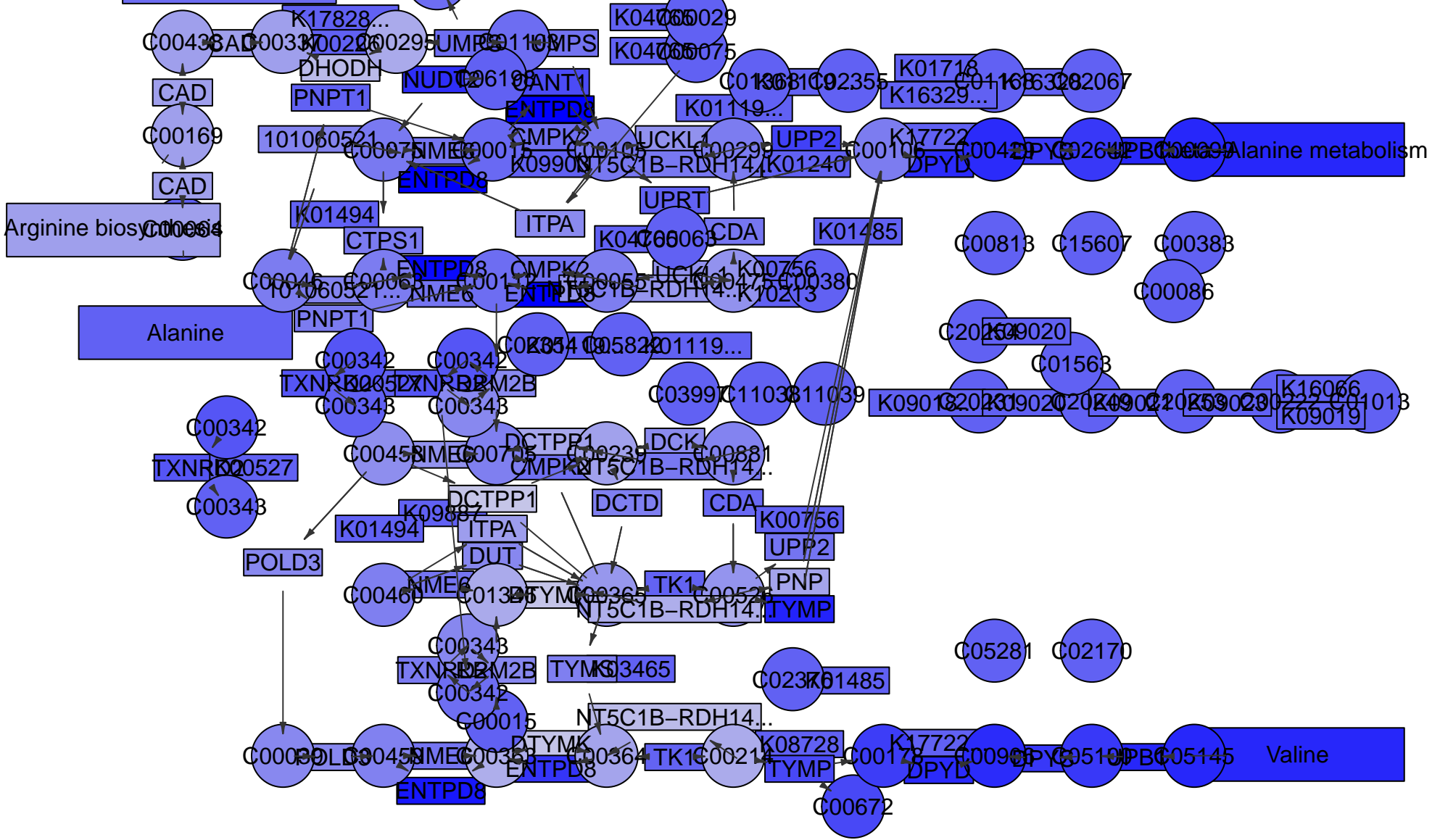
Pentose phosphate pathway
C00119





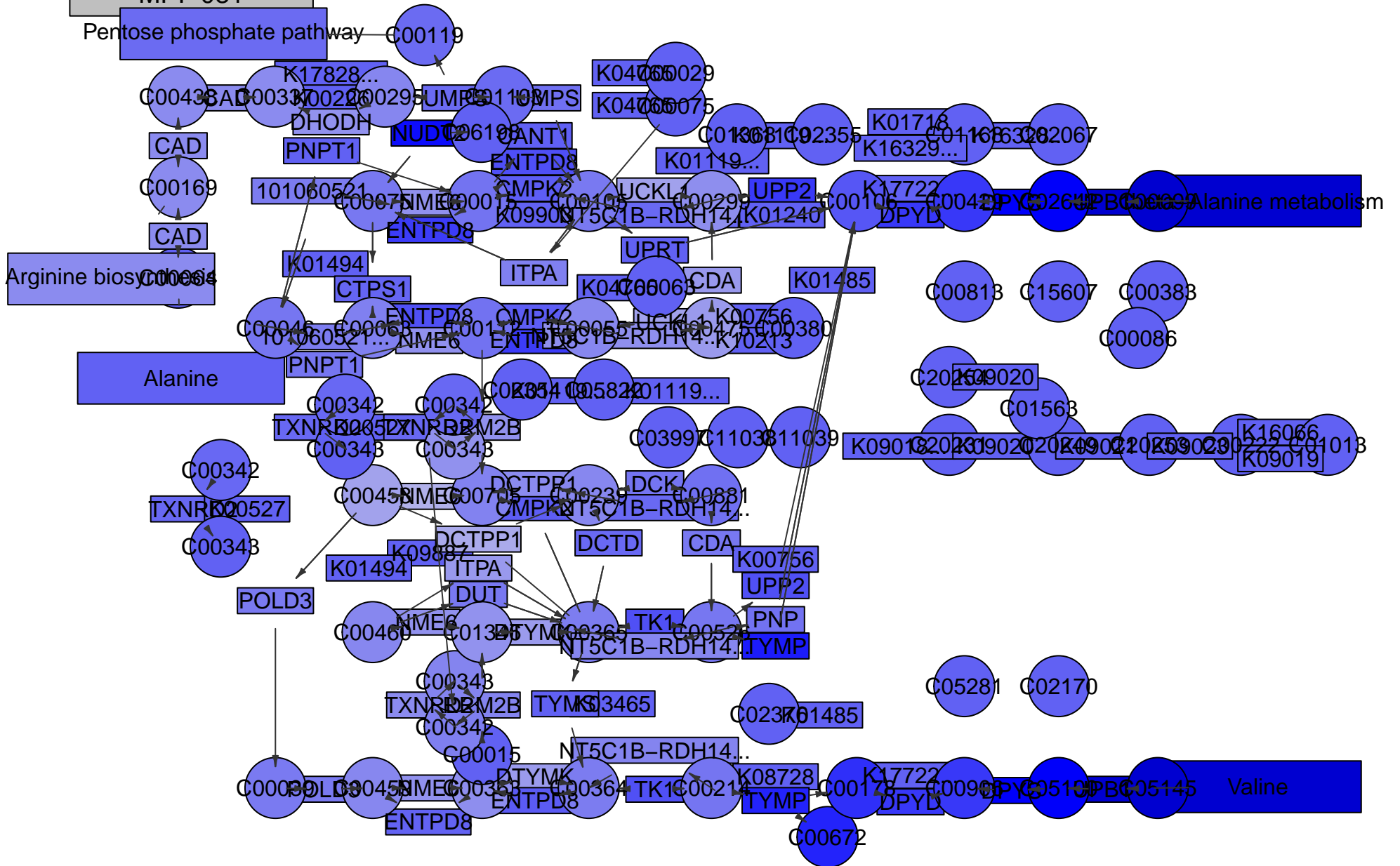
Pyrimidine metabolism
MPI-075

Pentose phosphate pathway C00119



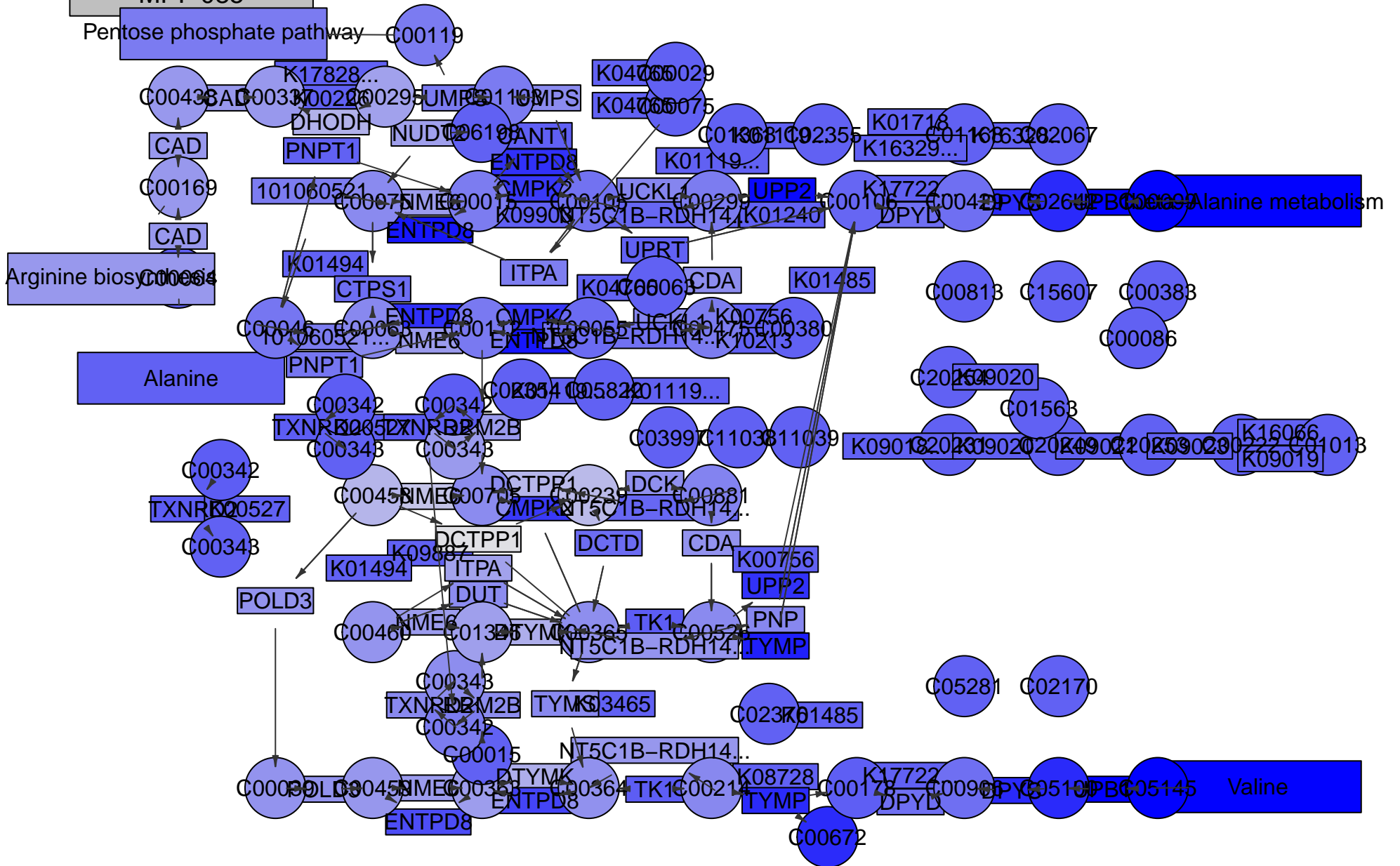
Pyrimidine metabolism
MPI-081

Pentose phosphate pathway C00119



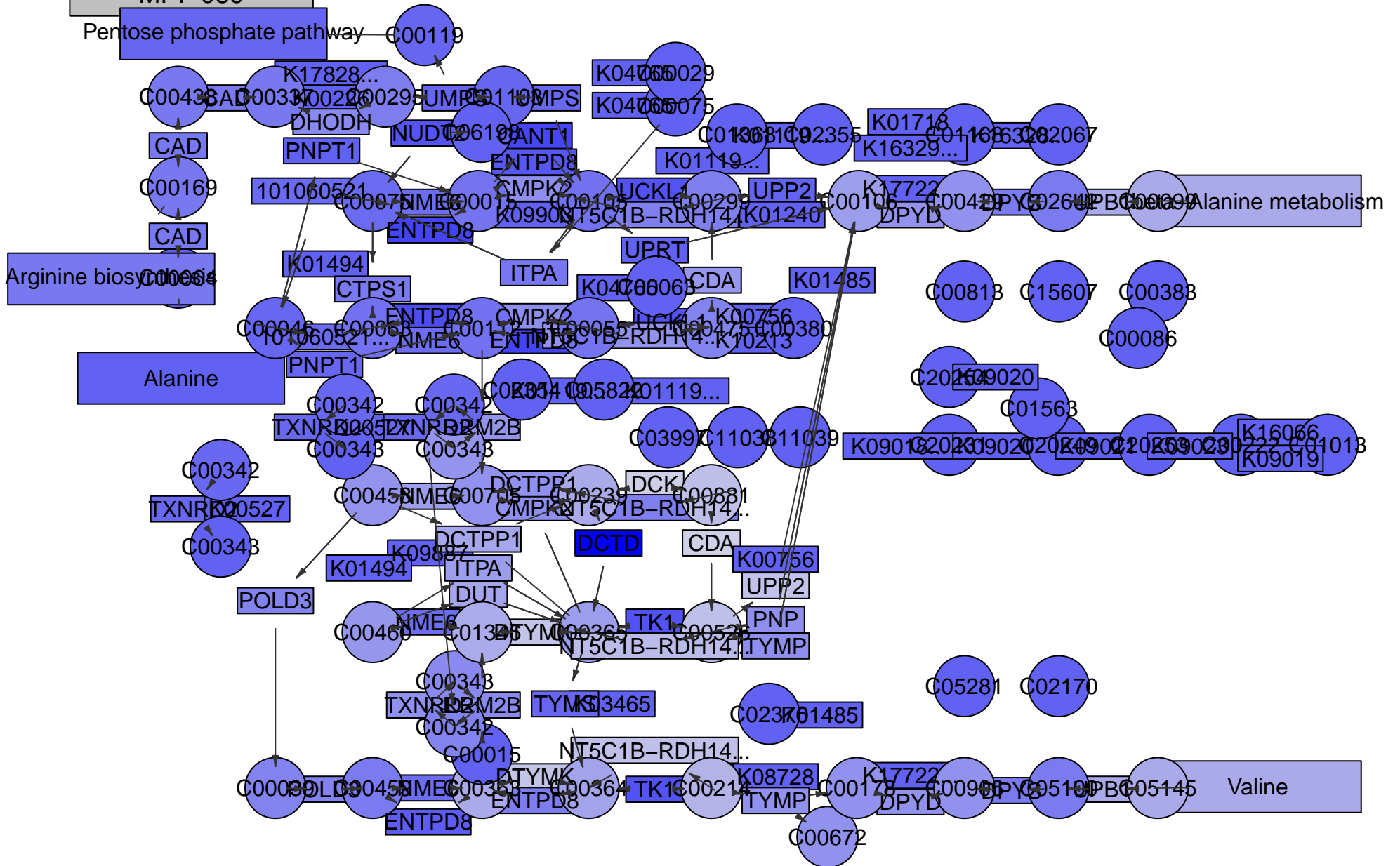
Pyrimidine metabolism
MPI-085

Pentose phosphate pathway C00119



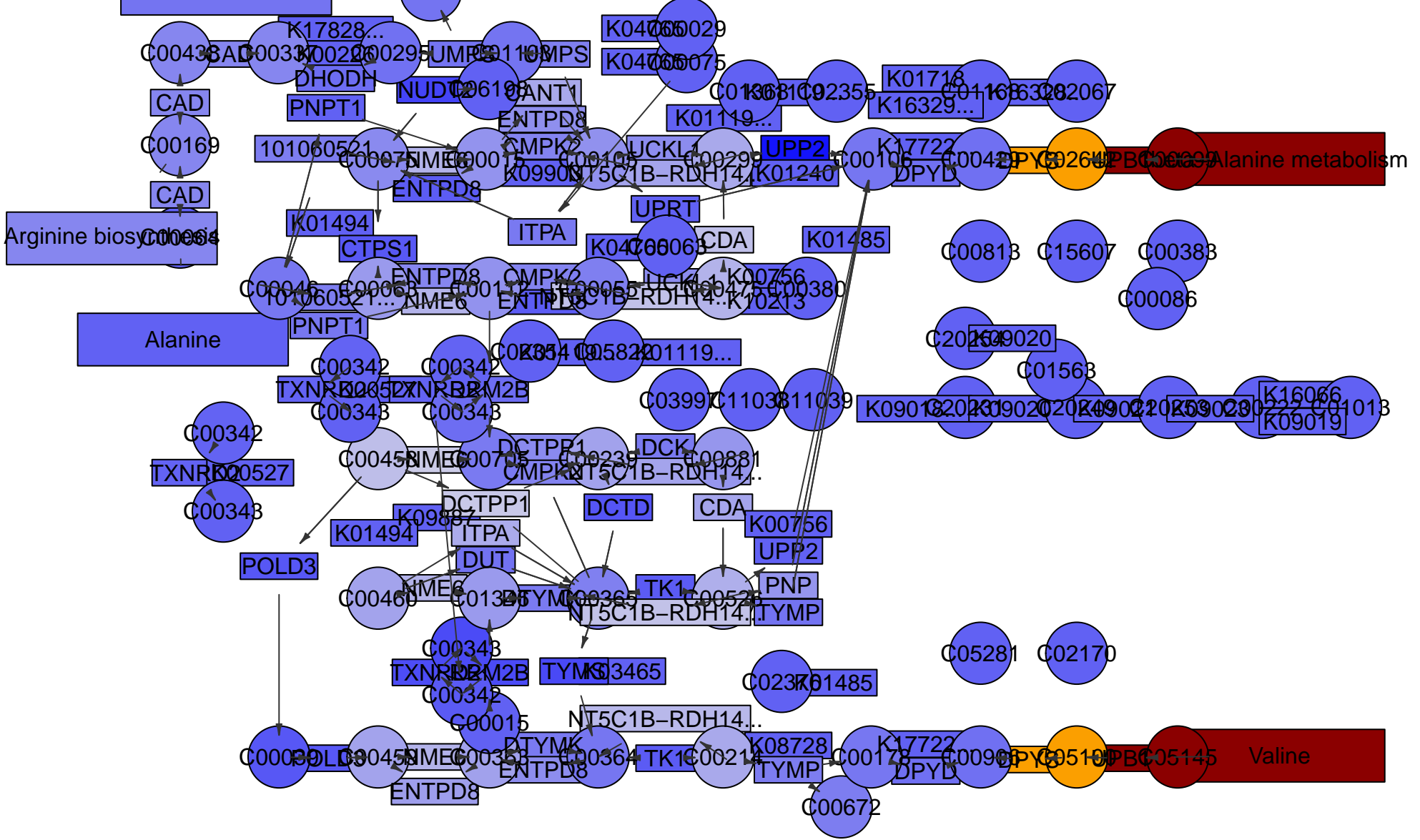
Pyrimidine metabolism
MPI-089

Pentose phosphate pathway C00119



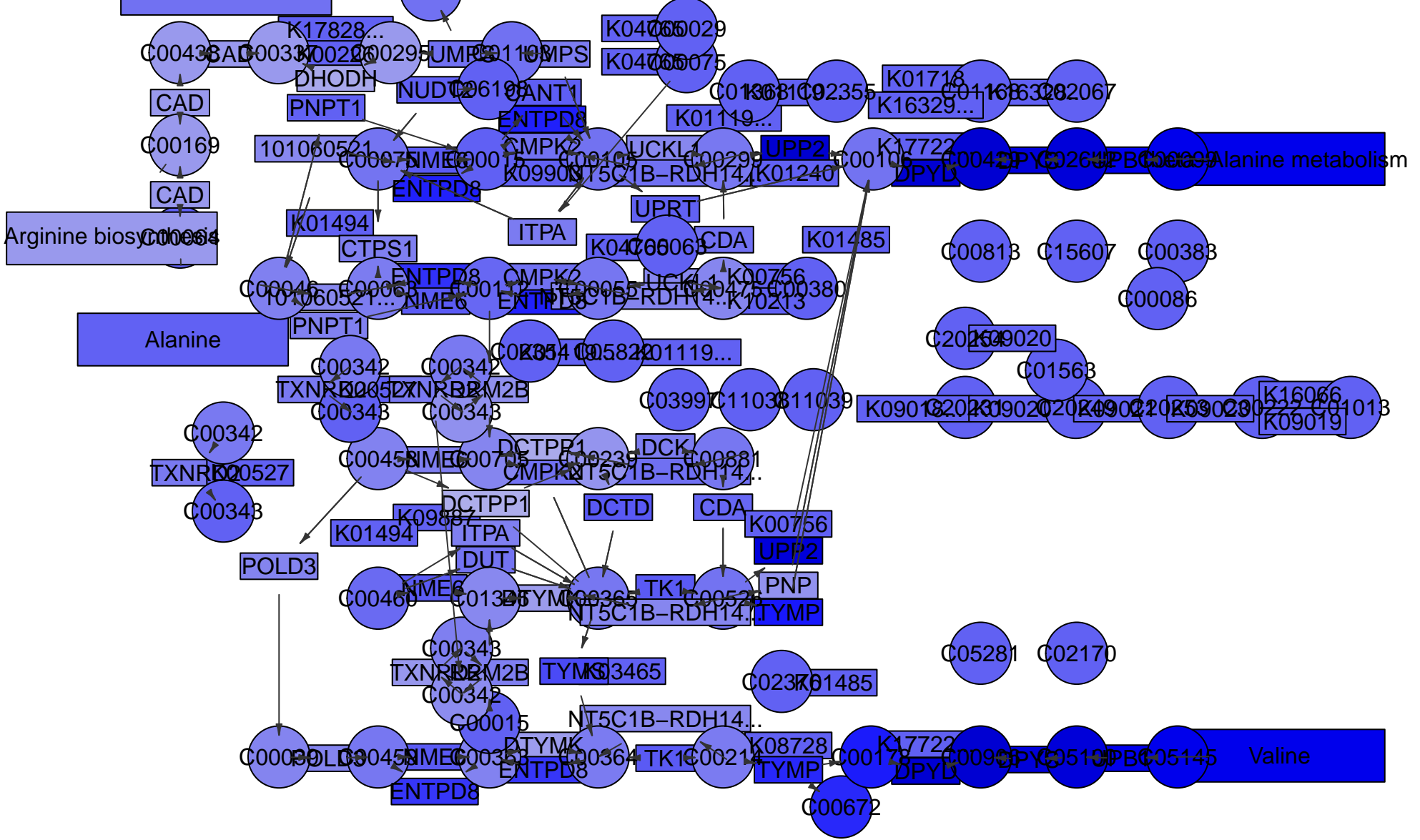
Pyrimidine metabolism
MPI-090

Pentose phosphate pathway C00119



Pyrimidine metabolism
MPI-114

Pentose phosphate pathway C00119



Alanine metabolism

Arginine biosynthesis

Alanine

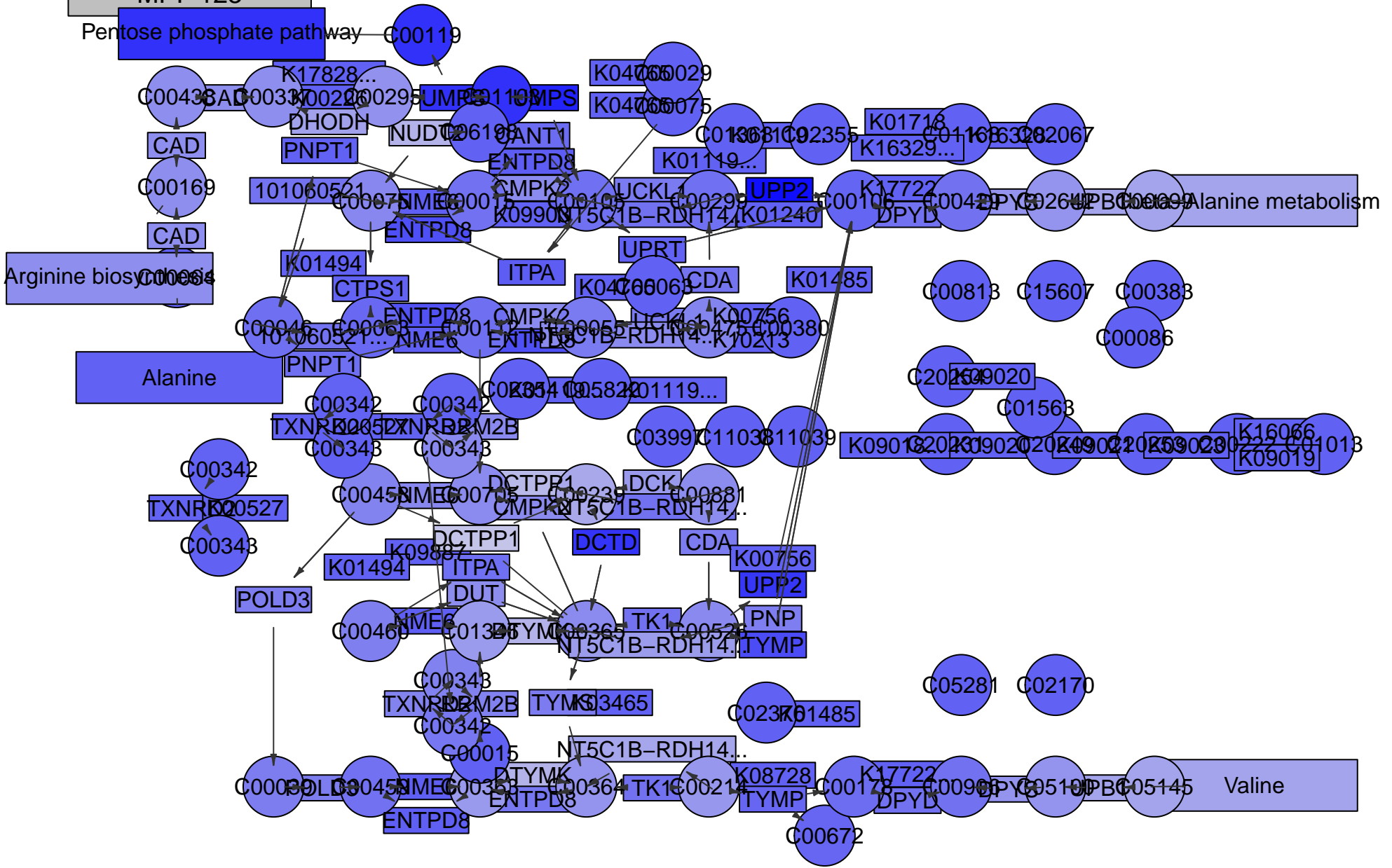
Valine

Pyrimidine metabolism

MPI-123

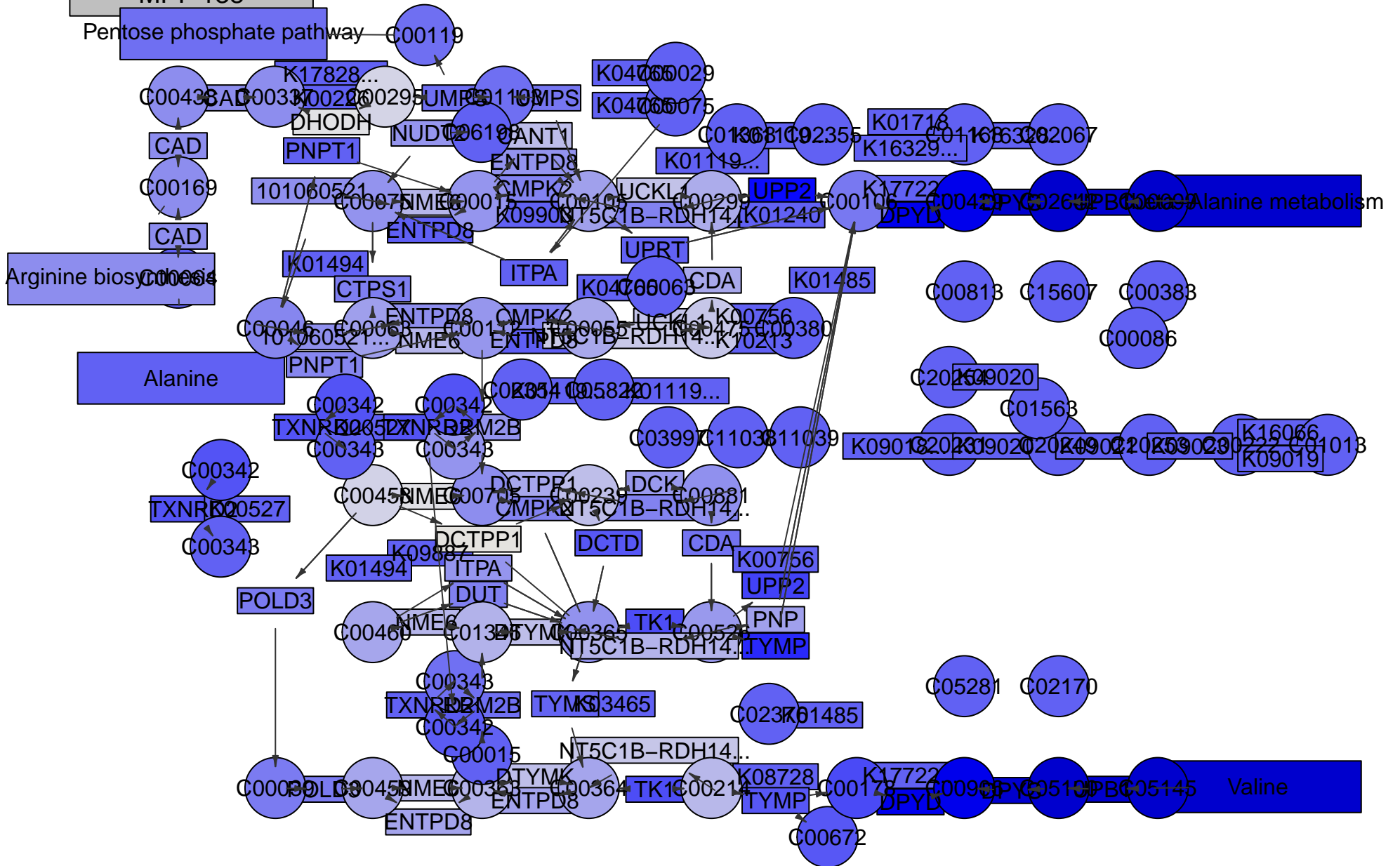
Pentose phosphate pathway

C00119



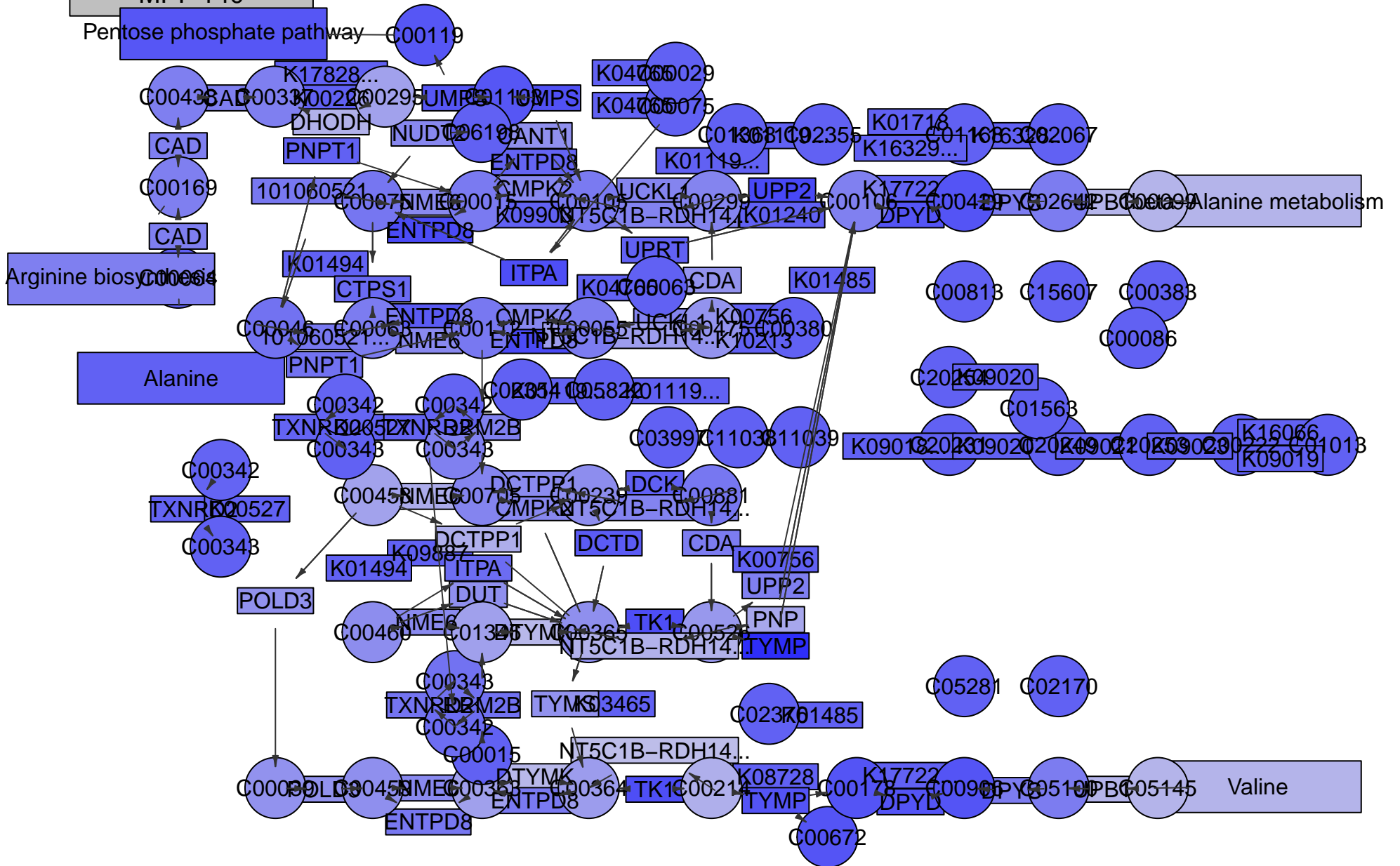
Pyrimidine metabolism
MPI-138

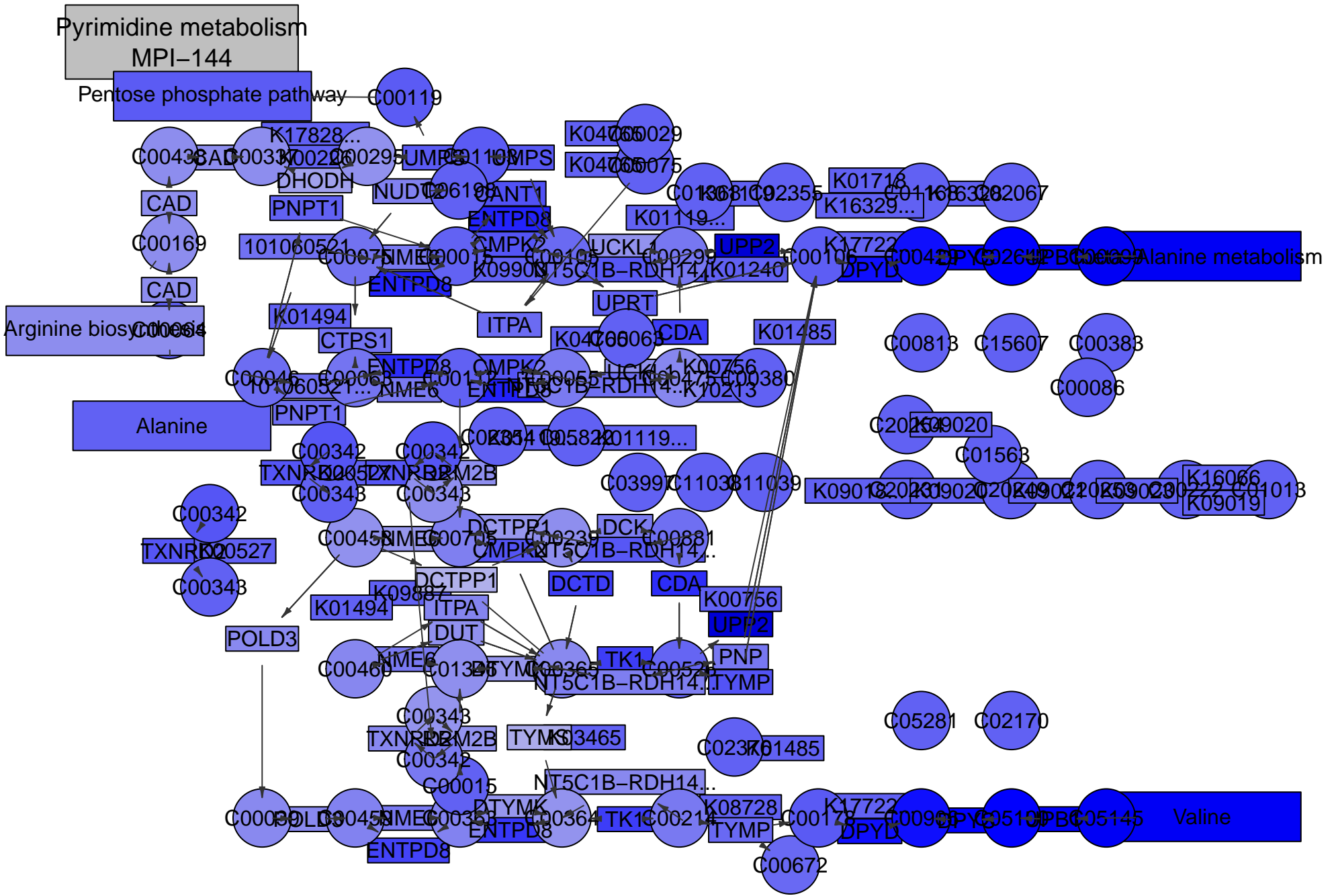
Pentose phosphate pathway C00119

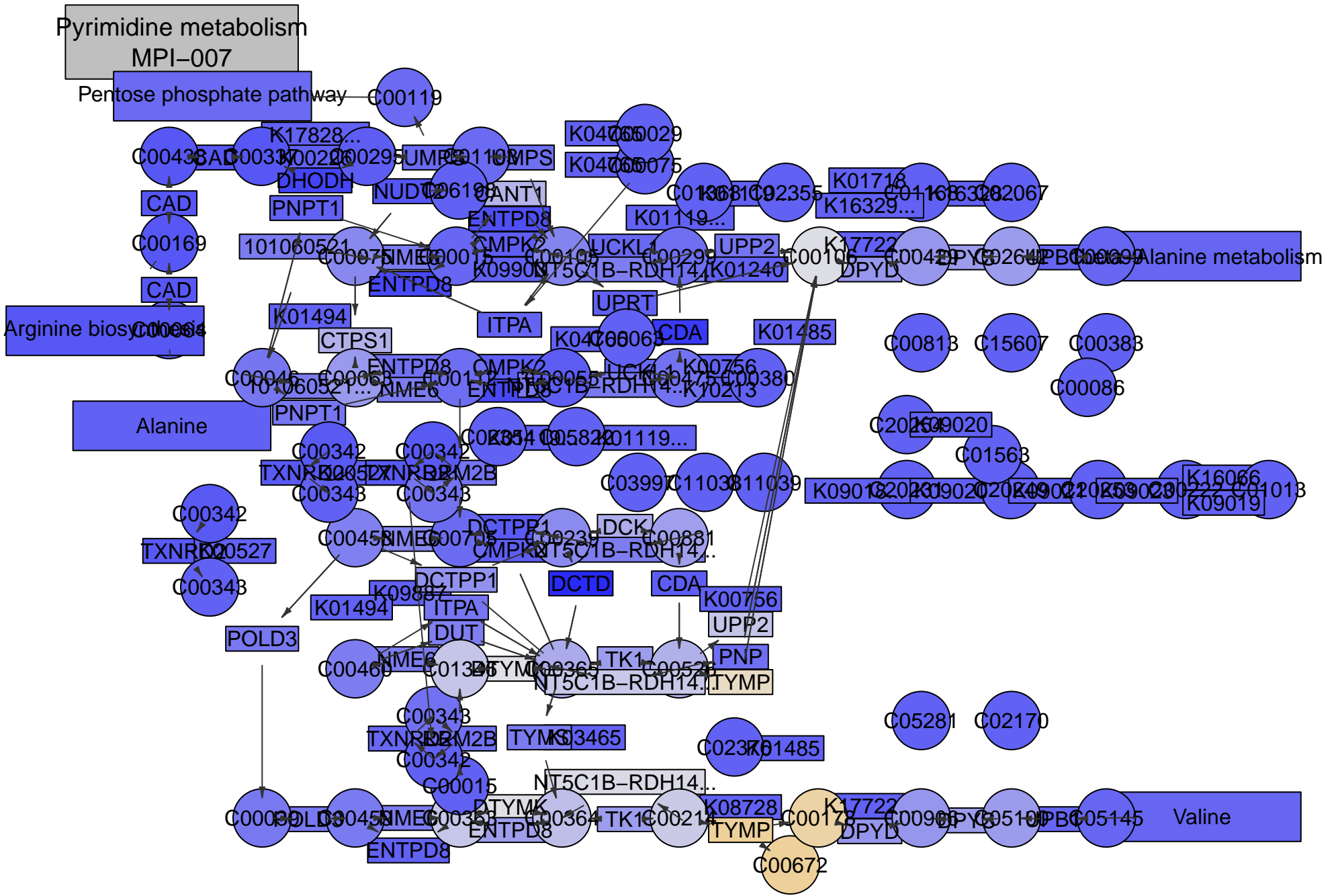


Pyrimidine metabolism
MPI-140

Pentose phosphate pathway

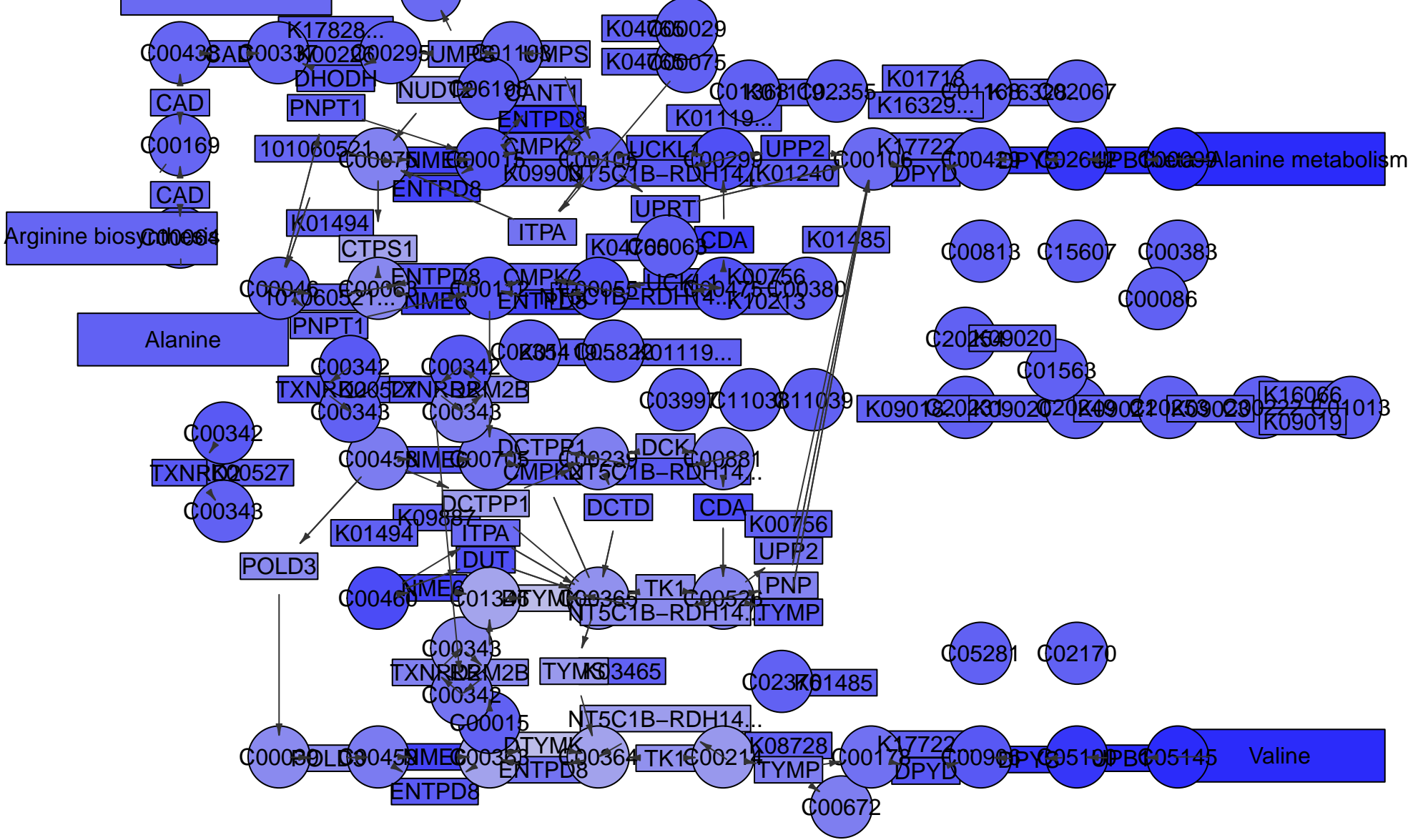






Pyrimidine metabolism
MPI-011

Pentose phosphate pathway C00119

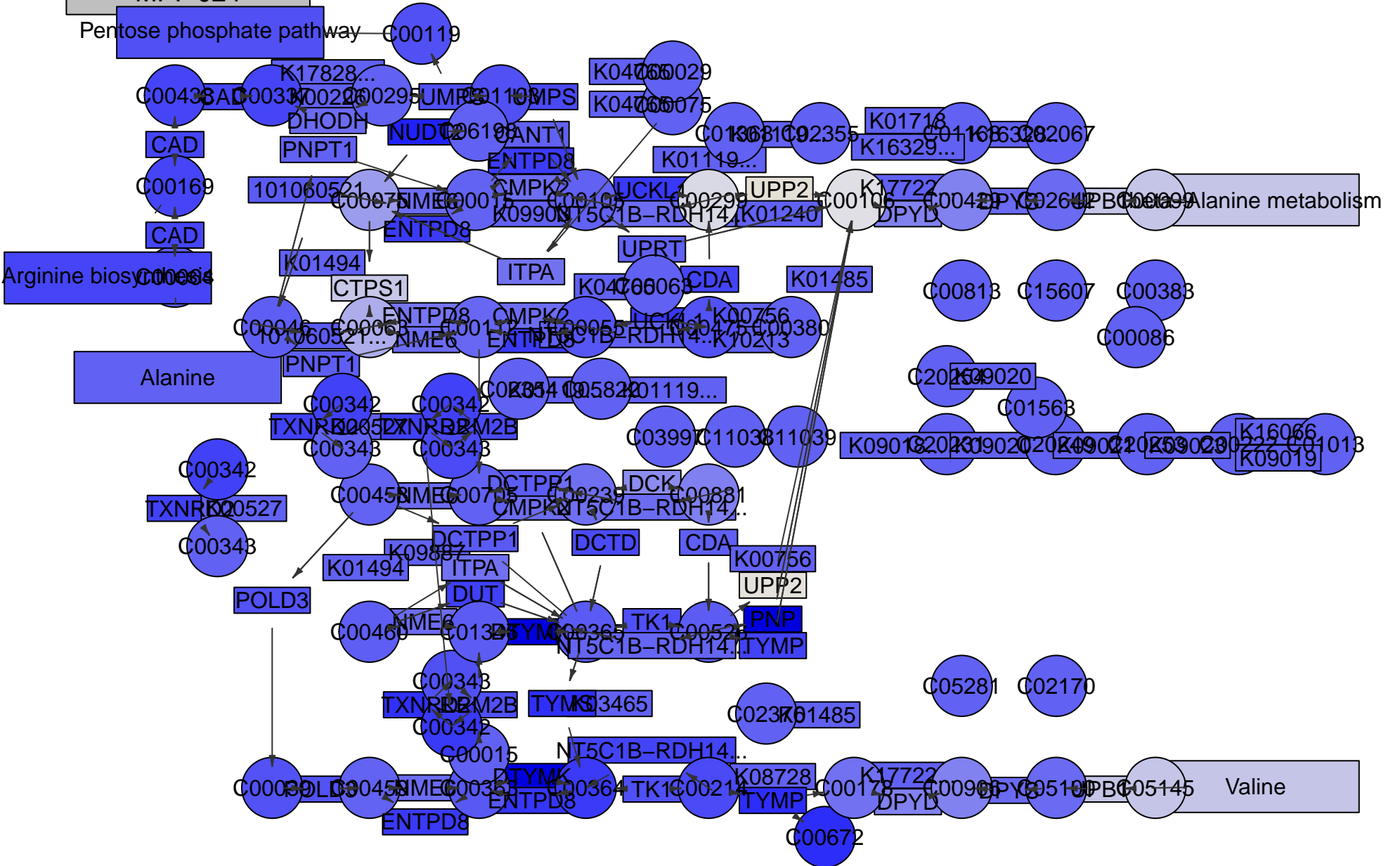


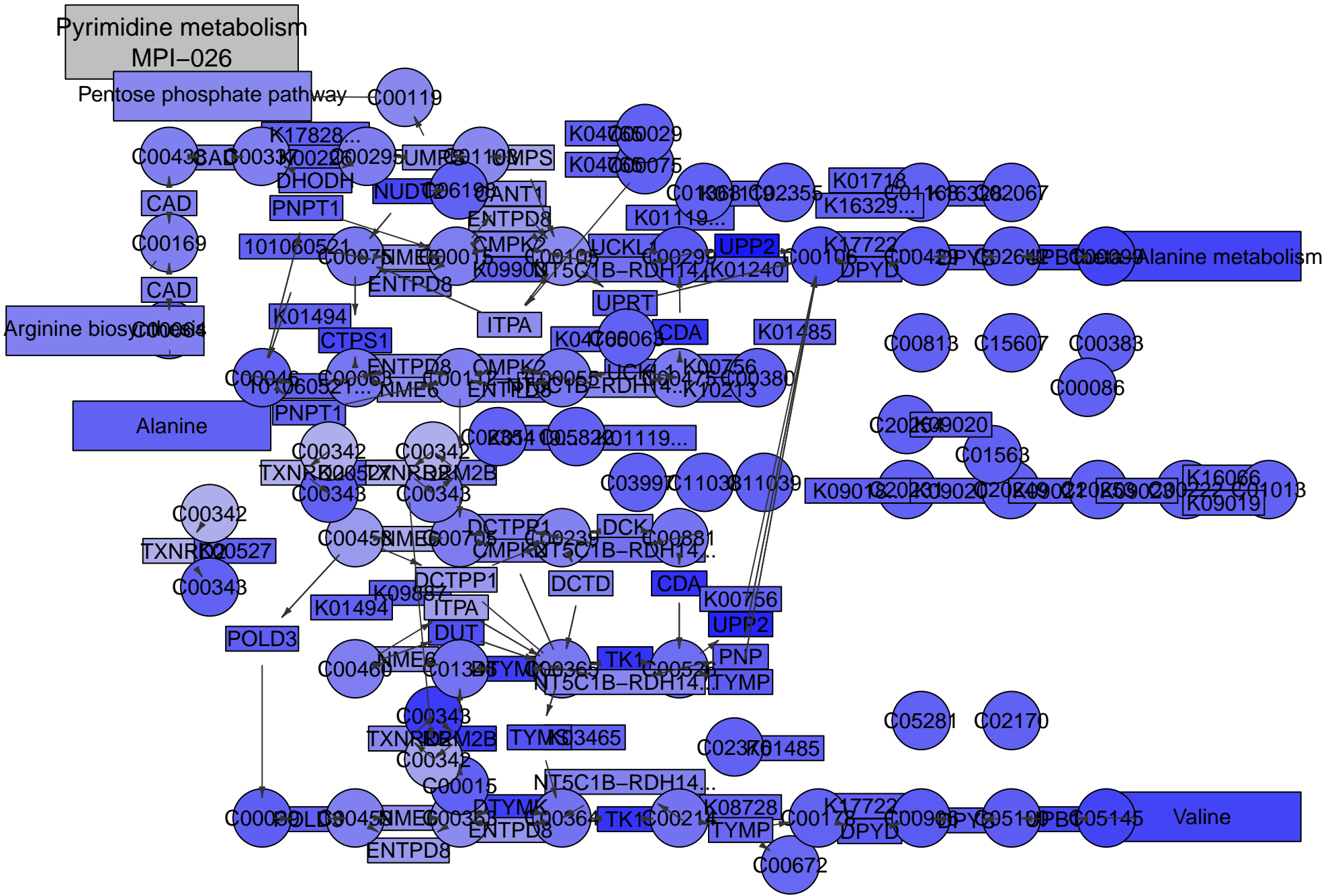
Pyrimidine metabolism

MPI-024

Pentose phosphate pathway

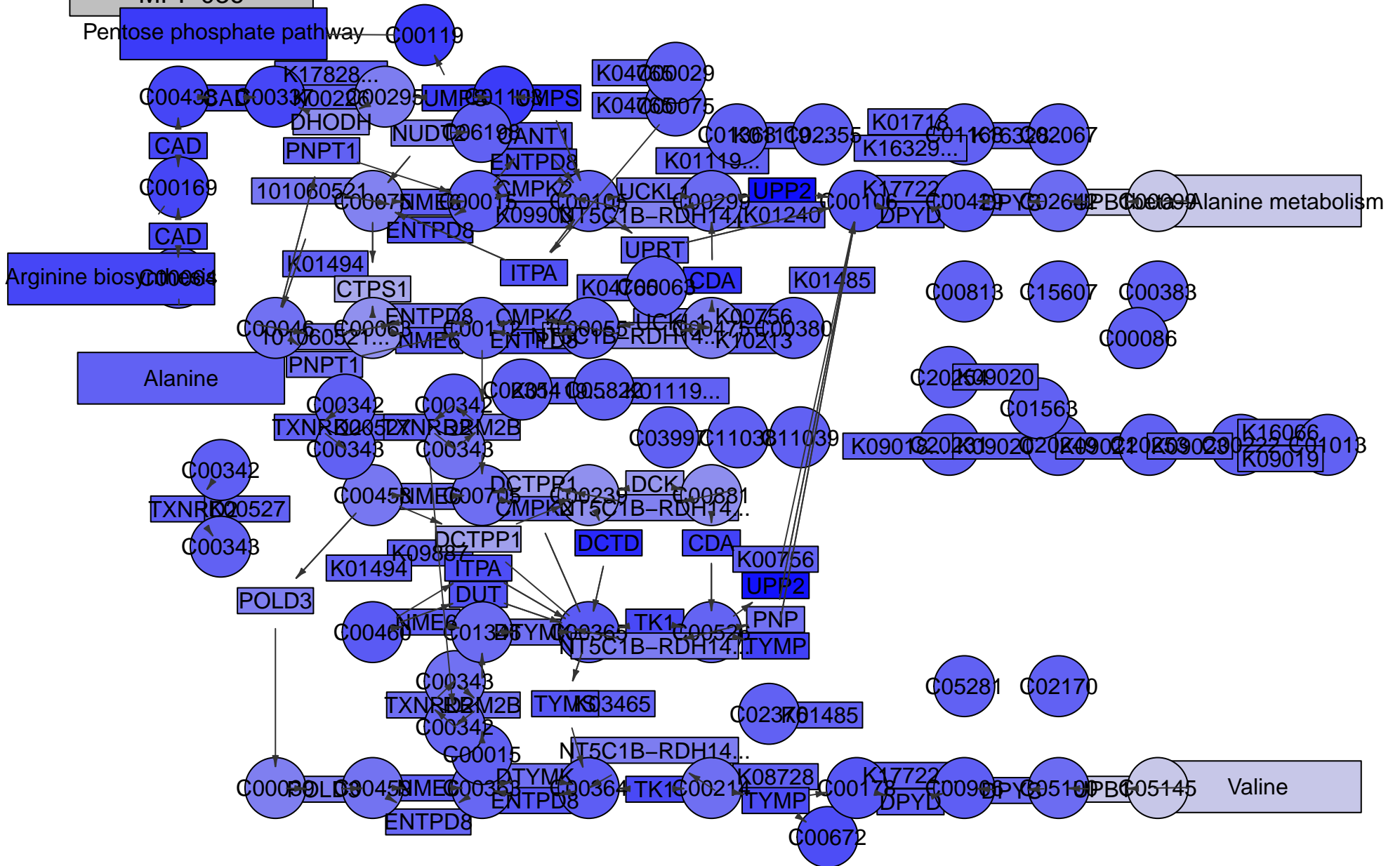
C00119

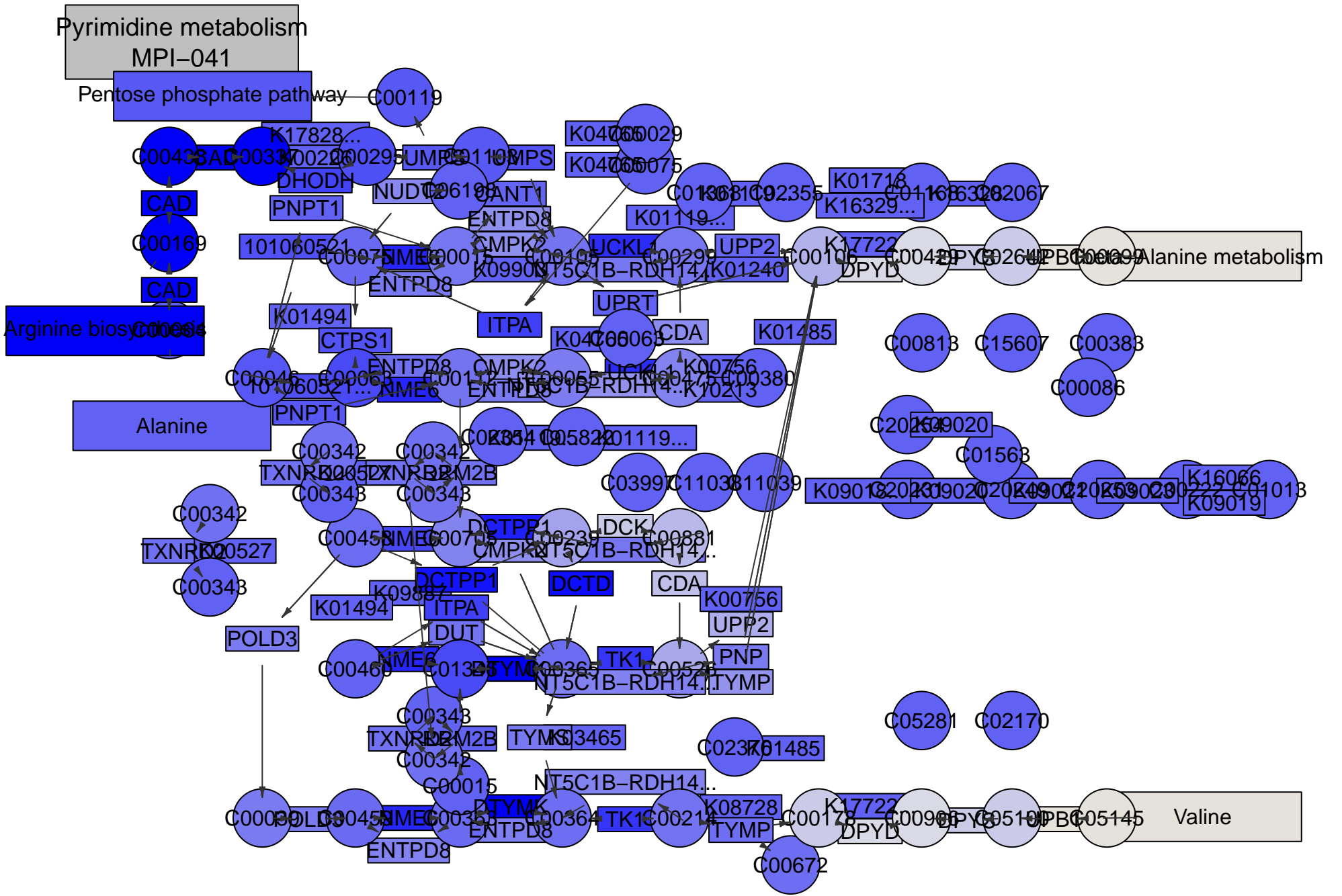




Pyrimidine metabolism
MPI-036

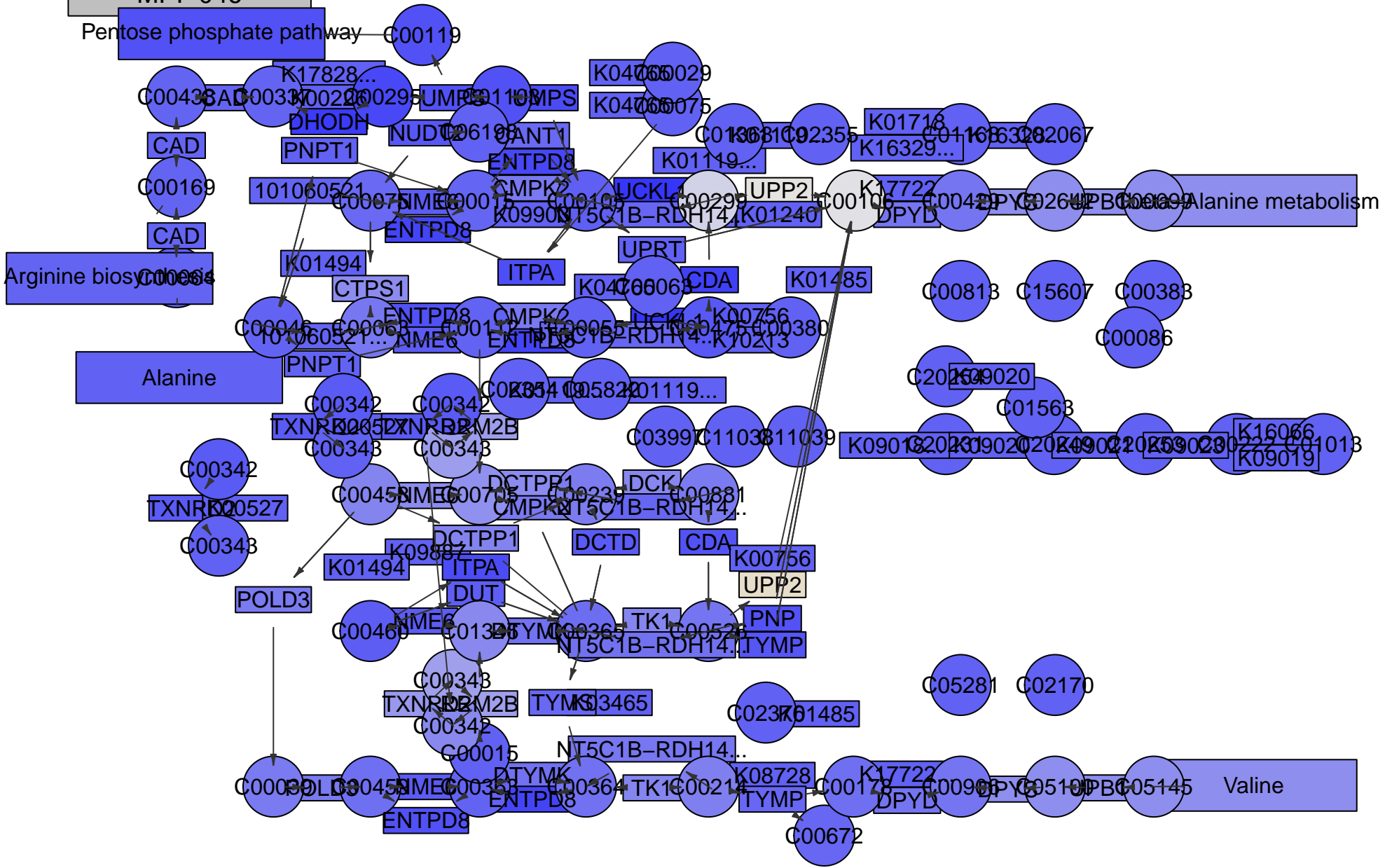
Pentose phosphate pathway
C00119





Pyrimidine metabolism
MPI-046

Pentose phosphate pathway
C00119



Arginine biosynthesis
C00614

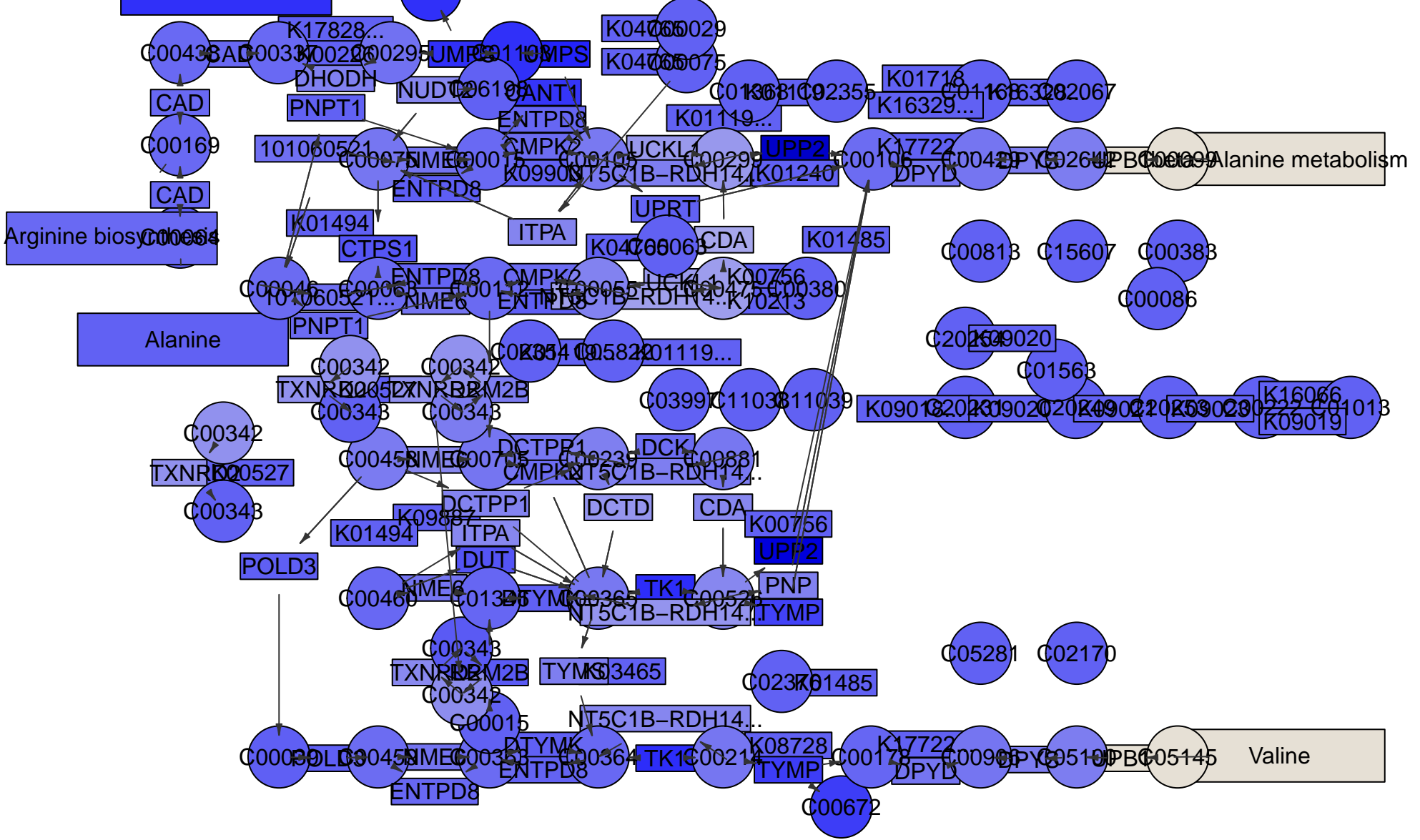
Alanine
C00342

Alanine metabolism
C00106

Valine
C05145

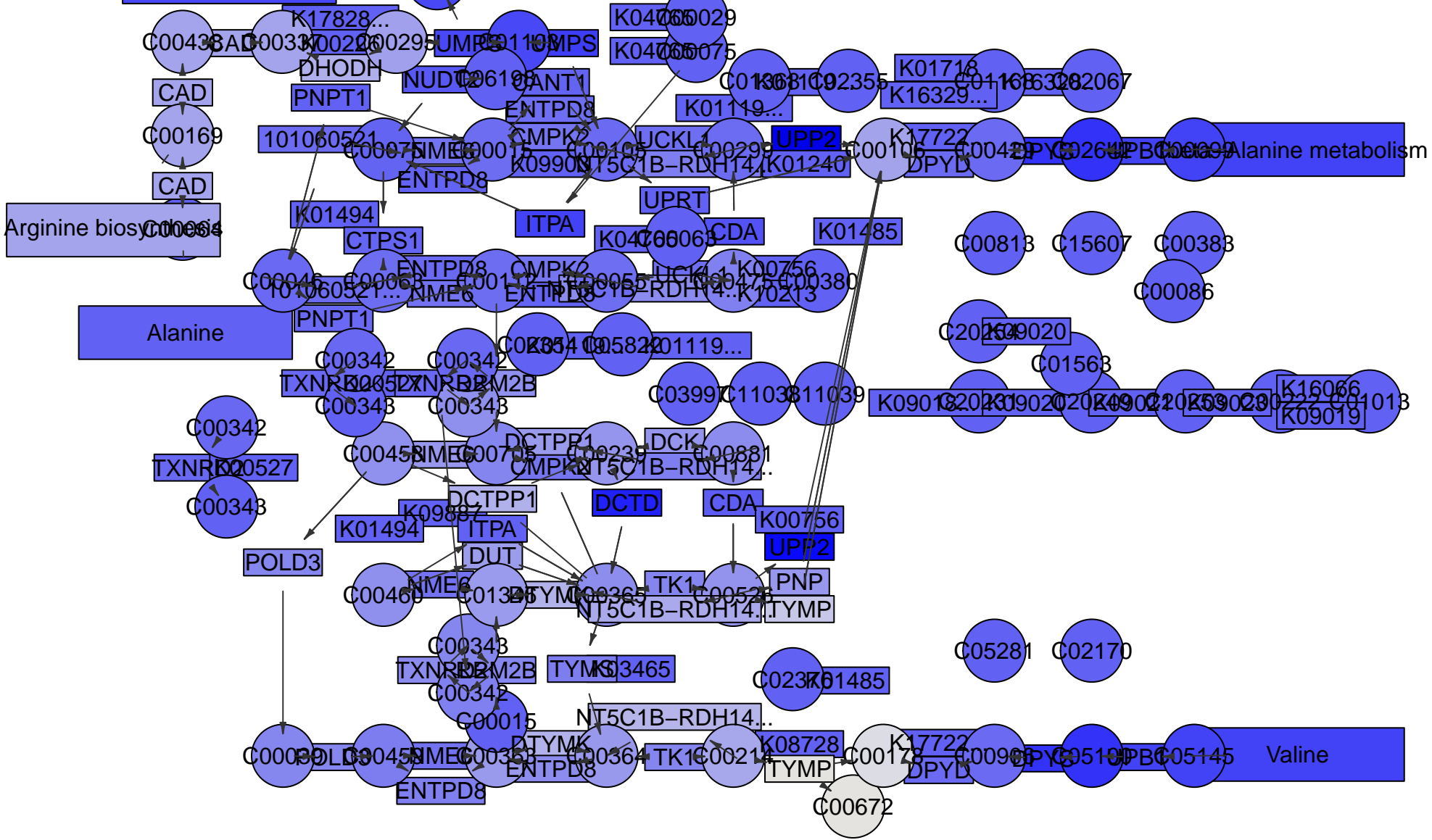
Pyrimidine metabolism
MPI-051

Pentose phosphate pathway C00119



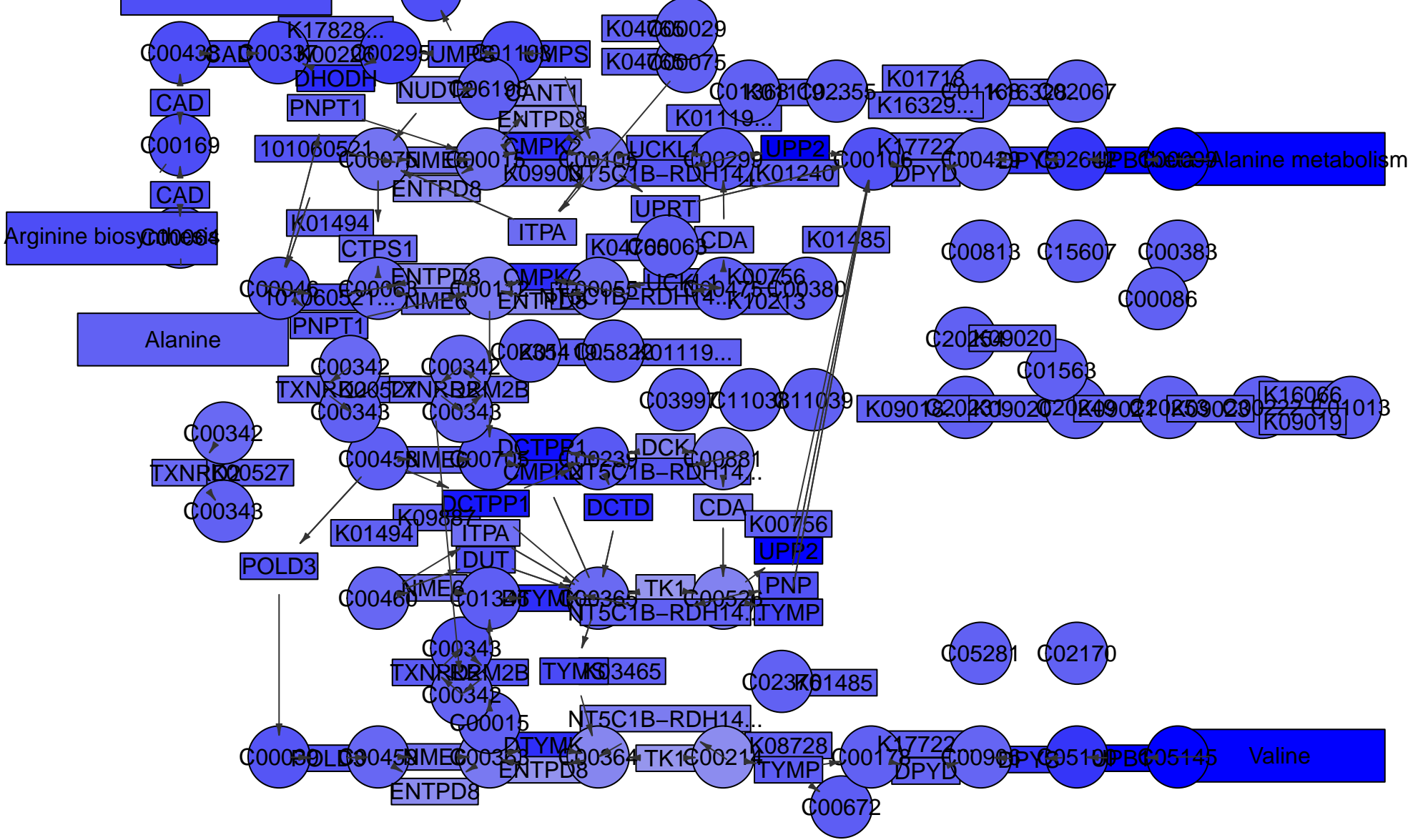
Pyrimidine metabolism
MPI-054

Pentose phosphate pathway C00119



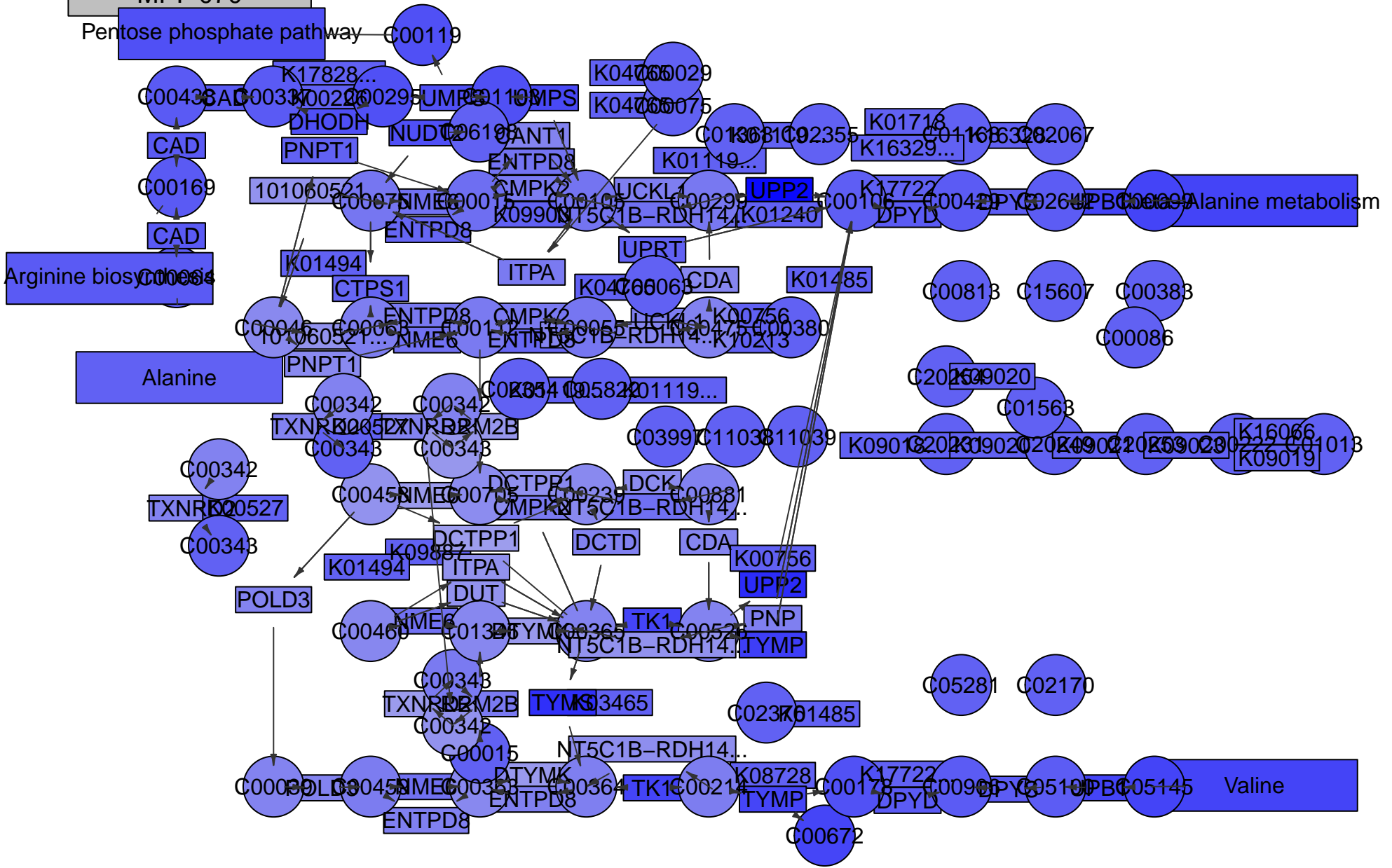
Pyrimidine metabolism
MPI-059

Pentose phosphate pathway C00119



Pyrimidine metabolism
MPI-070

Pentose phosphate pathway C00119



CAD

CAD

CAD

Arginine biosynthesis

Alanine

CAD

CAD

POLD3

CAD

CAD

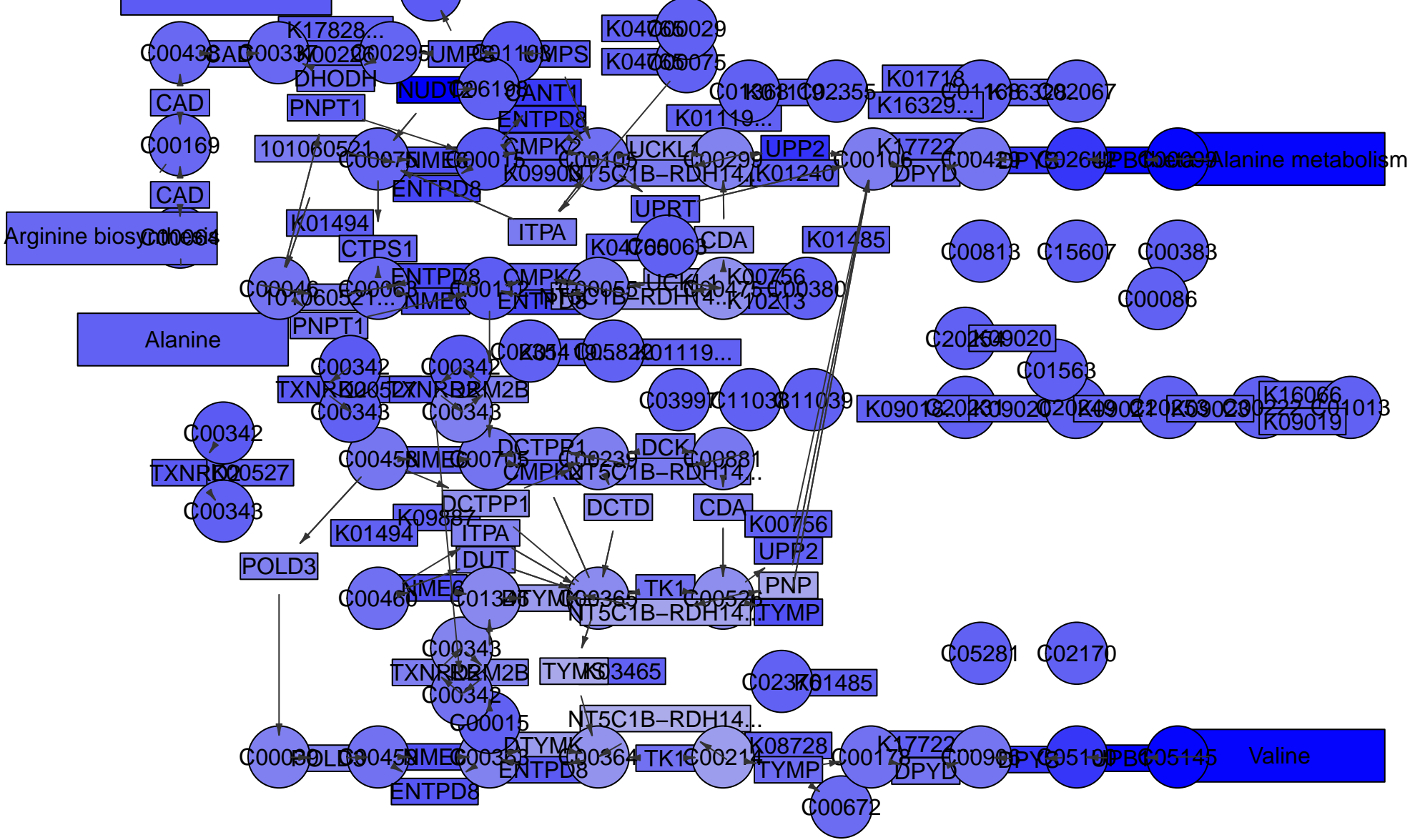
CAD

Alanine metabolism

Valine

Pyrimidine metabolism
MPI-072

Pentose phosphate pathway C00119



CAD

CAD

Arginine biosynthesis

Alanine

TXNRD1

POLD3

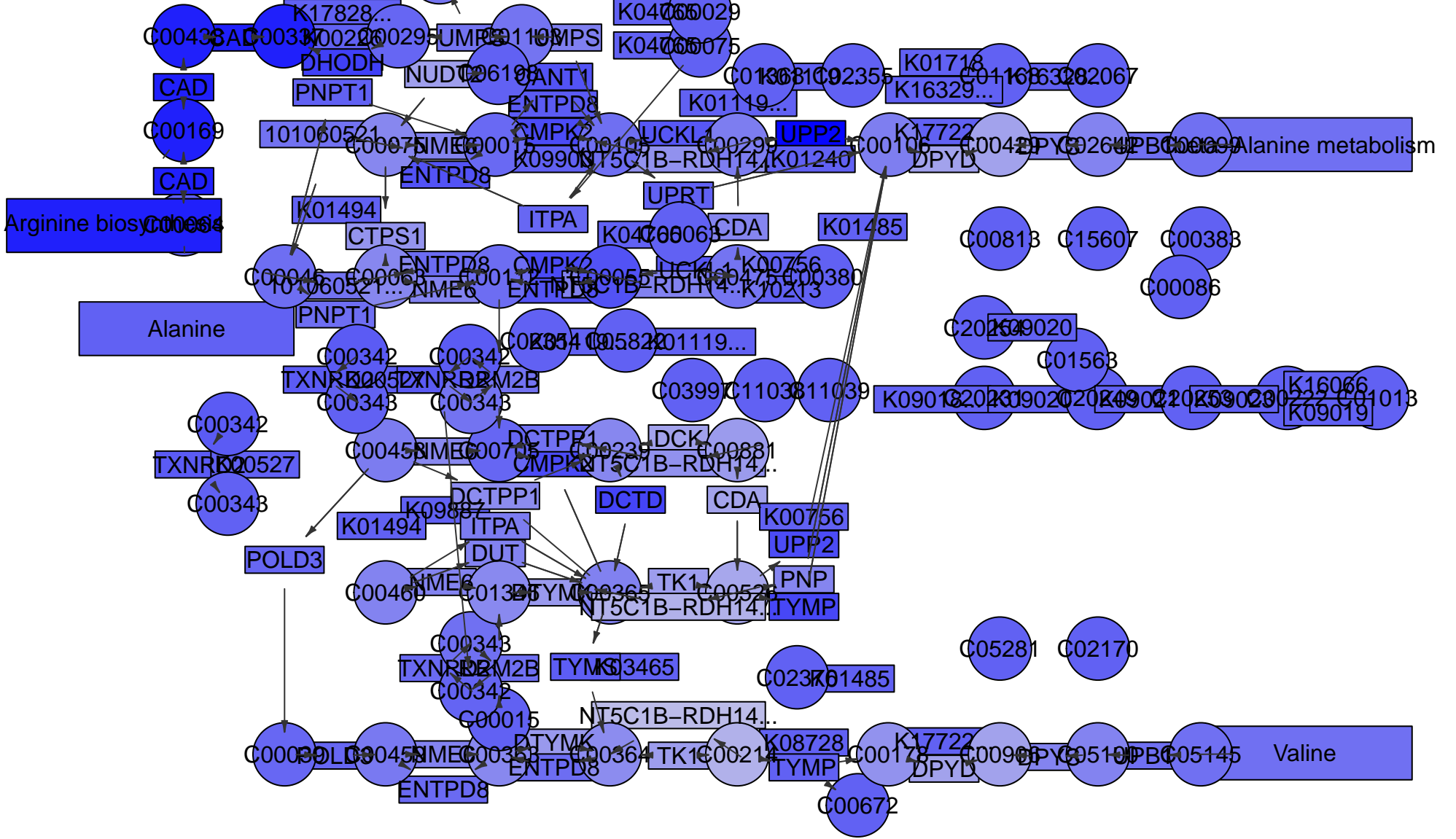
POLD3

Alanine metabolism

Valine

Pyrimidine metabolism
MPI-093

Pentose phosphate pathway C00119



CAD

CAD

Arginine biosynthesis

Alanine

TXNRD

POLD3

POLD3

Alanine metabolism

Valine

UPP2

DCTD

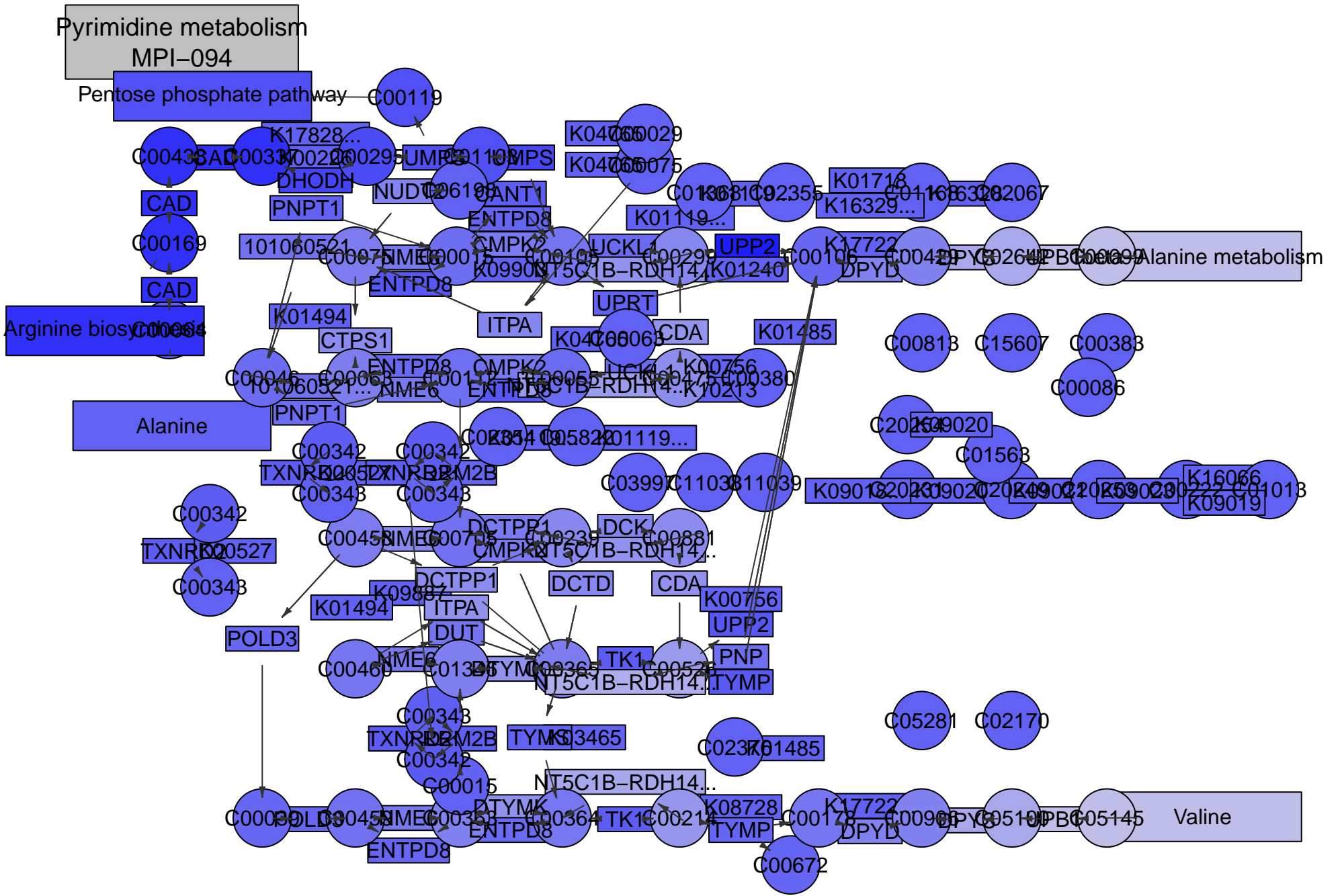
TYMS

UPP2

C02376

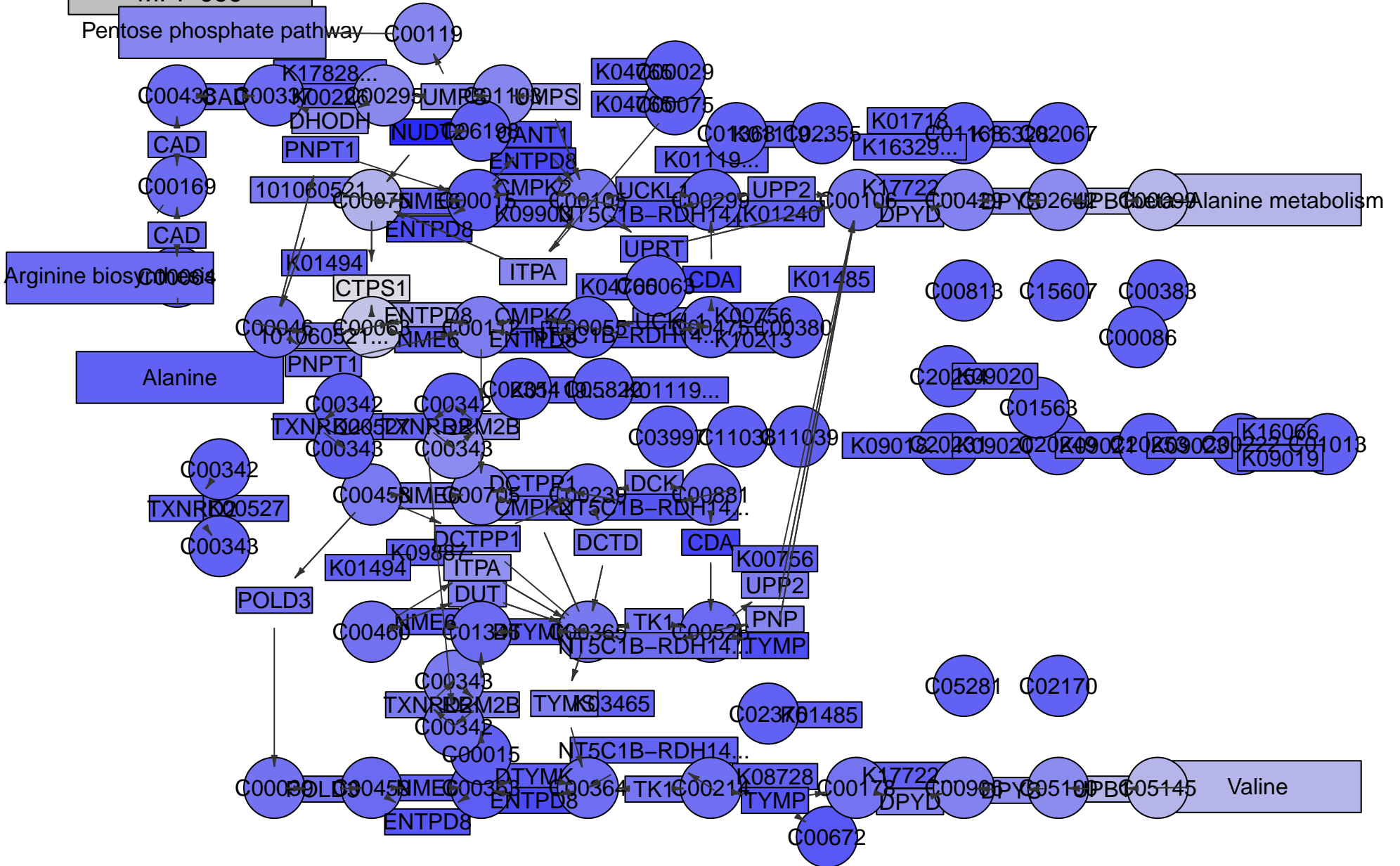
TYMP

C00672



Pyrimidine metabolism
MPI-099

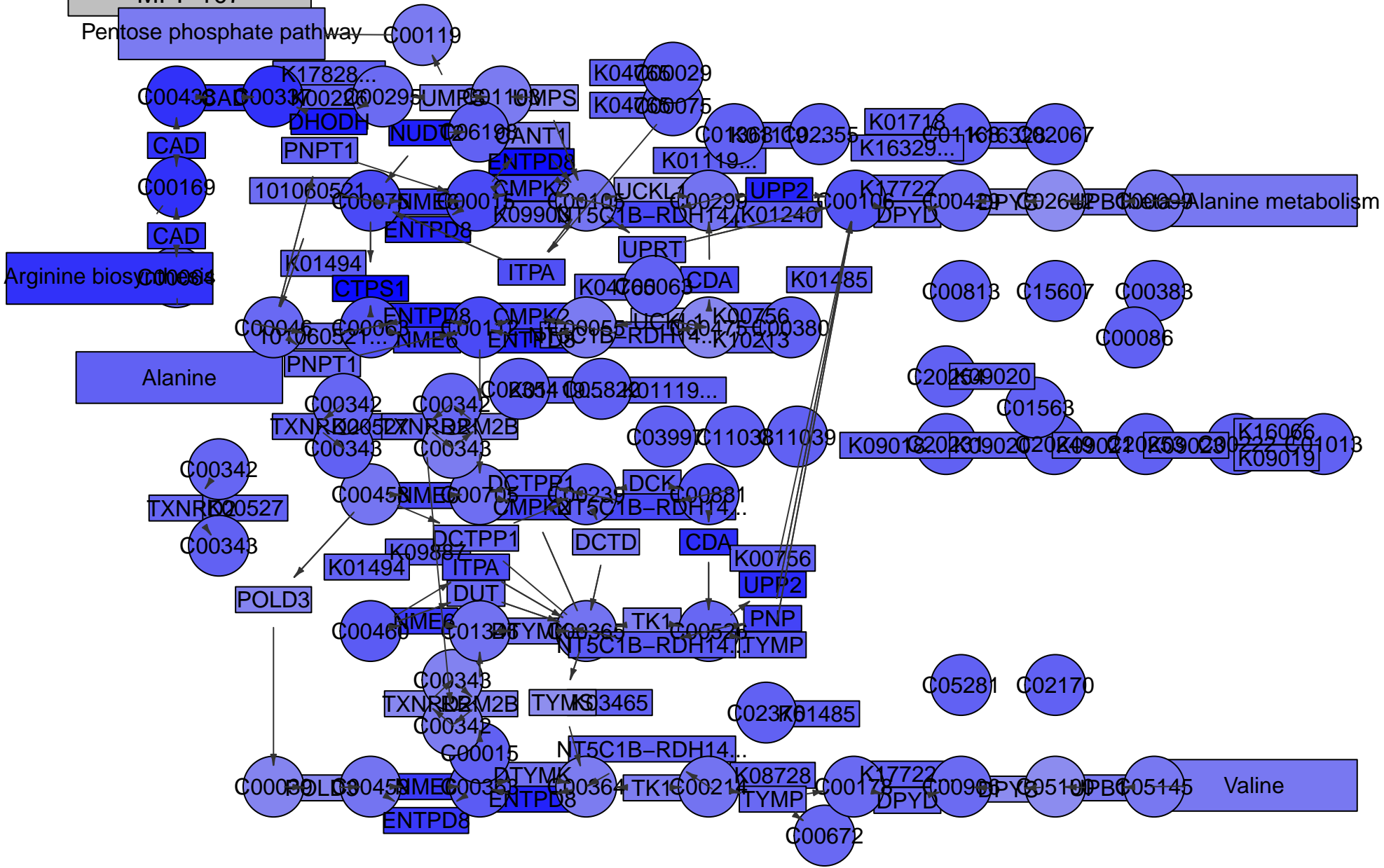
Pentose phosphate pathway C00119



Pyrimidine metabolism

MPI-107

Pentose phosphate pathway



C00438

CAD

C00169

CAD

C00614

Alanine

C00342

TXNR00527

C00348

POLD3

C00039

C00331

PHODH

C00071

ENTPD8

C00946

ENTPD8

PNPT1

C00342

TXNR00527

C00348

C00458

NME6

C00460

C00343

TXNR00527

C00342

C00015

ENTPD8

C00226

NUDC2

C00017

ENTPD8

C00945

ENTPD8

PNPT1

C00342

TXNR00527

C00348

C00458

NME6

C00460

C00343

TXNR00527

C00342

C00015

ENTPD8

C00295

UMPS

C00015

ENTPD8

C00945

ENTPD8

PNPT1

C00342

TXNR00527

C00348

C00458

NME6

C00460

C00343

TXNR00527

C00342

C00015

ENTPD8

C00110

UMPS

C00015

ENTPD8

C00945

ENTPD8

PNPT1

C00342

TXNR00527

C00348

C00458

NME6

C00460

C00343

TXNR00527

C00342

C00015

ENTPD8

C00029

UMPS

C00015

ENTPD8

C00945

ENTPD8

PNPT1

C00342

TXNR00527

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C00458

NME6

C00460

C00343

TXNR00527

C00342

C00015

ENTPD8

C00075

UMPS

C00015

ENTPD8

C00945

ENTPD8

PNPT1

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NME6

C00460

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TXNR00527

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C00458

NME6

C00460

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C00015

ENTPD8

C00029

UMPS

C00015

ENTPD8

C00945

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C00342

TXNR00527

C00348

C00458

NME6

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C00015

ENTPD8

C00029

UMPS

C00015

ENTPD8

C00945

ENTPD8

PNPT1

C00342

TXNR00527

C00348

C00458

NME6

C00460

C00343

TXNR00527

C00342

C00015

ENTPD8

C00029

UMPS

C00015

ENTPD8

C00945

ENTPD8

PNPT1

C00342

TXNR00527

C00348

C00458

NME6

C00460

C00343

TXNR00527

C00342

C00015

ENTPD8

C00029

UMPS

C00015

ENTPD8

C00945

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C00458

NME6

C00460

C00343

TXNR00527

C00342

C00015

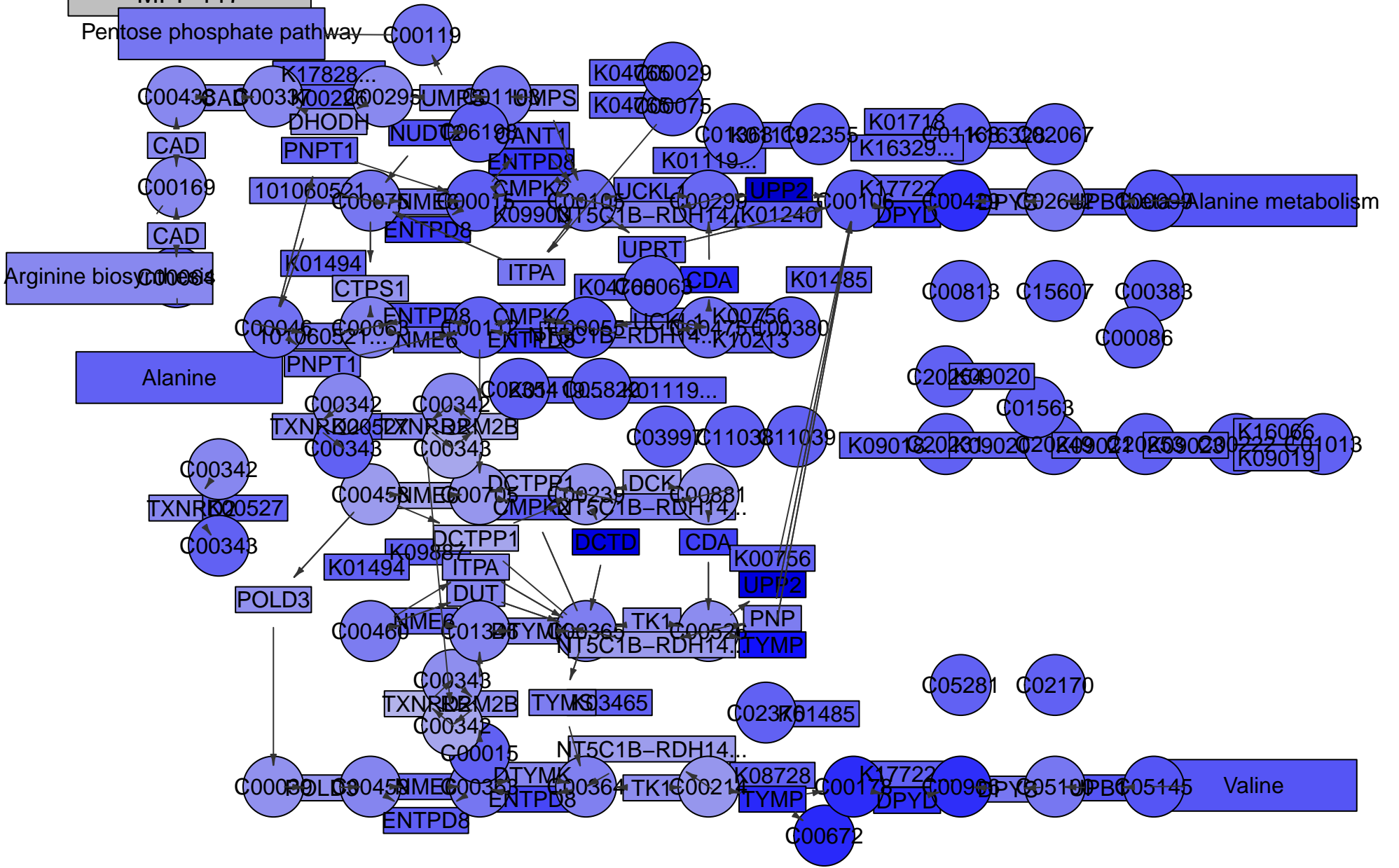
ENTPD8

Alanine metabolism

Valine

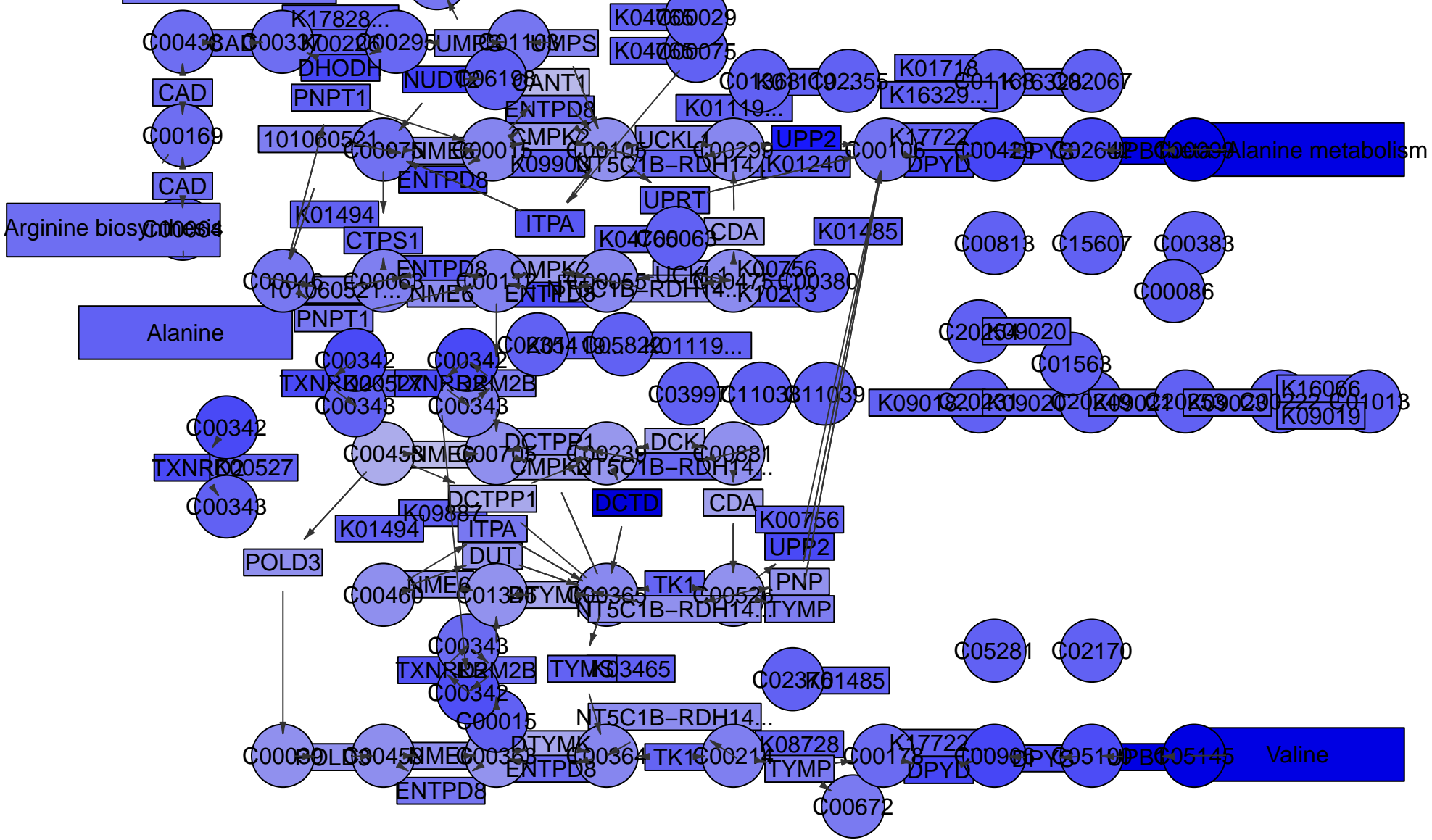
Pyrimidine metabolism
MPI-117

Pentose phosphate pathway C00119



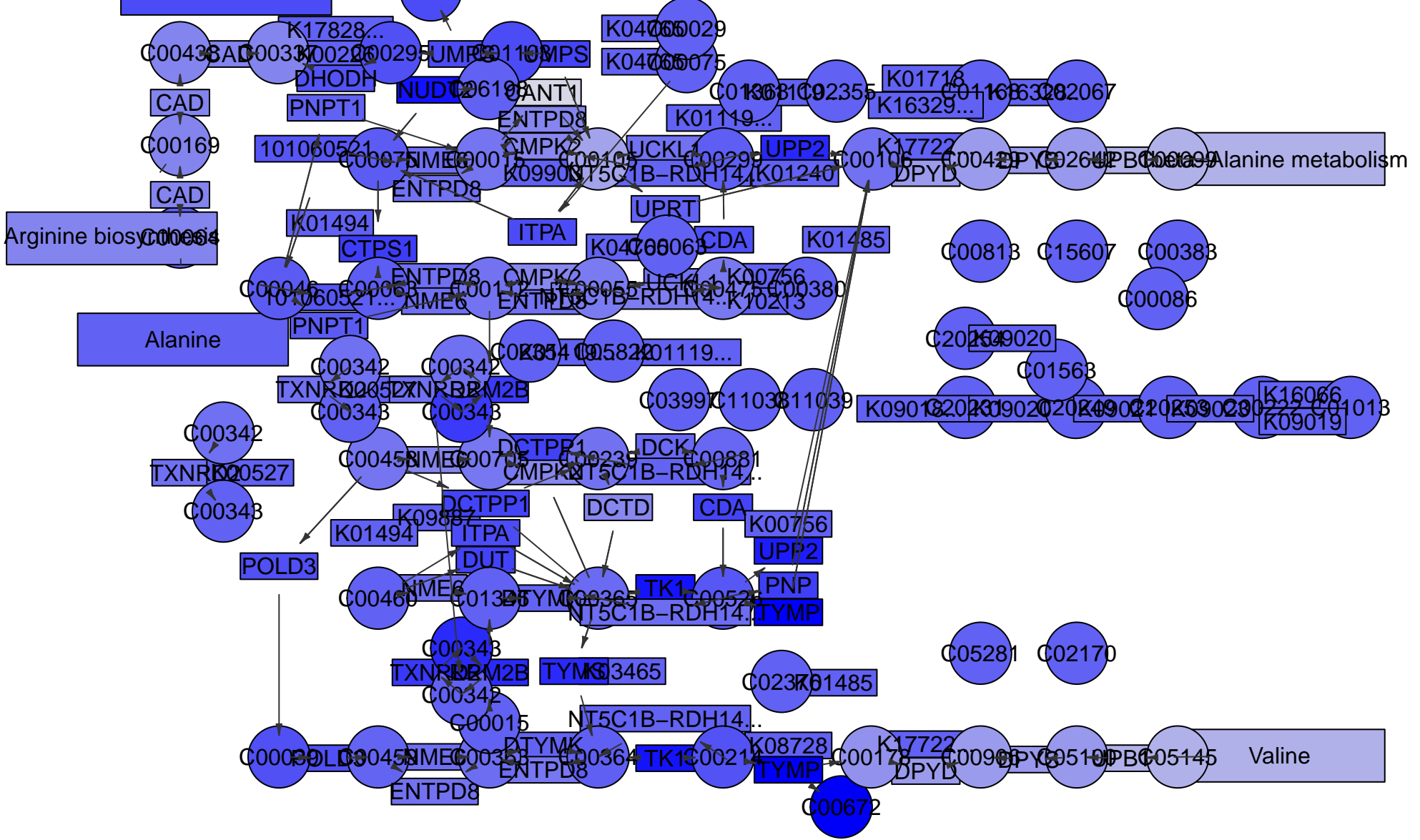
Pyrimidine metabolism
MPI-148

Pentose phosphate pathway C00119



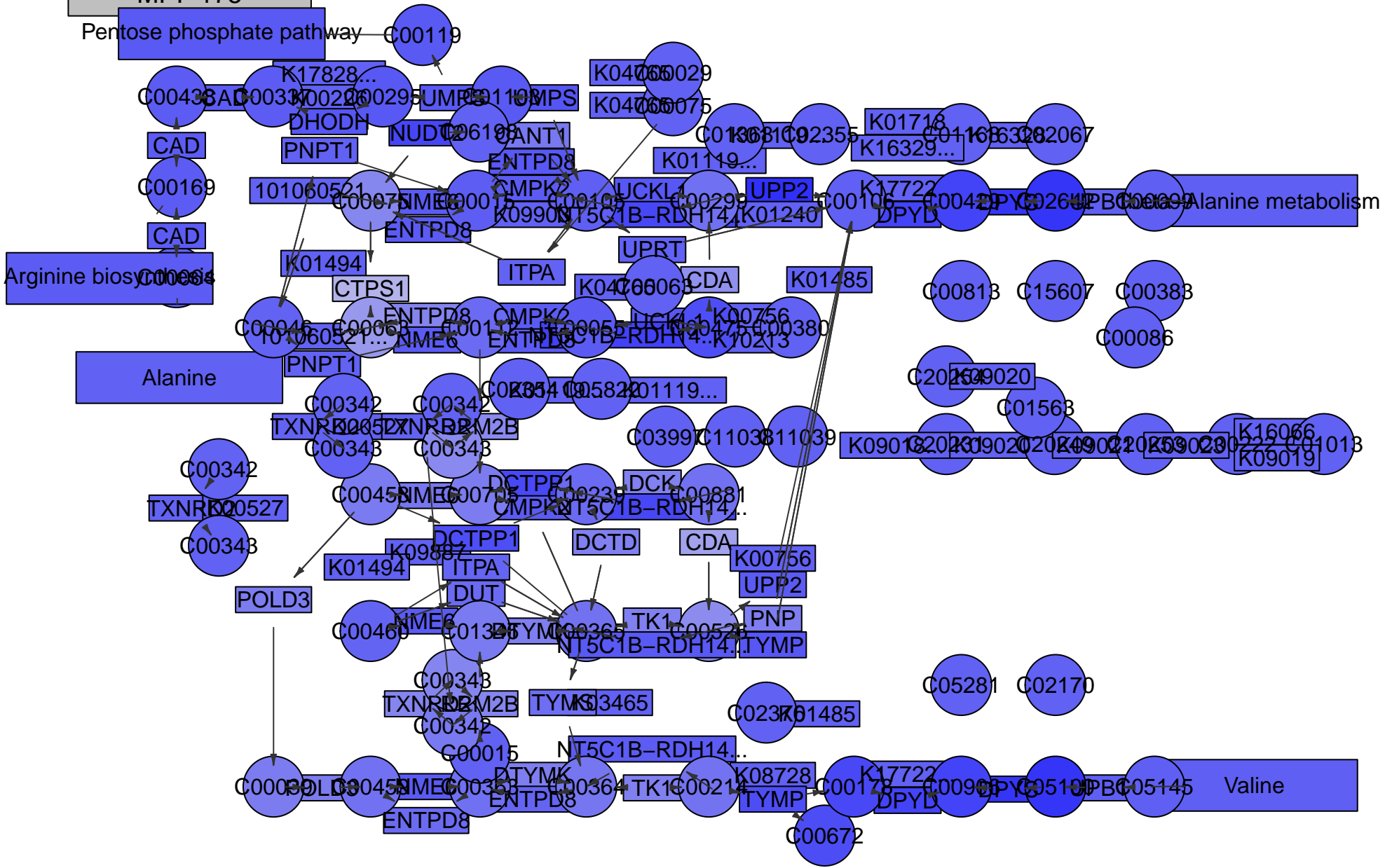
Pyrimidine metabolism
MPI-169

Pentose phosphate pathway C00119



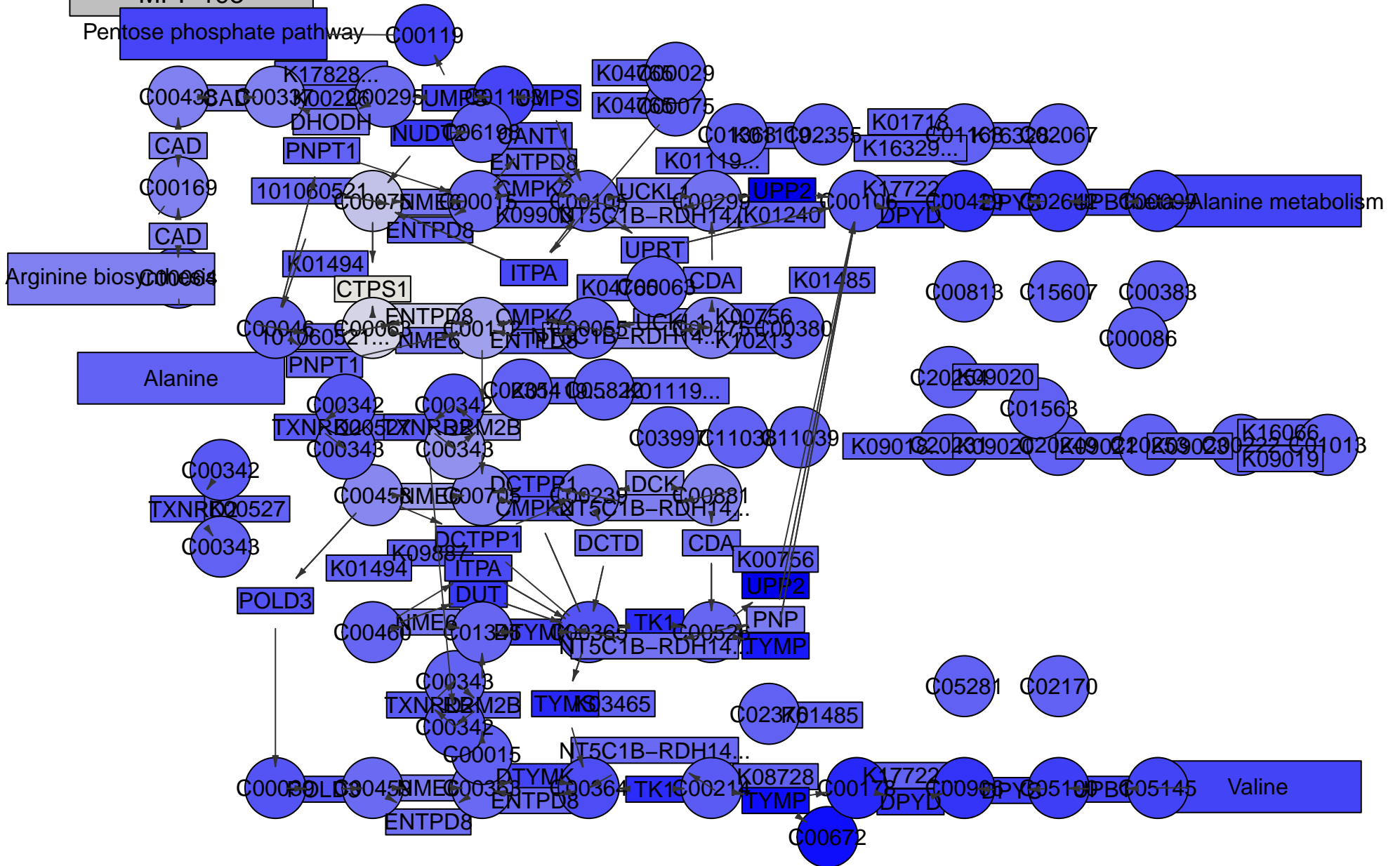
Pyrimidine metabolism
MPI-175

Pentose phosphate pathway
C00119



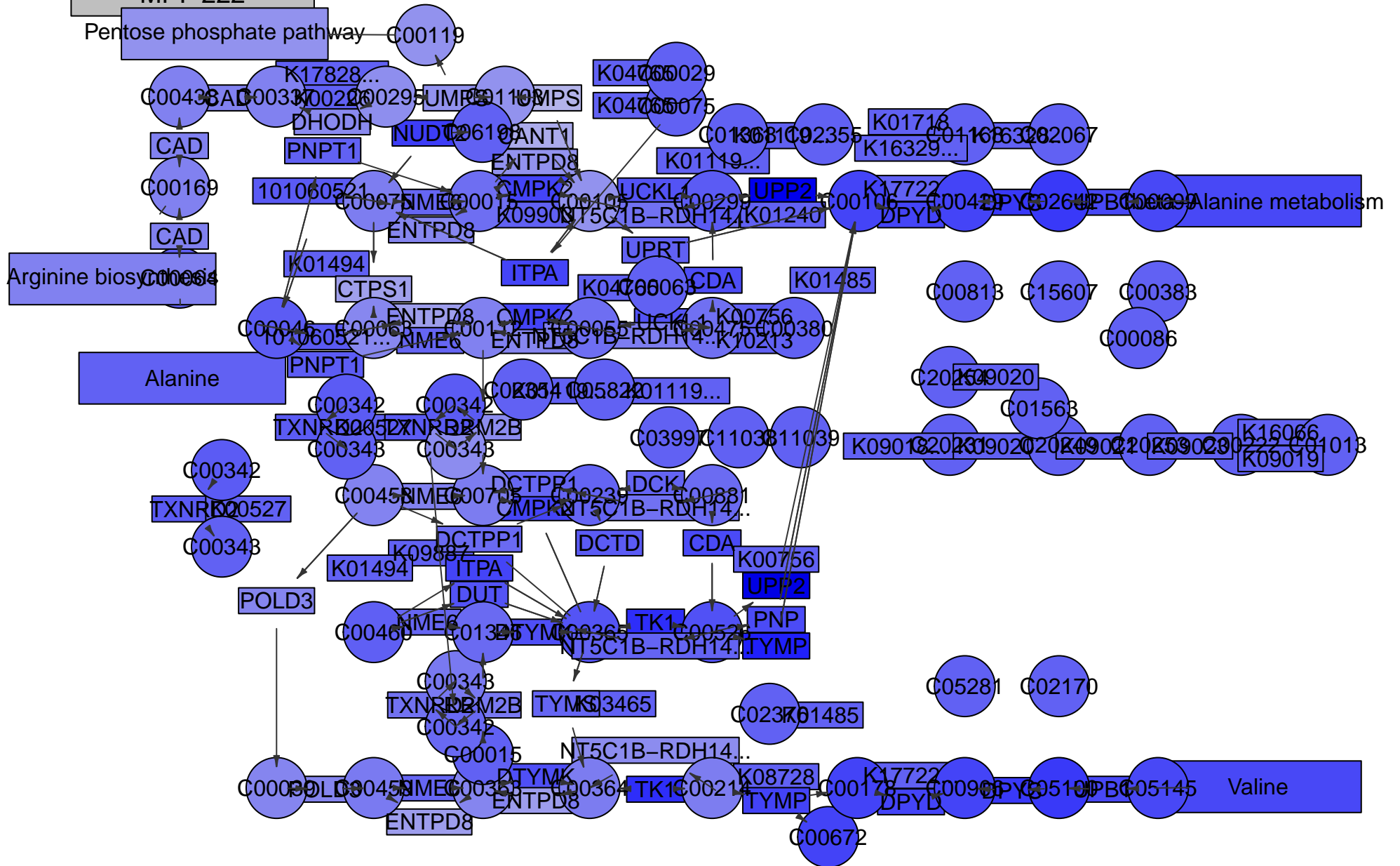
Pyrimidine metabolism
MPI-193

Pentose phosphate pathway C00119



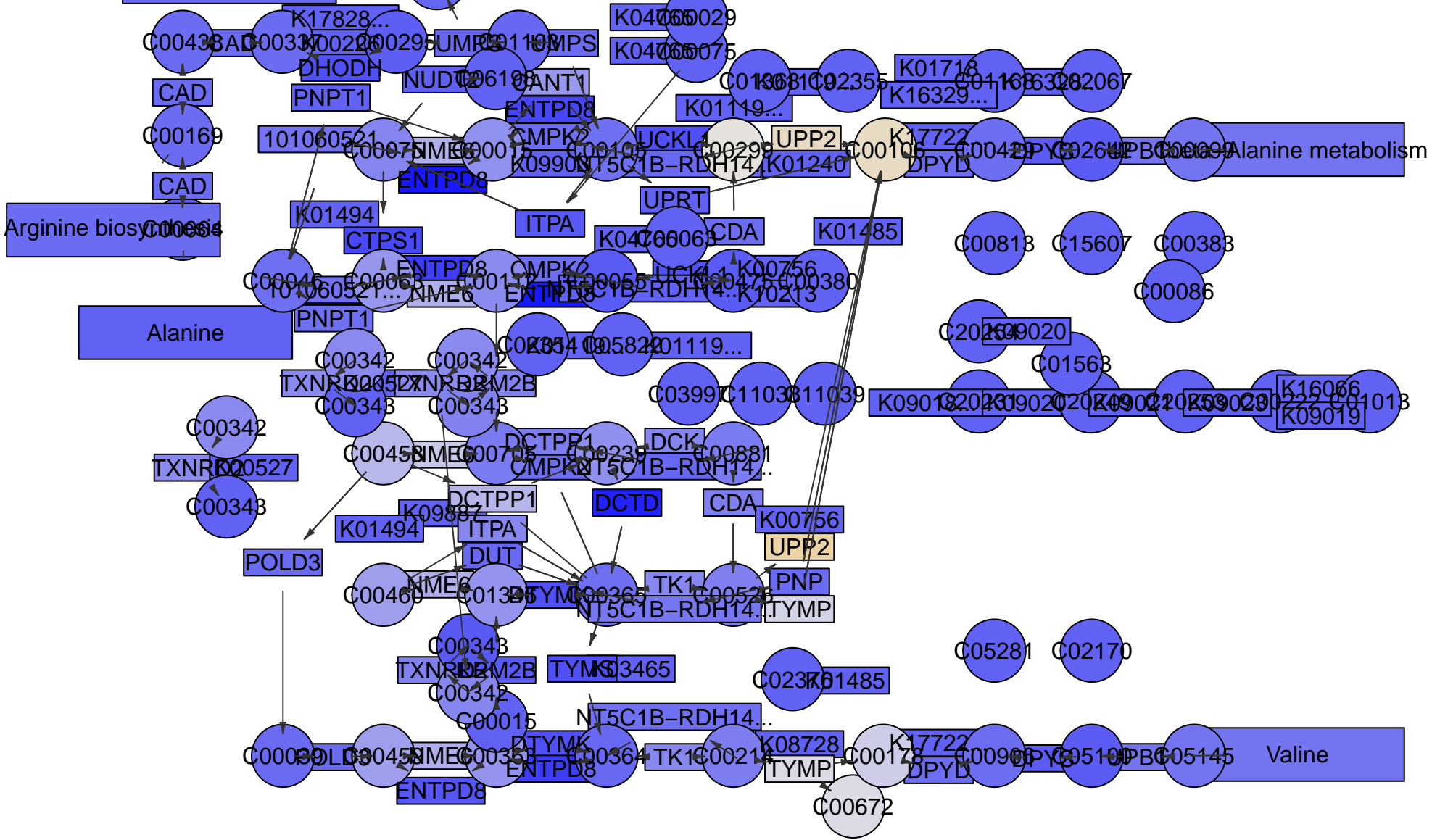
Pyrimidine metabolism
MPI-222

Pentose phosphate pathway



Pyrimidine metabolism
MPI-225

Pentose phosphate pathway C00119



Arginine biosynthesis C00614

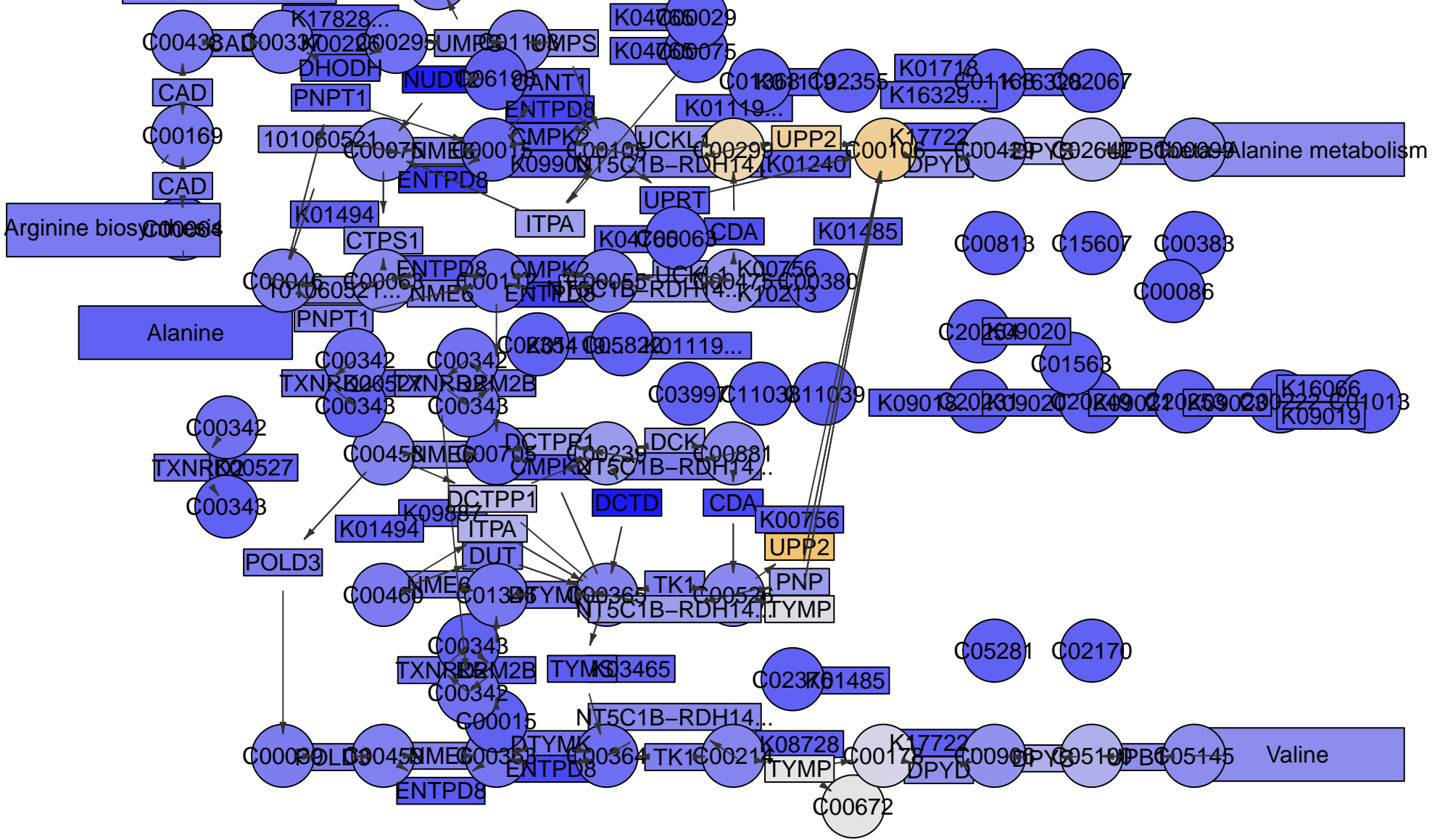
Alanine

Alanine metabolism

Valine

Pyrimidine metabolism
MPI-242

Pentose phosphate pathway C00119

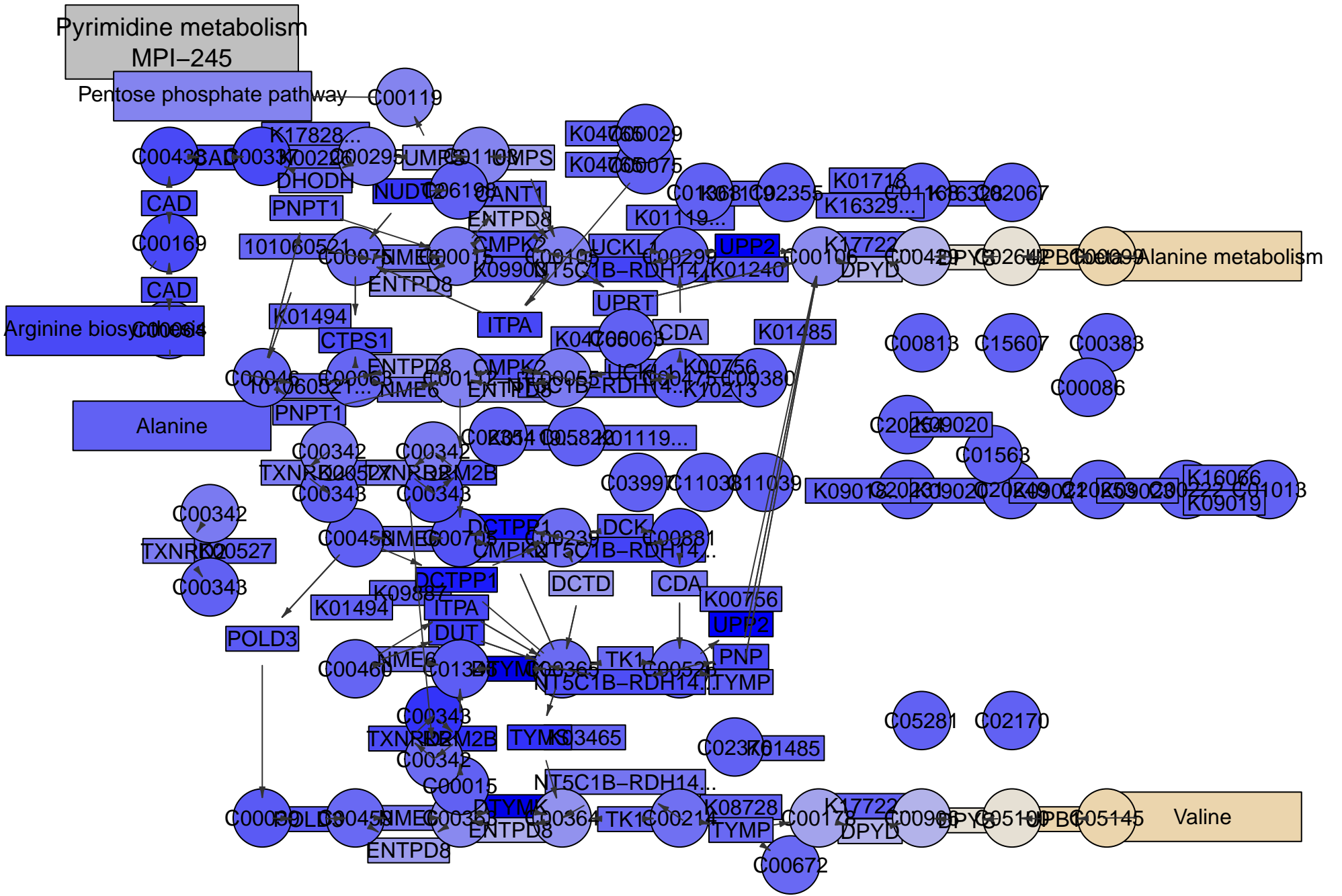


Alanine metabolism

Arginine biosynthesis

Alanine

Valine

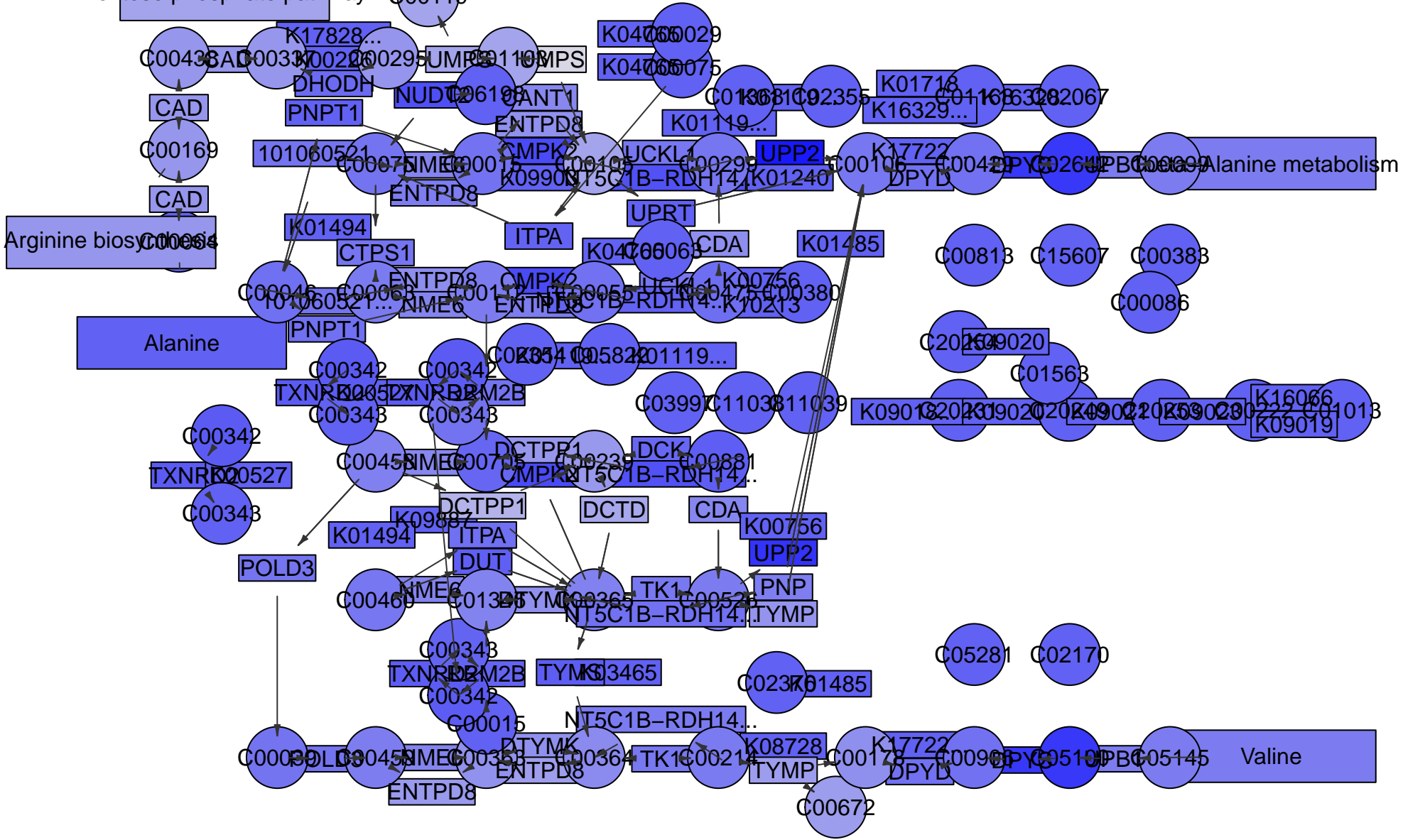


Pyrimidine metabolism

MPI-250

Pentose phosphate pathway

C00119



Alanine metabolism

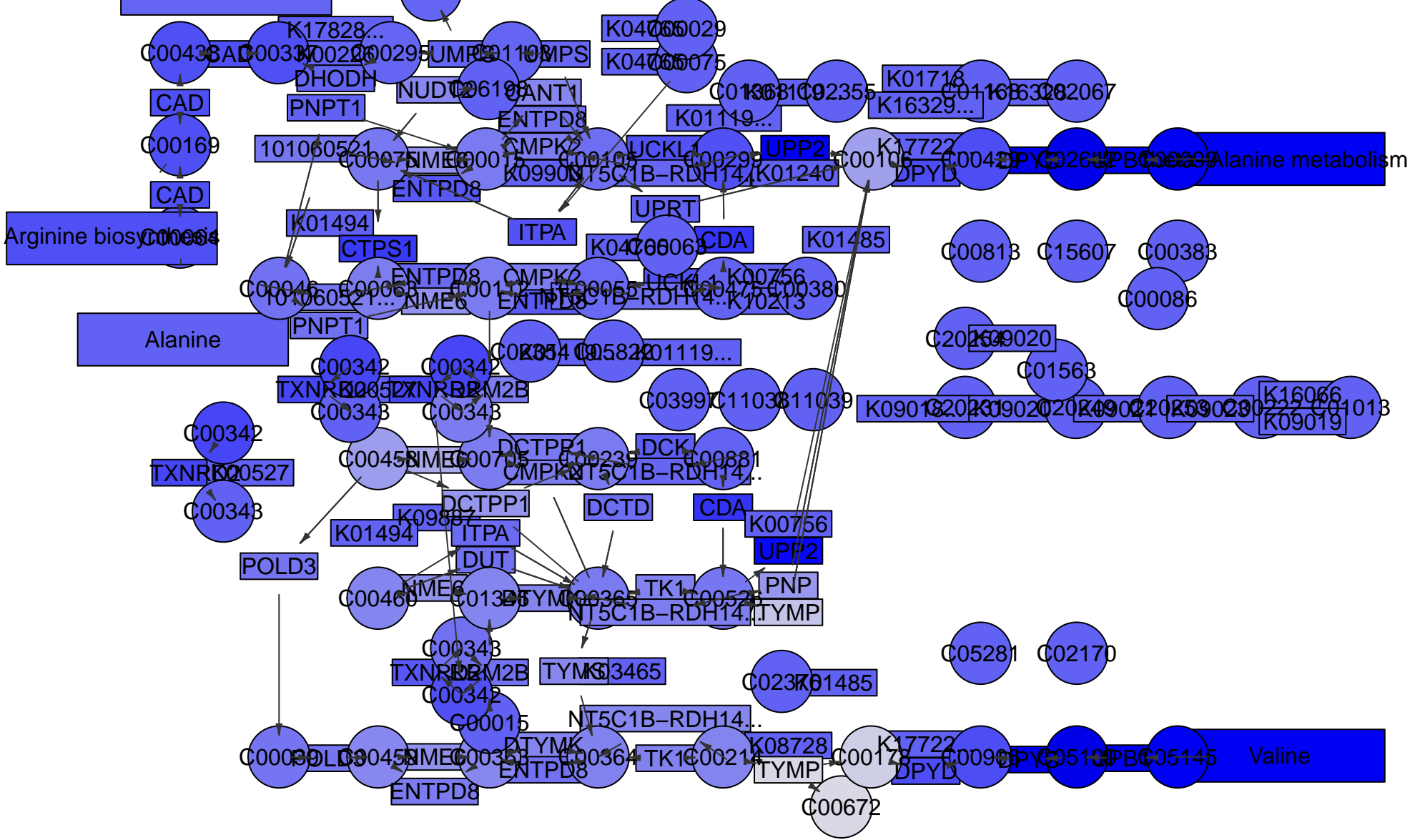
Arginine biosynthesis

Alanine

Valine

Pyrimidine metabolism
MPI-010

Pentose phosphate pathway C00119



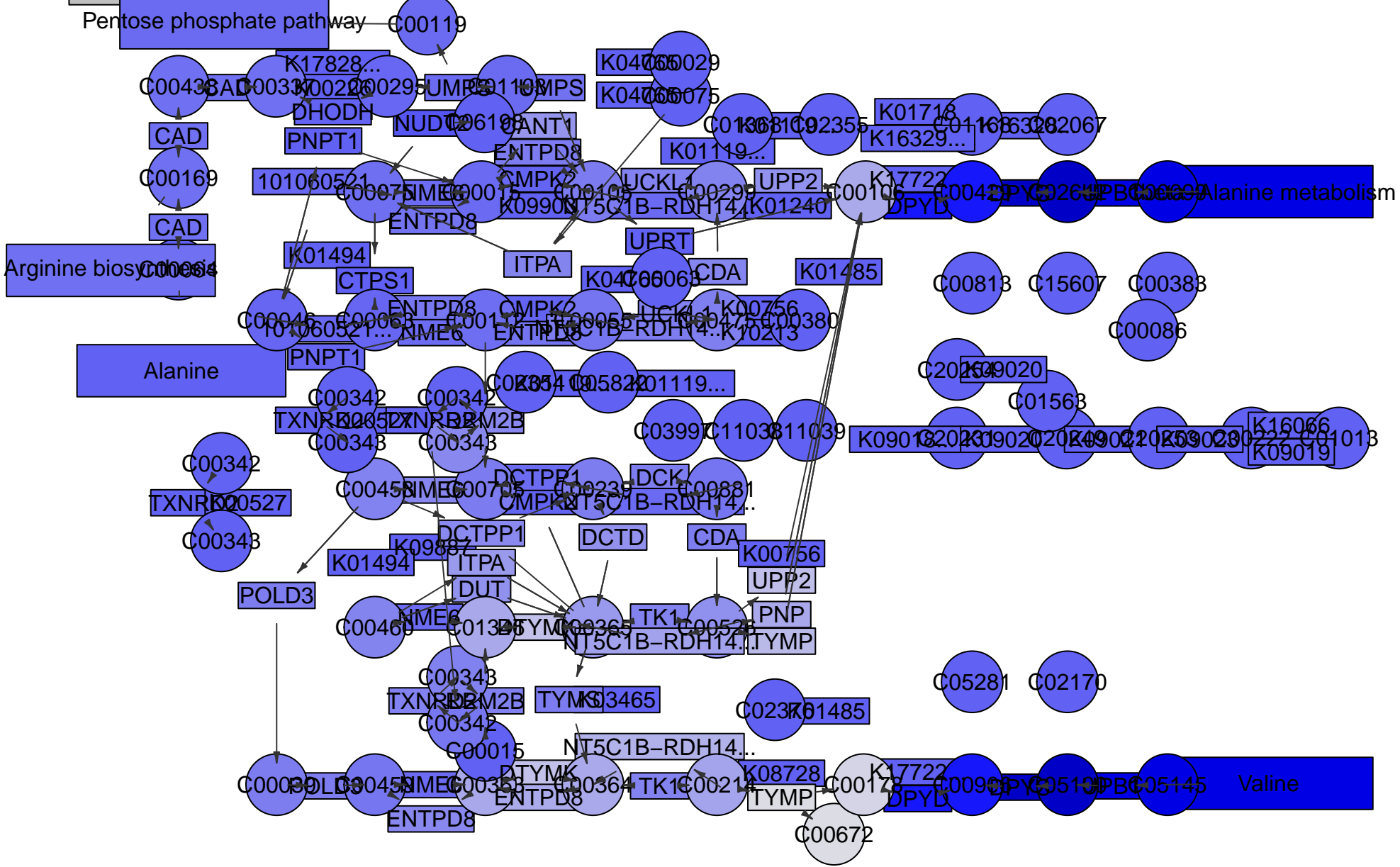
Alanine metabolism

Arginine biosynthesis

Alanine

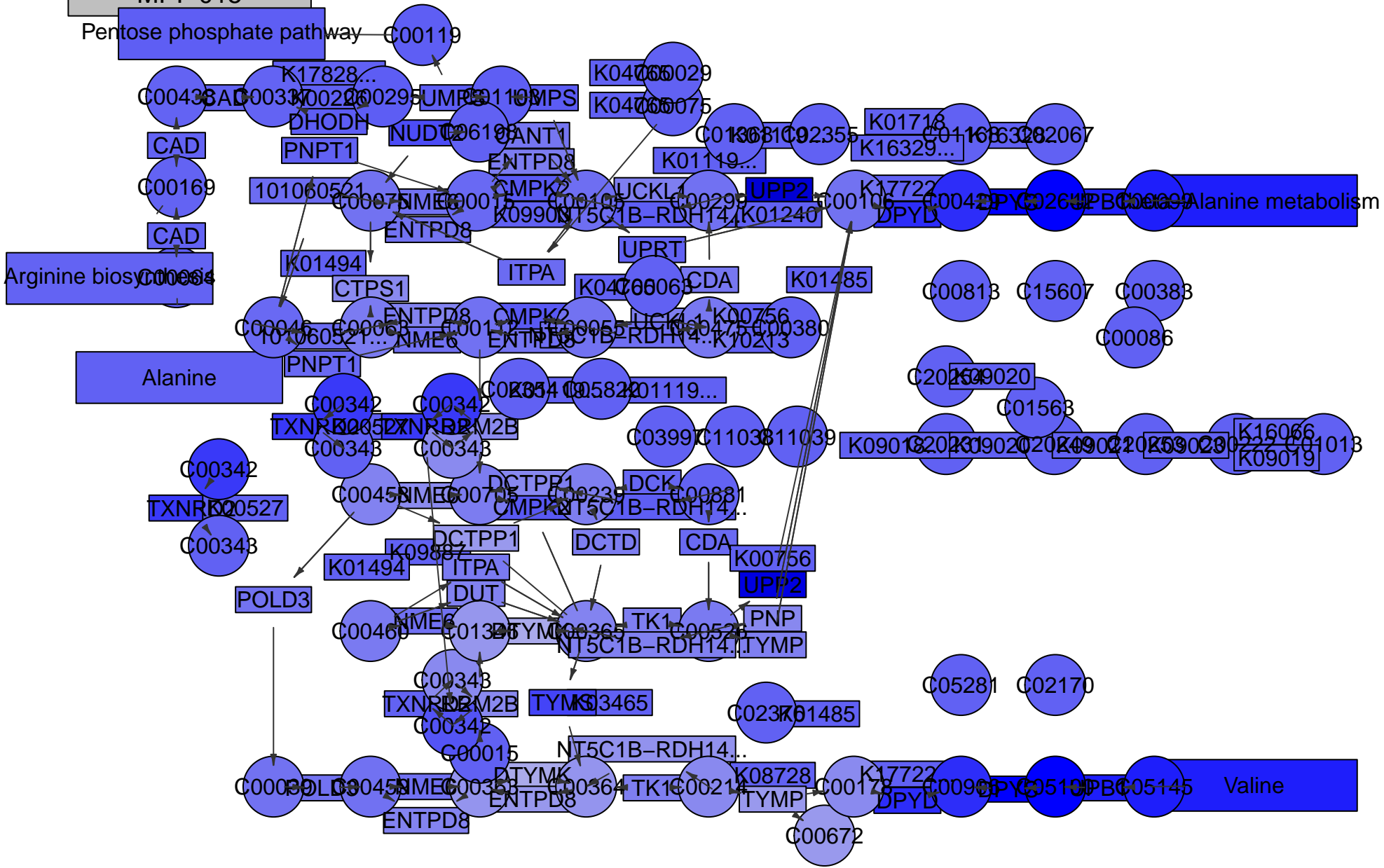
Valine

Pyrimidine metabolism
MPI-014



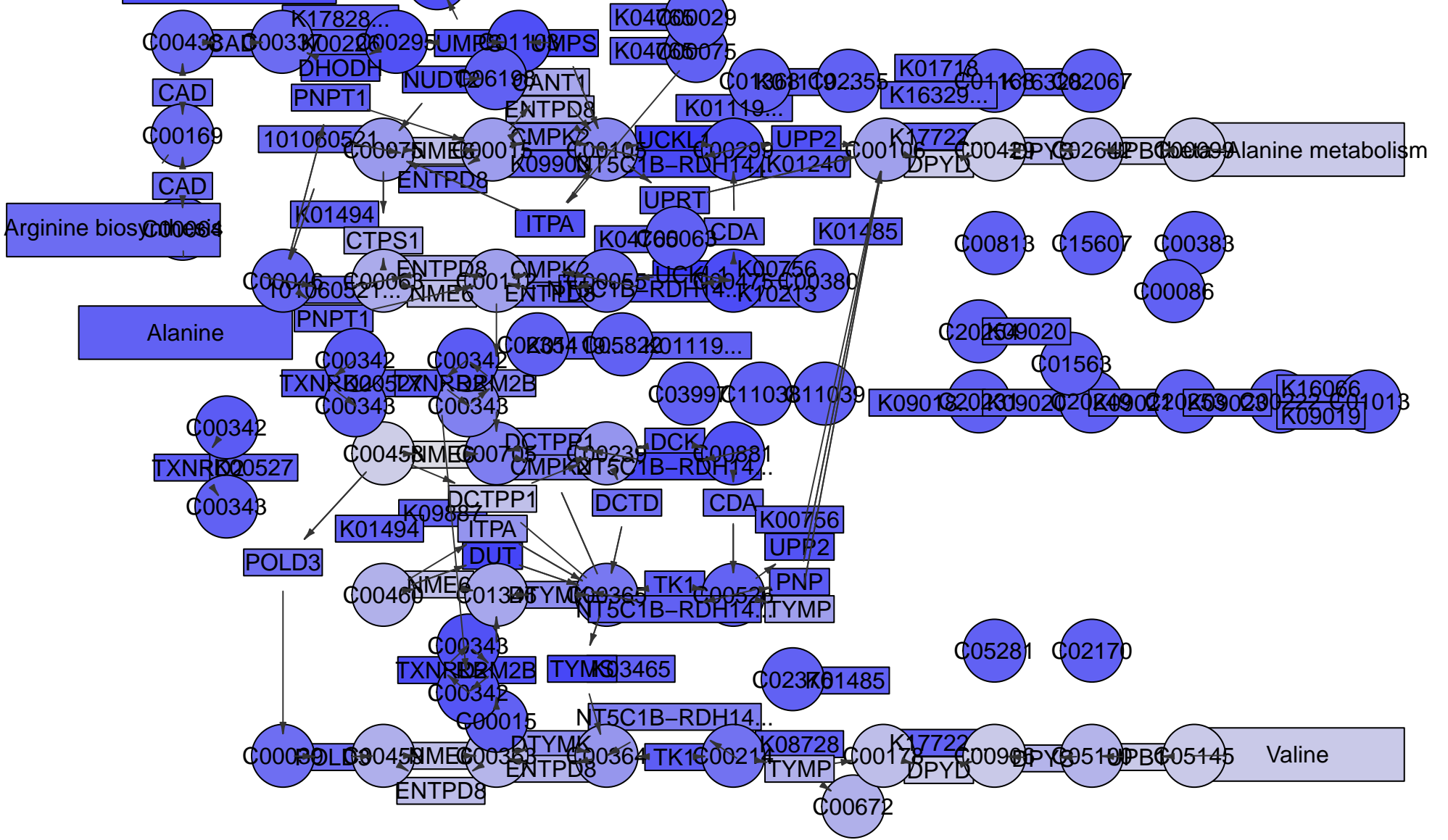
Pyrimidine metabolism
MPI-015

Pentose phosphate pathway C00119



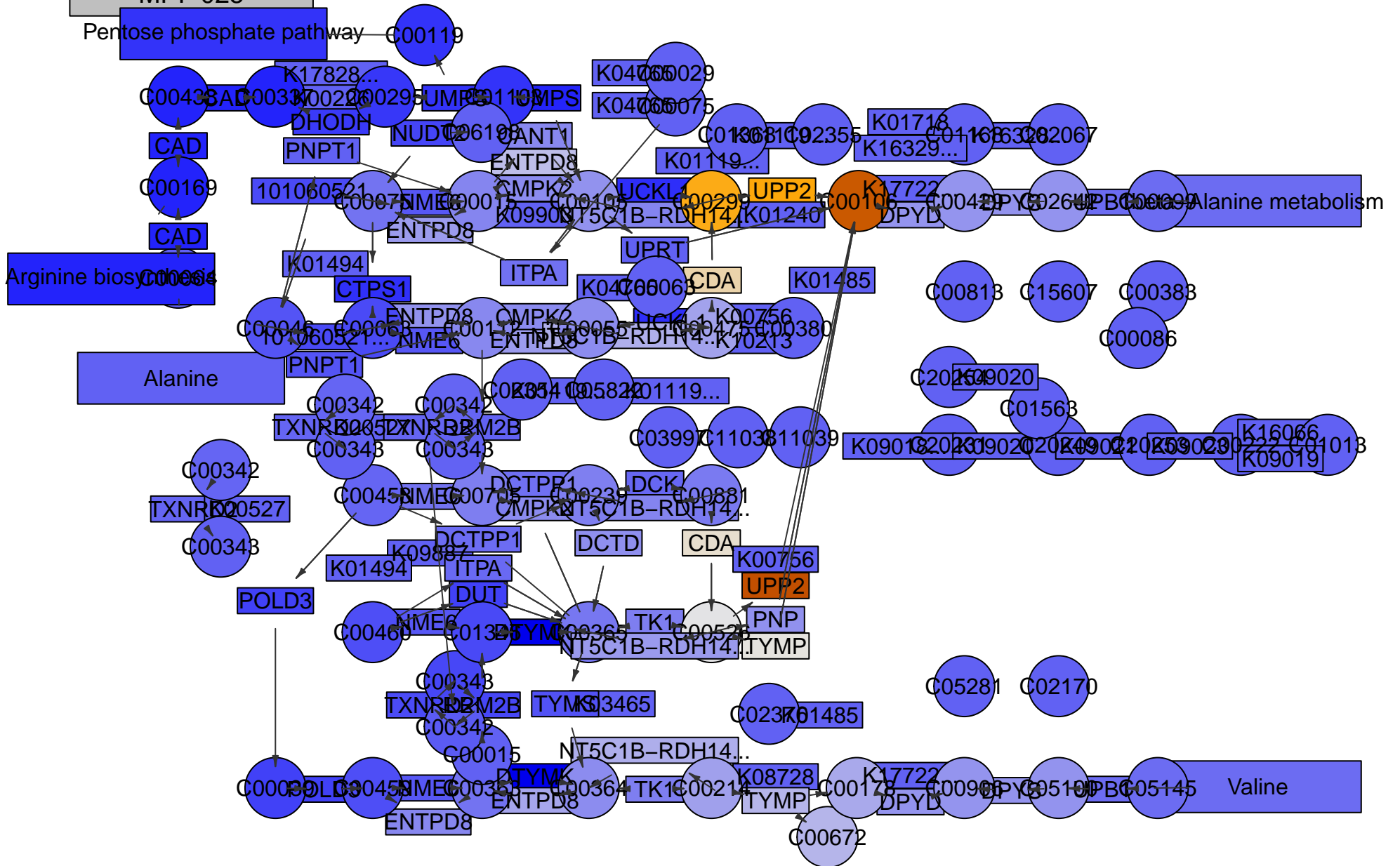
Pyrimidine metabolism
MPI-021

Pentose phosphate pathway C00119



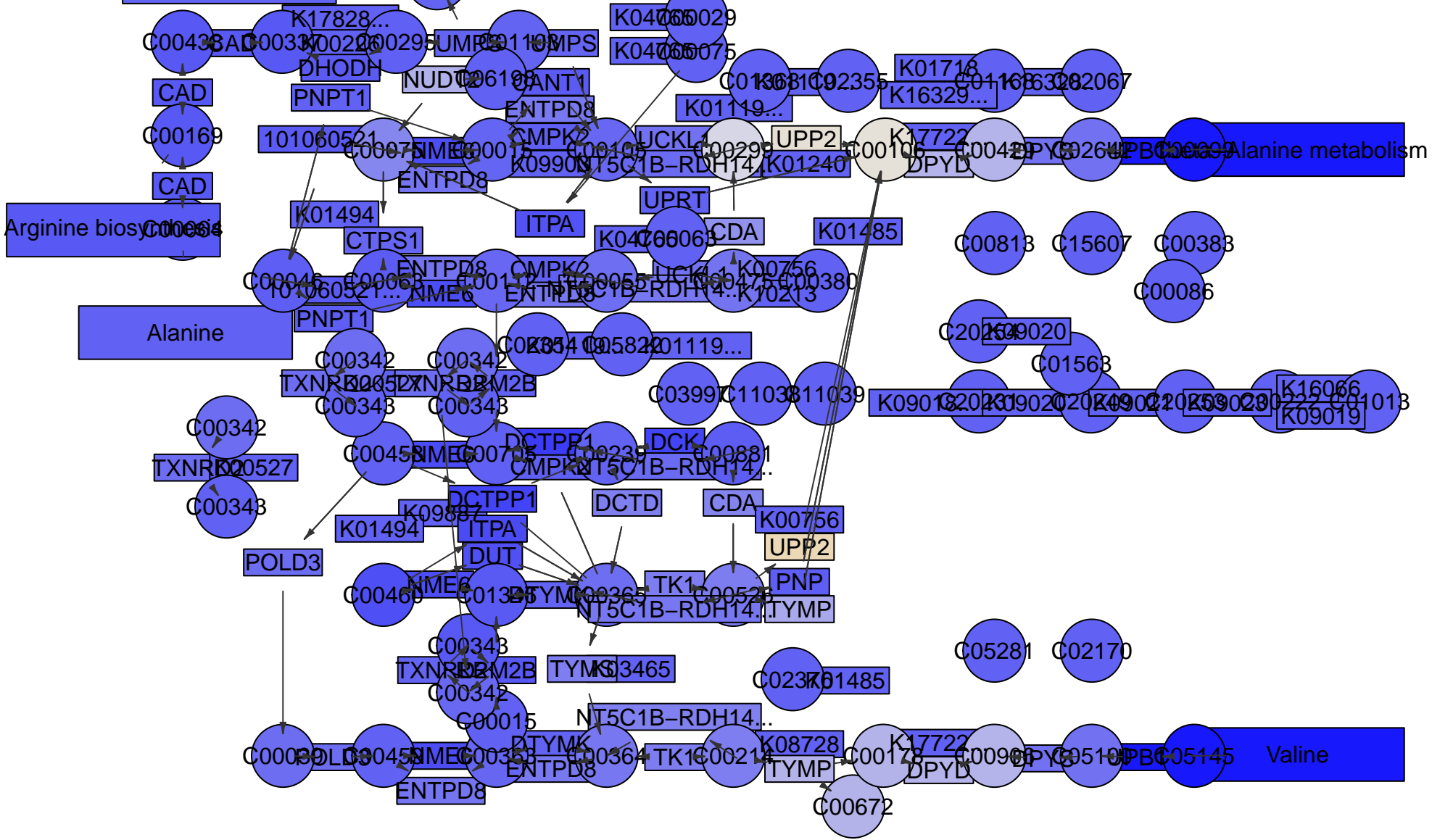
Pyrimidine metabolism
MPI-025

Pentose phosphate pathway



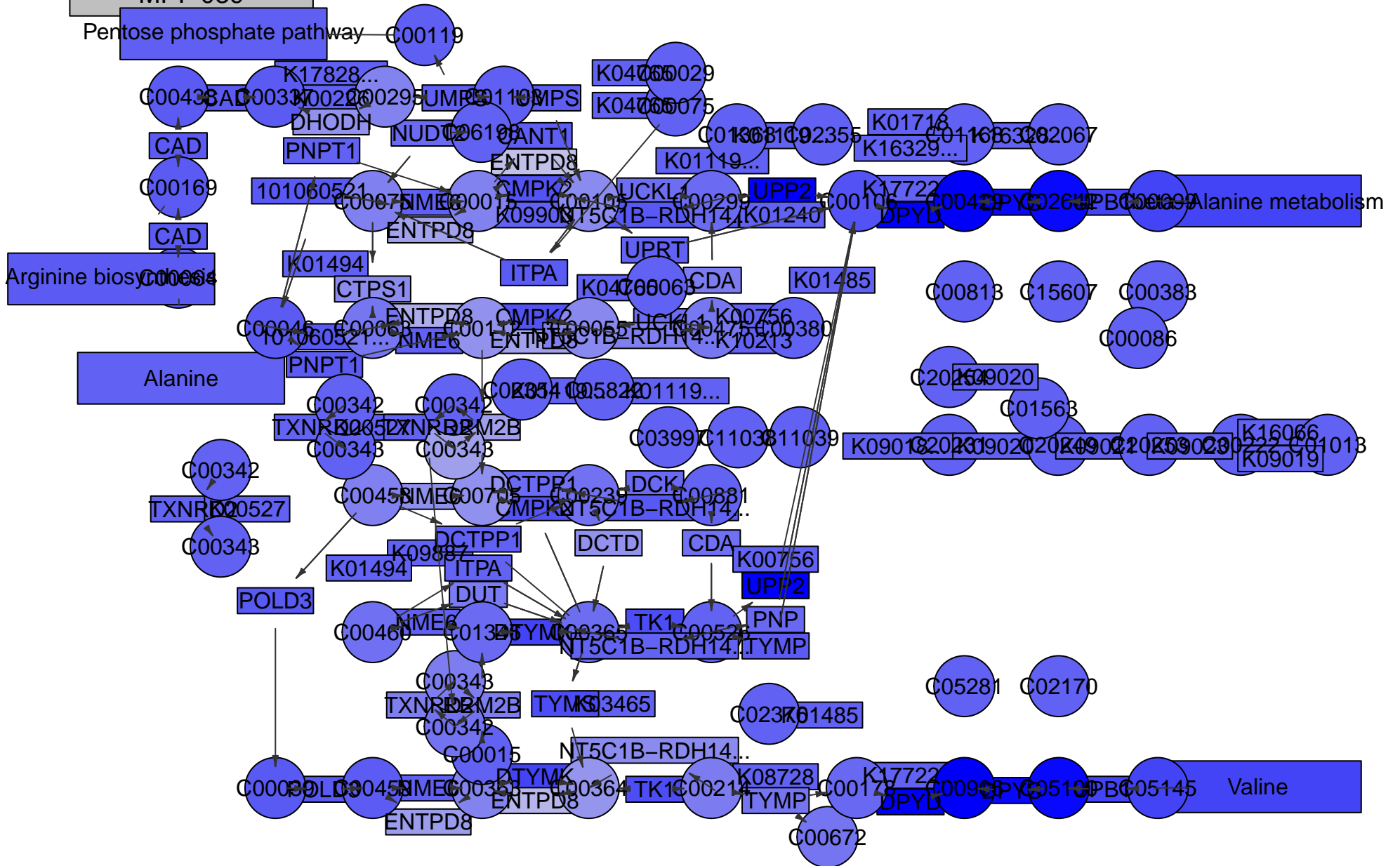
Pyrimidine metabolism
MPI-029

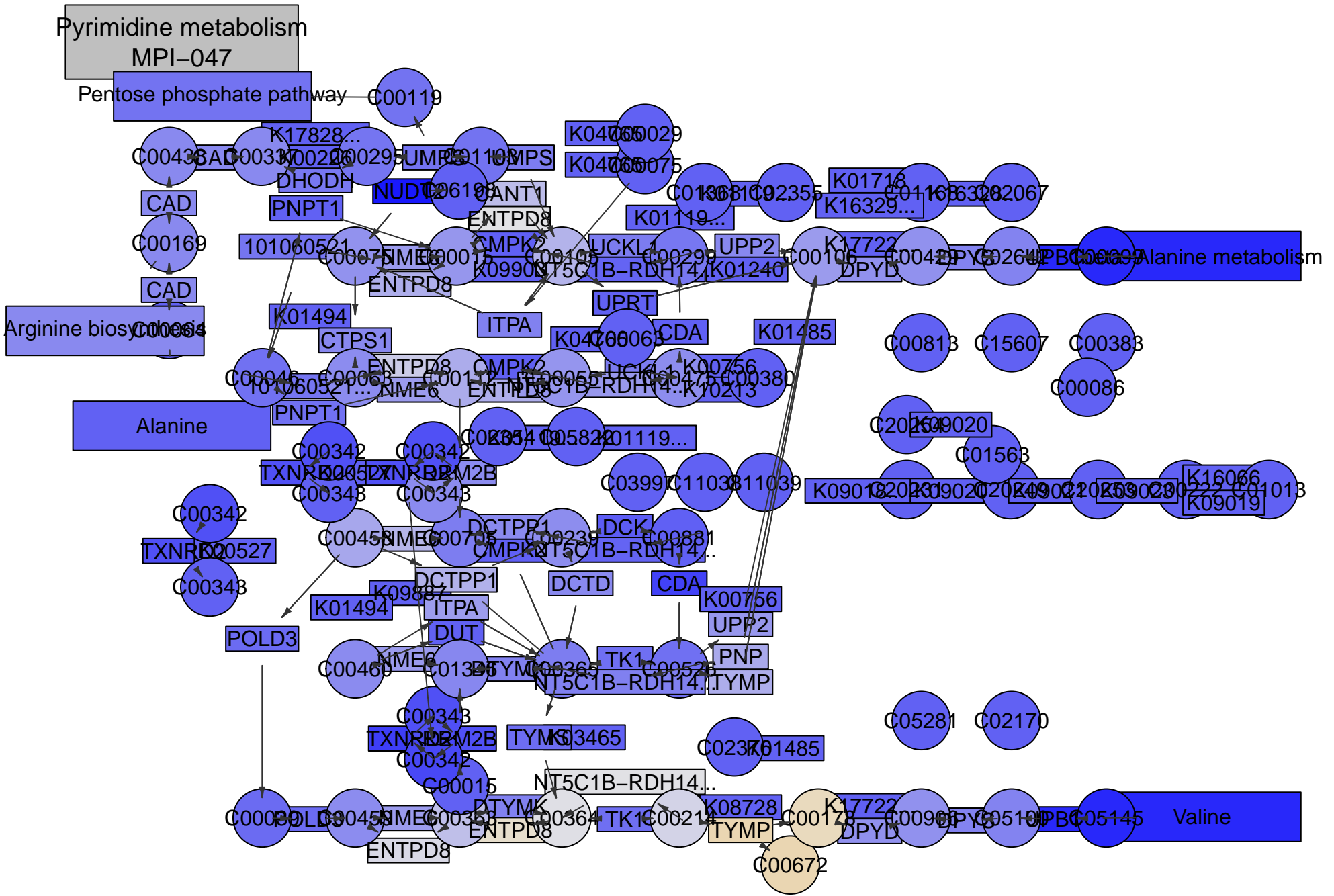
Pentose phosphate pathway
C00119



Pyrimidine metabolism
MPI-039

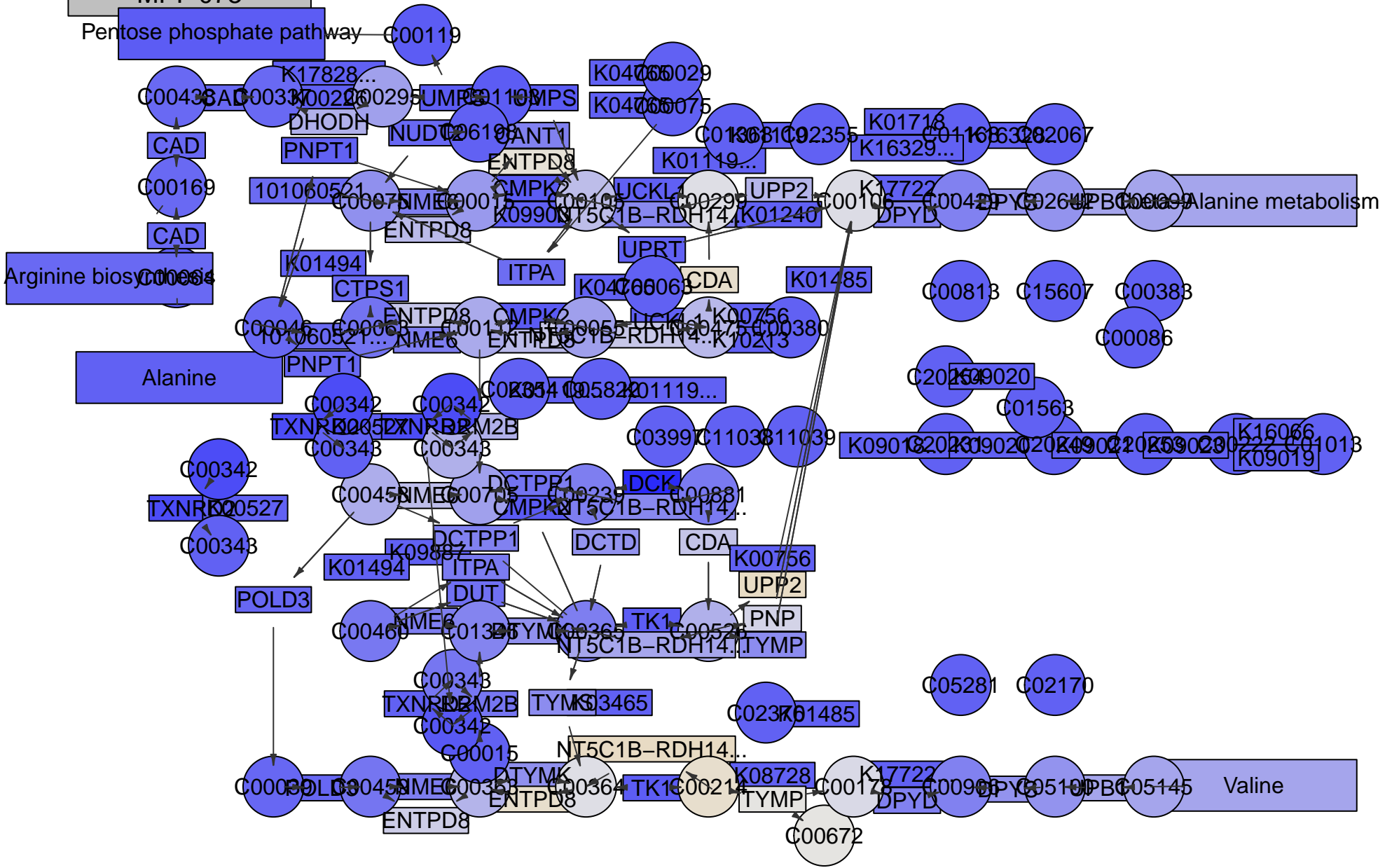
Pentose phosphate pathway
C00119





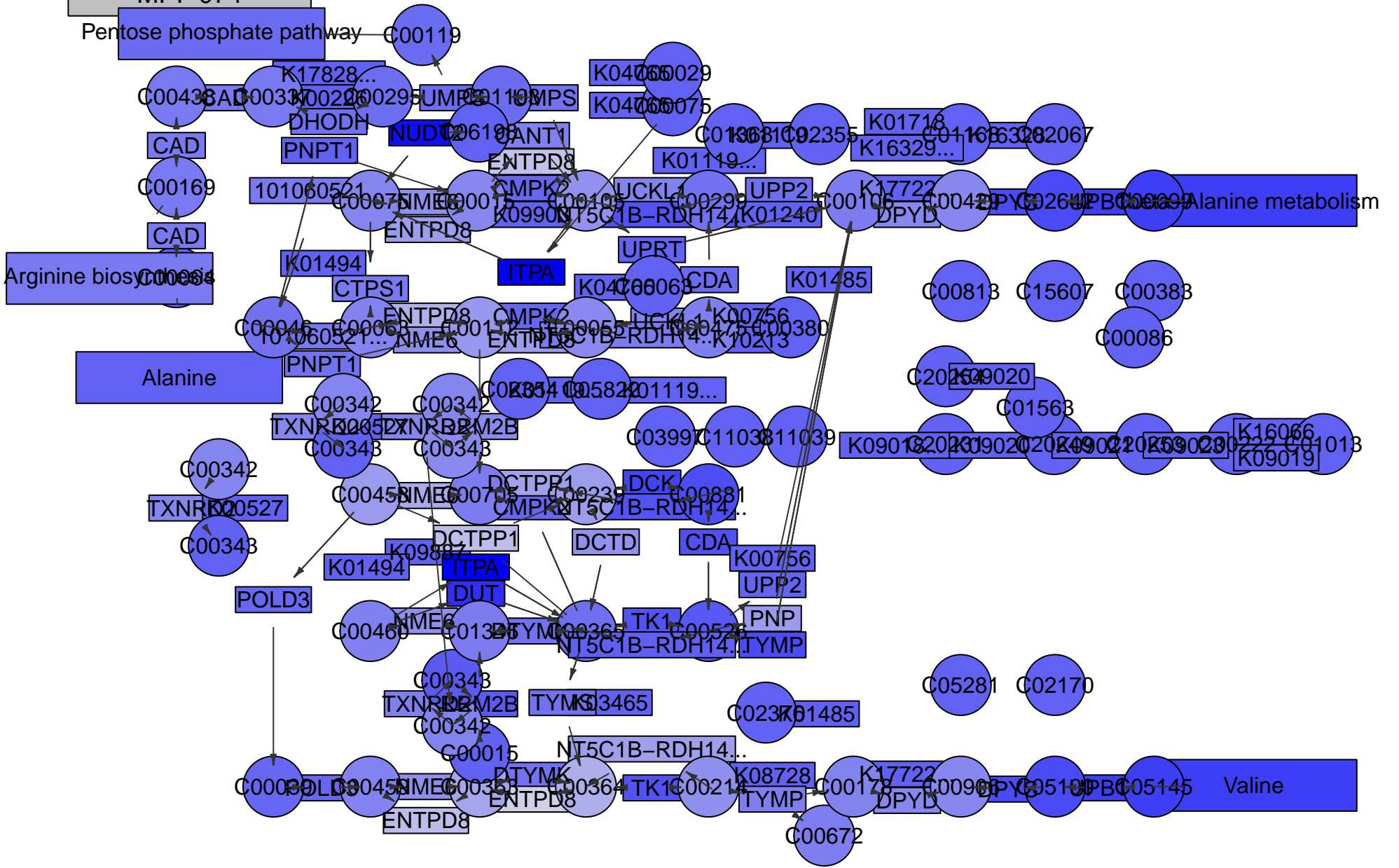
Pyrimidine metabolism
MPI-073

Pentose phosphate pathway C00119



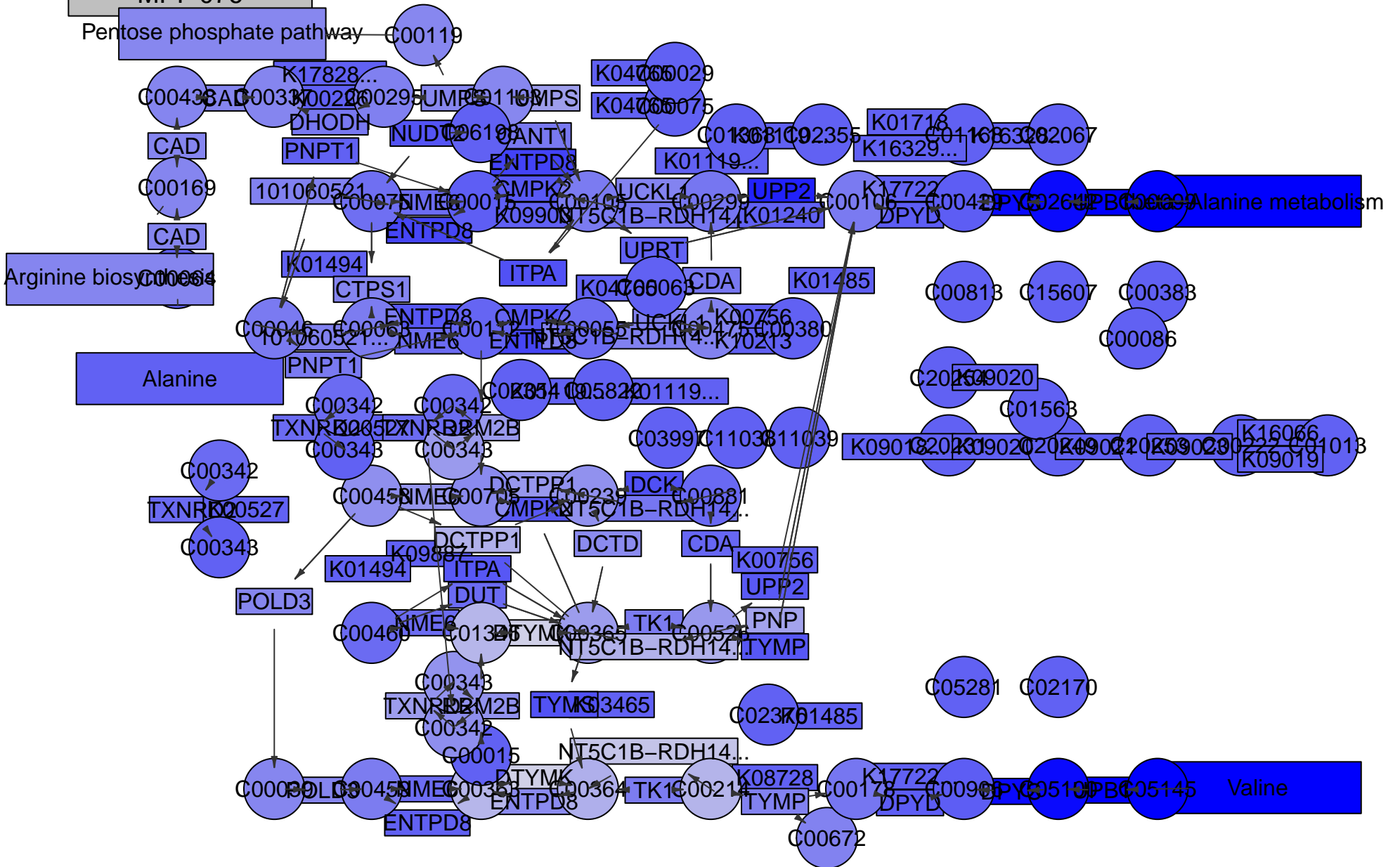
Pyrimidine metabolism
MPI-074

Pentose phosphate pathway C00119



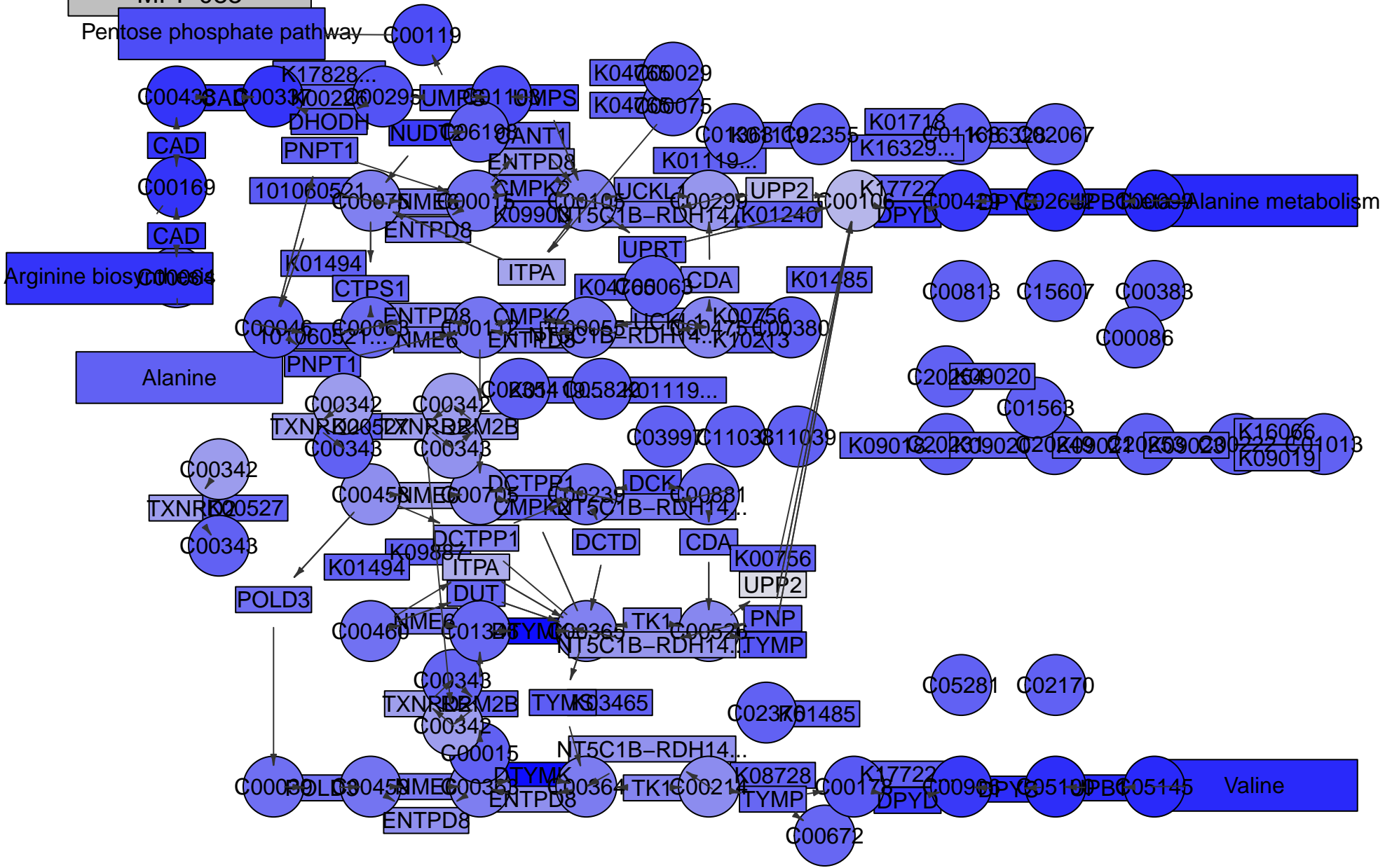
Pyrimidine metabolism
MPI-076

Pentose phosphate pathway
C00119



Pyrimidine metabolism
MPI-083

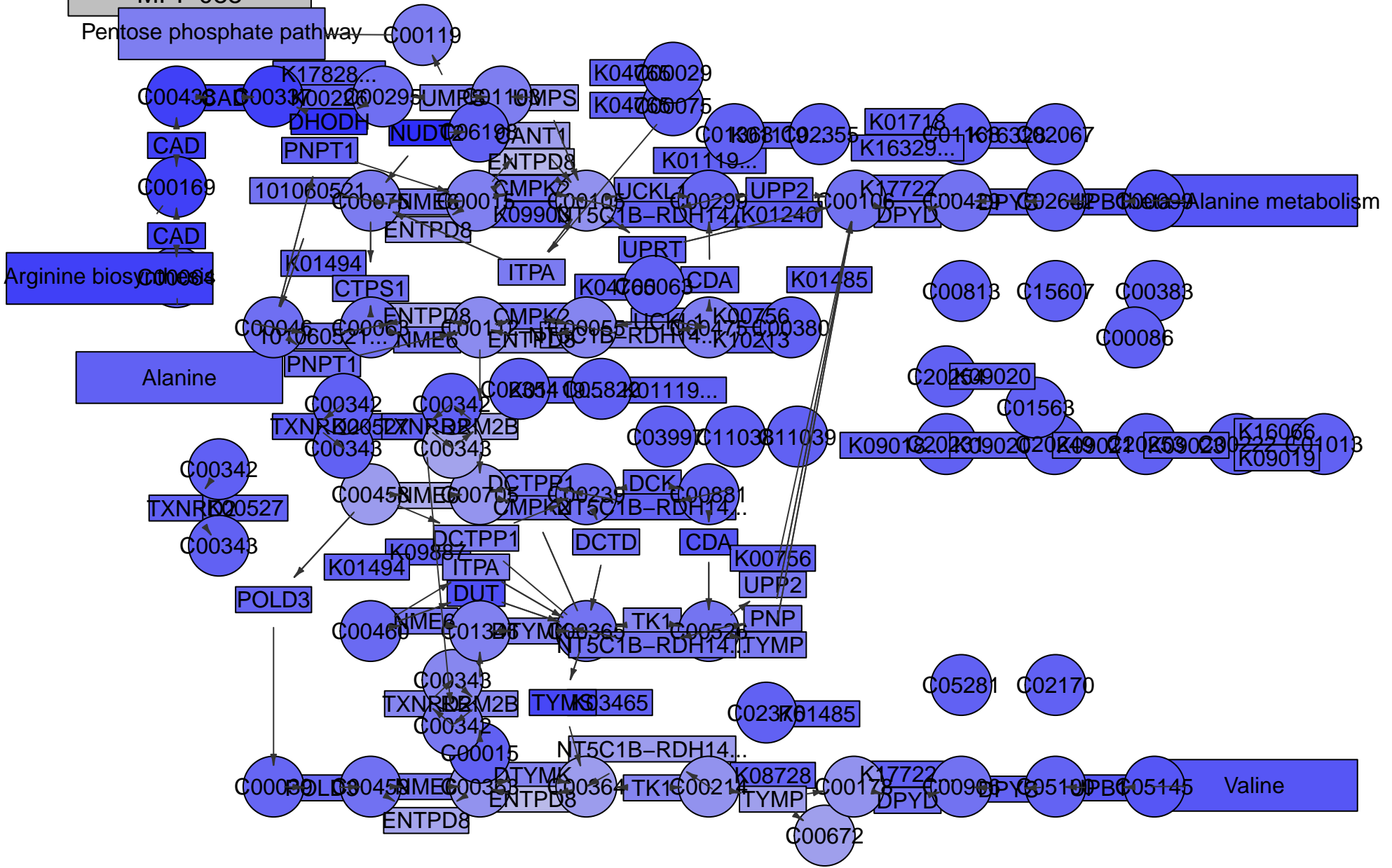
Pentose phosphate pathway C00119



Valine

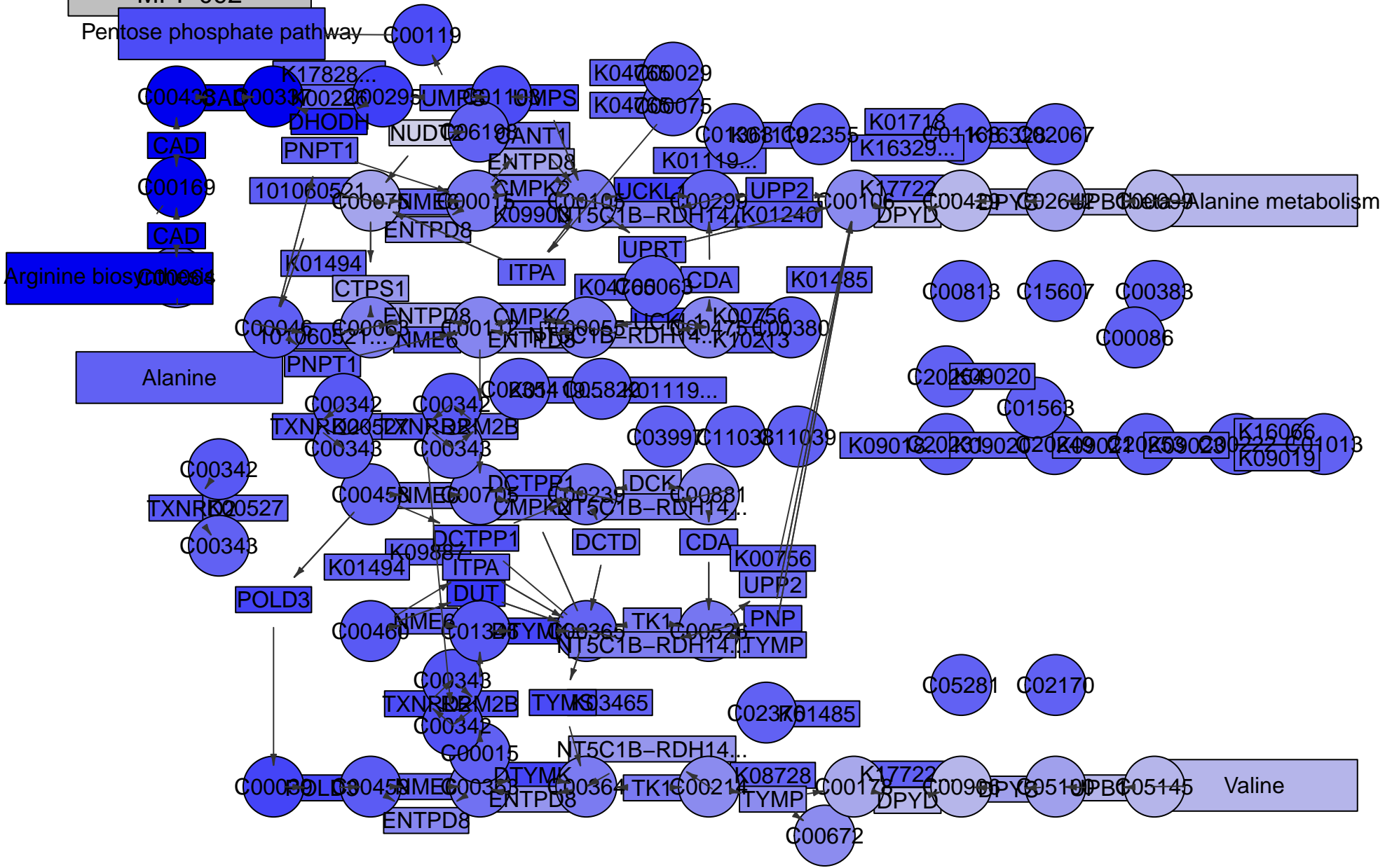
Pyrimidine metabolism
MPI-088

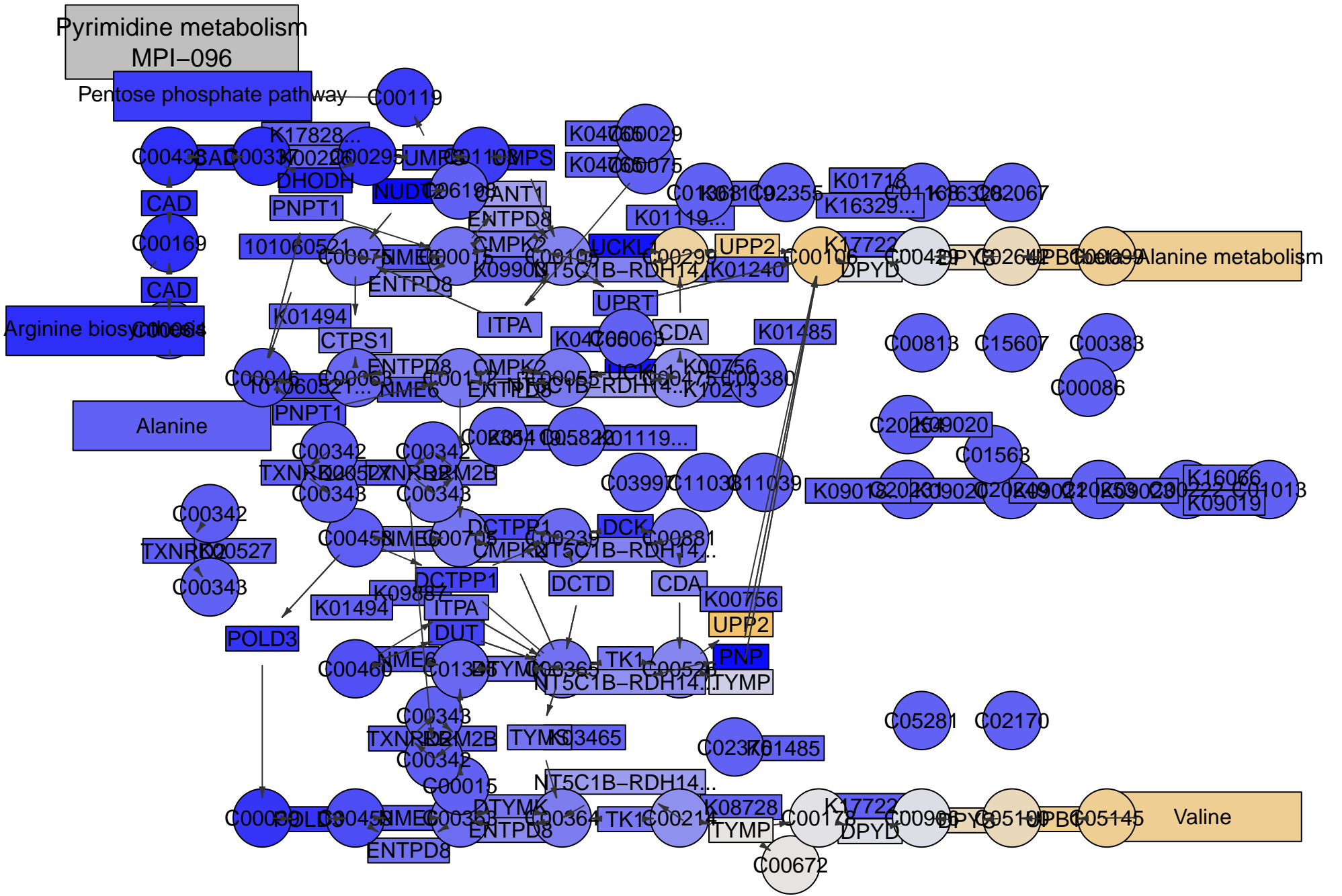
Pentose phosphate pathway



Pyrimidine metabolism
MPI-092

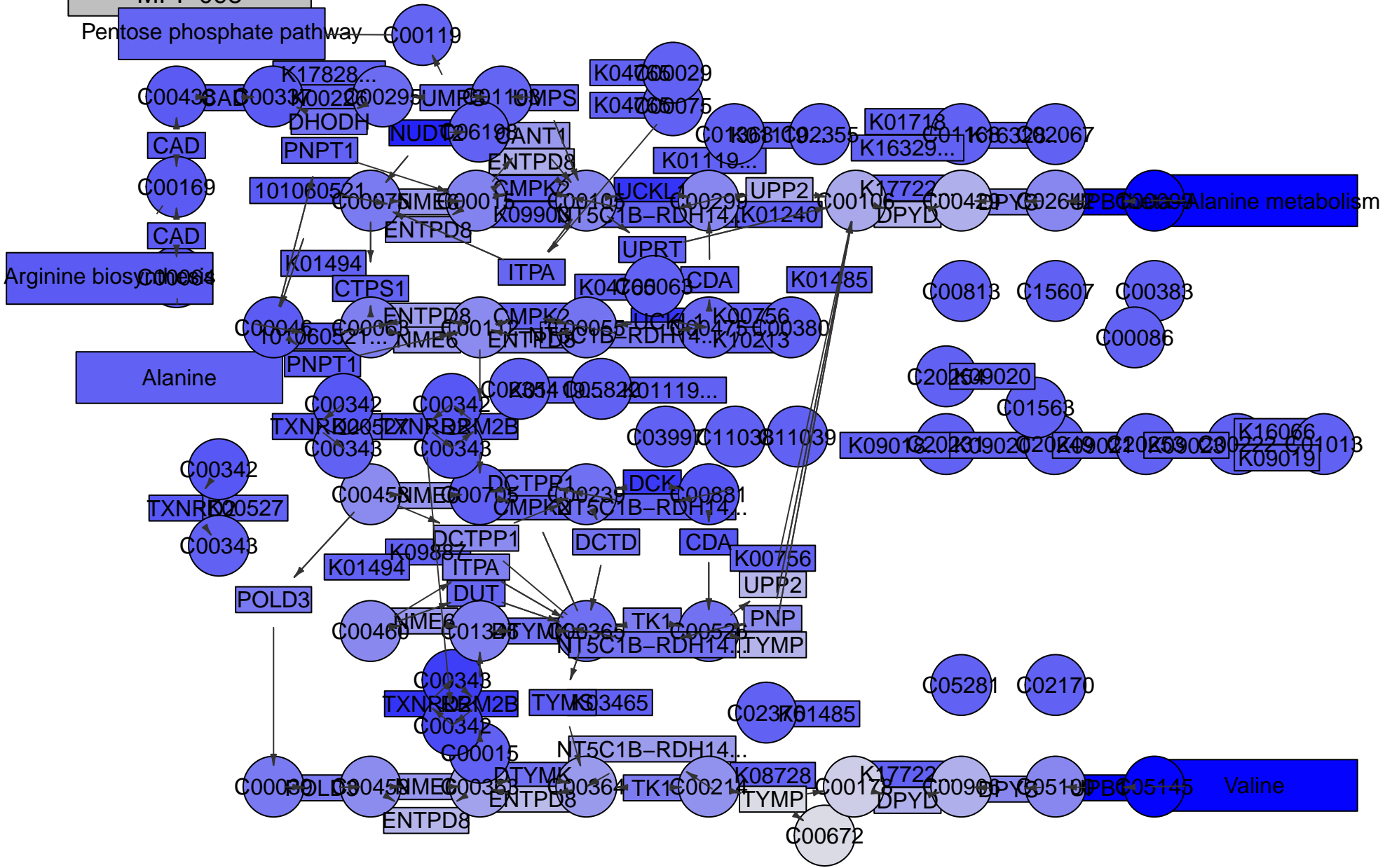
Pentose phosphate pathway

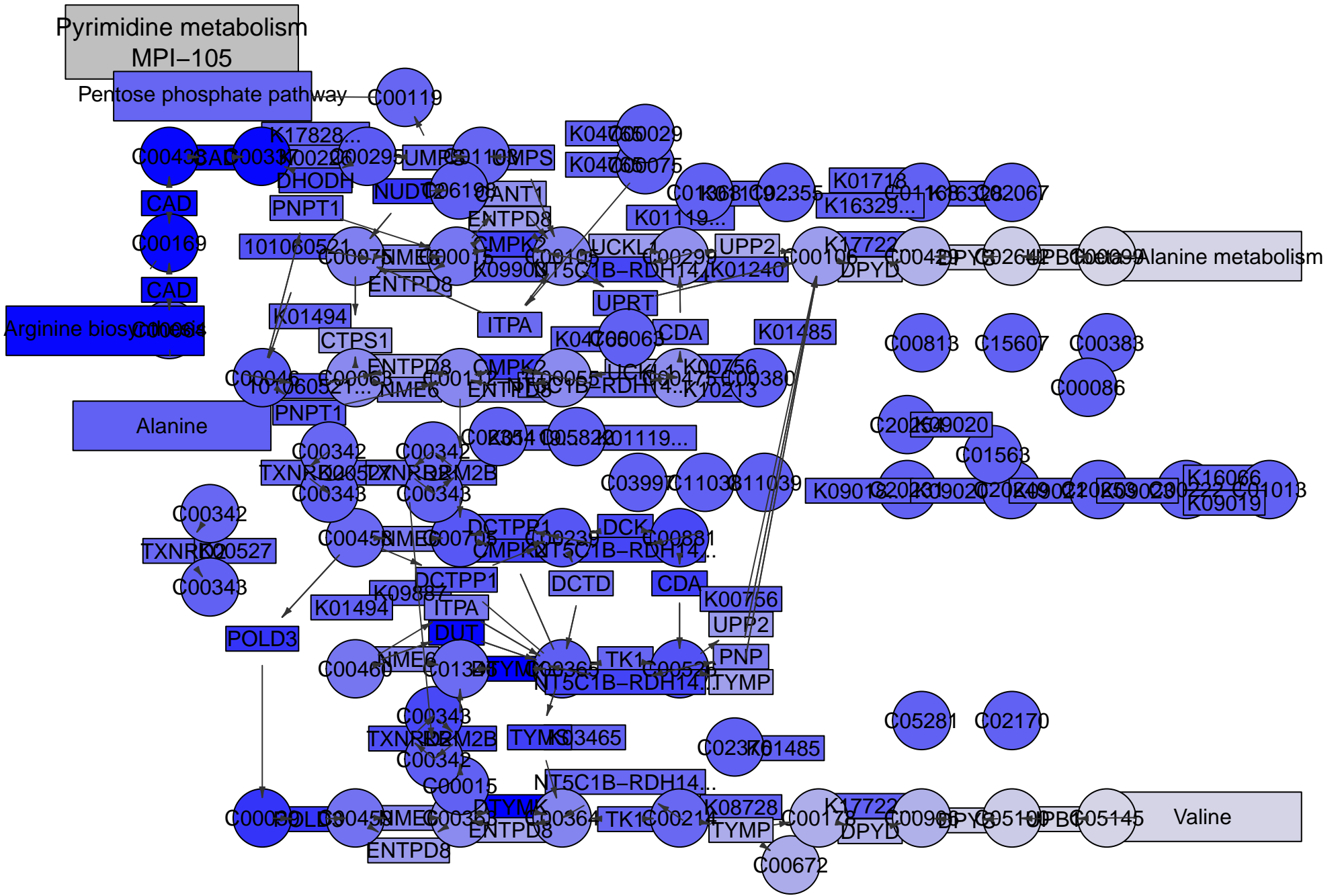




Pyrimidine metabolism
MPI-098

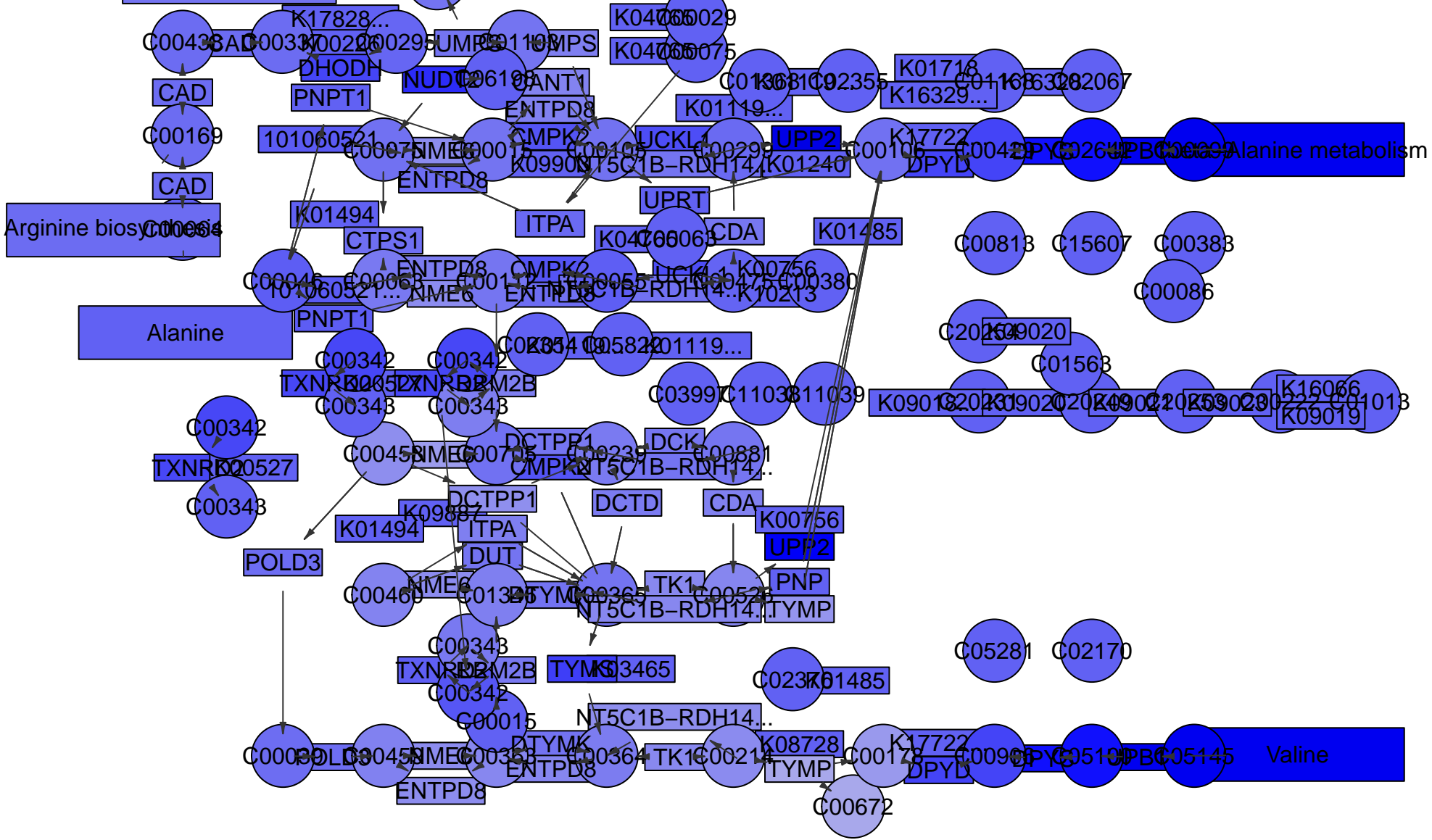
Pentose phosphate pathway C00119

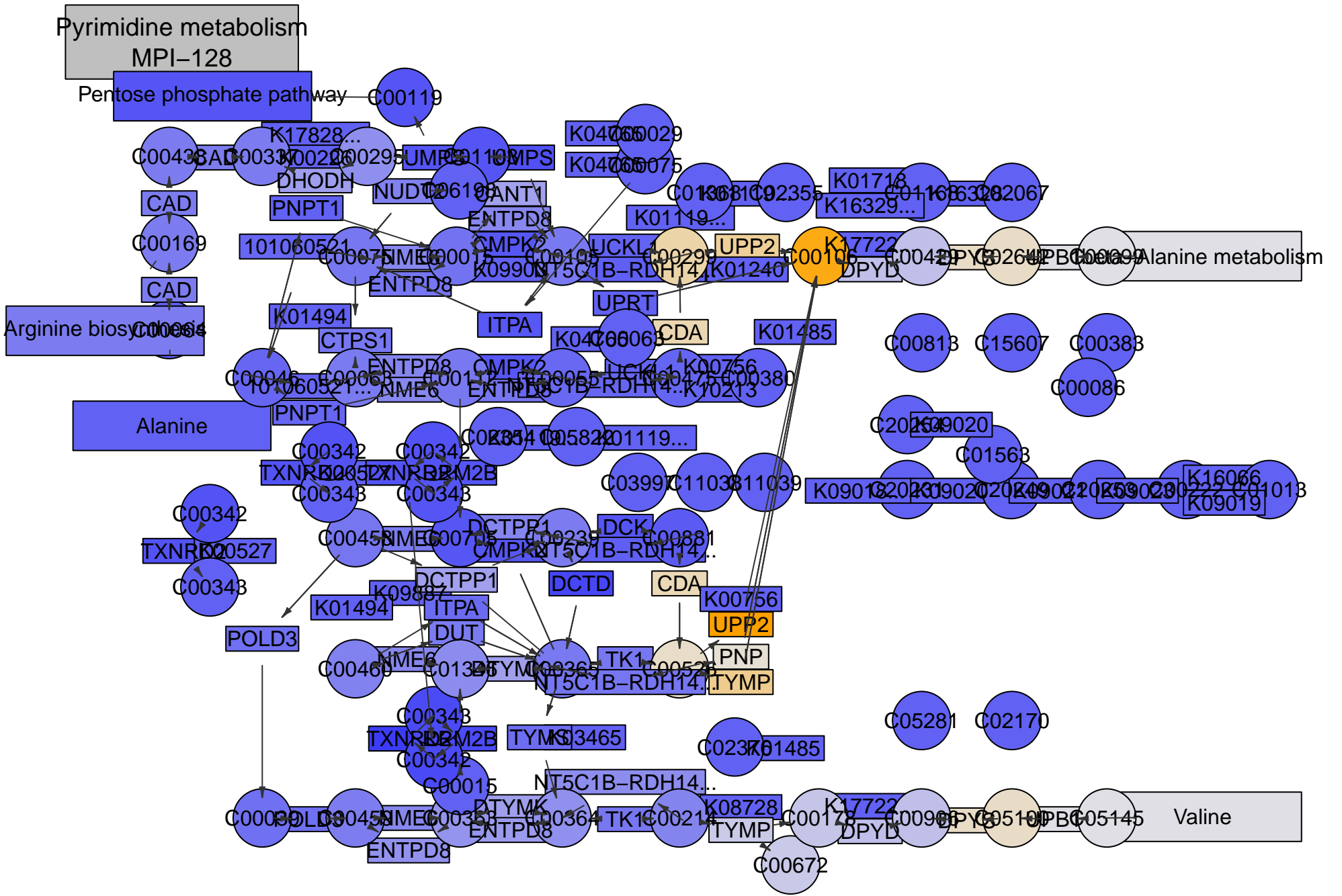




Pyrimidine metabolism
MPI-110

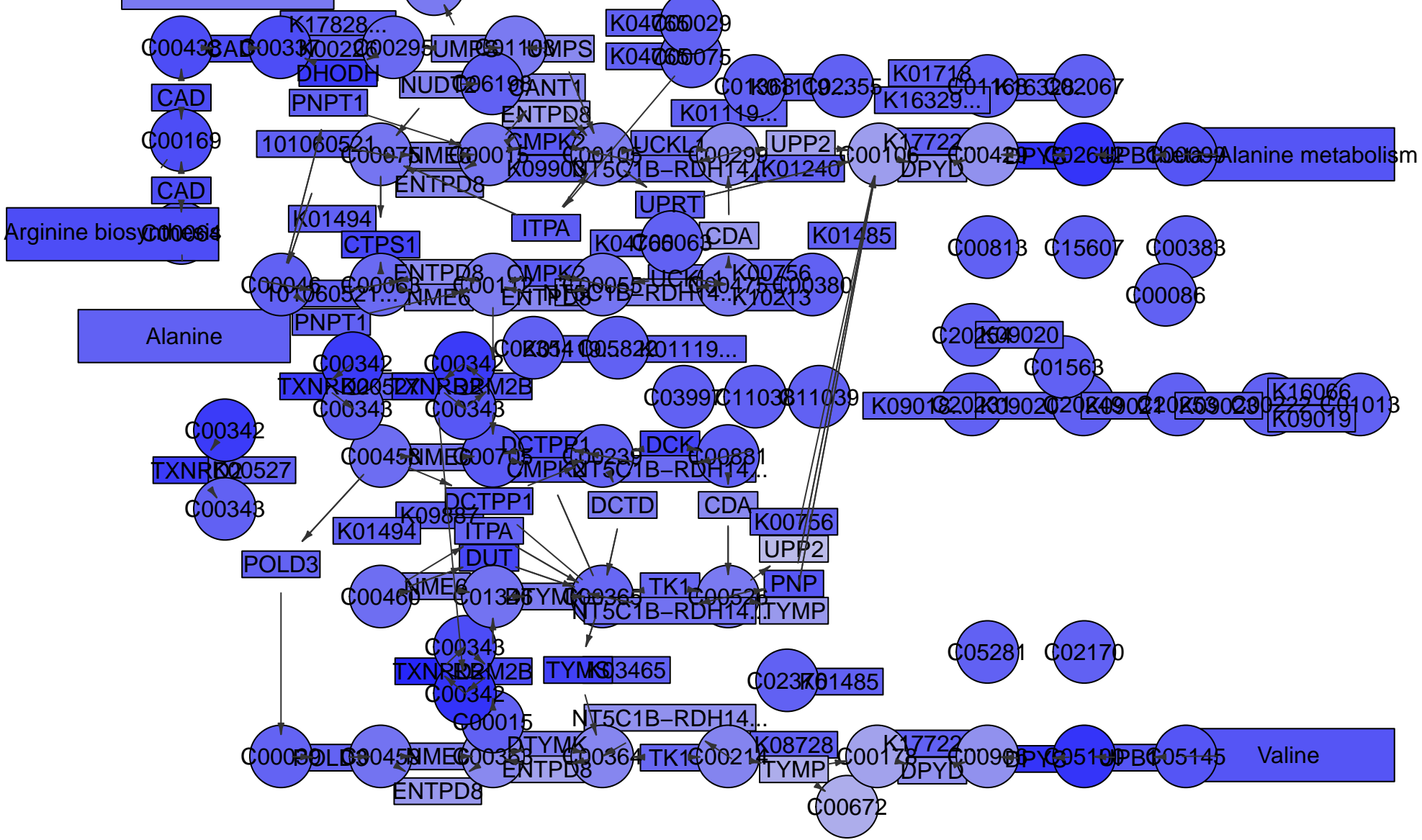
Pentose phosphate pathway C00119





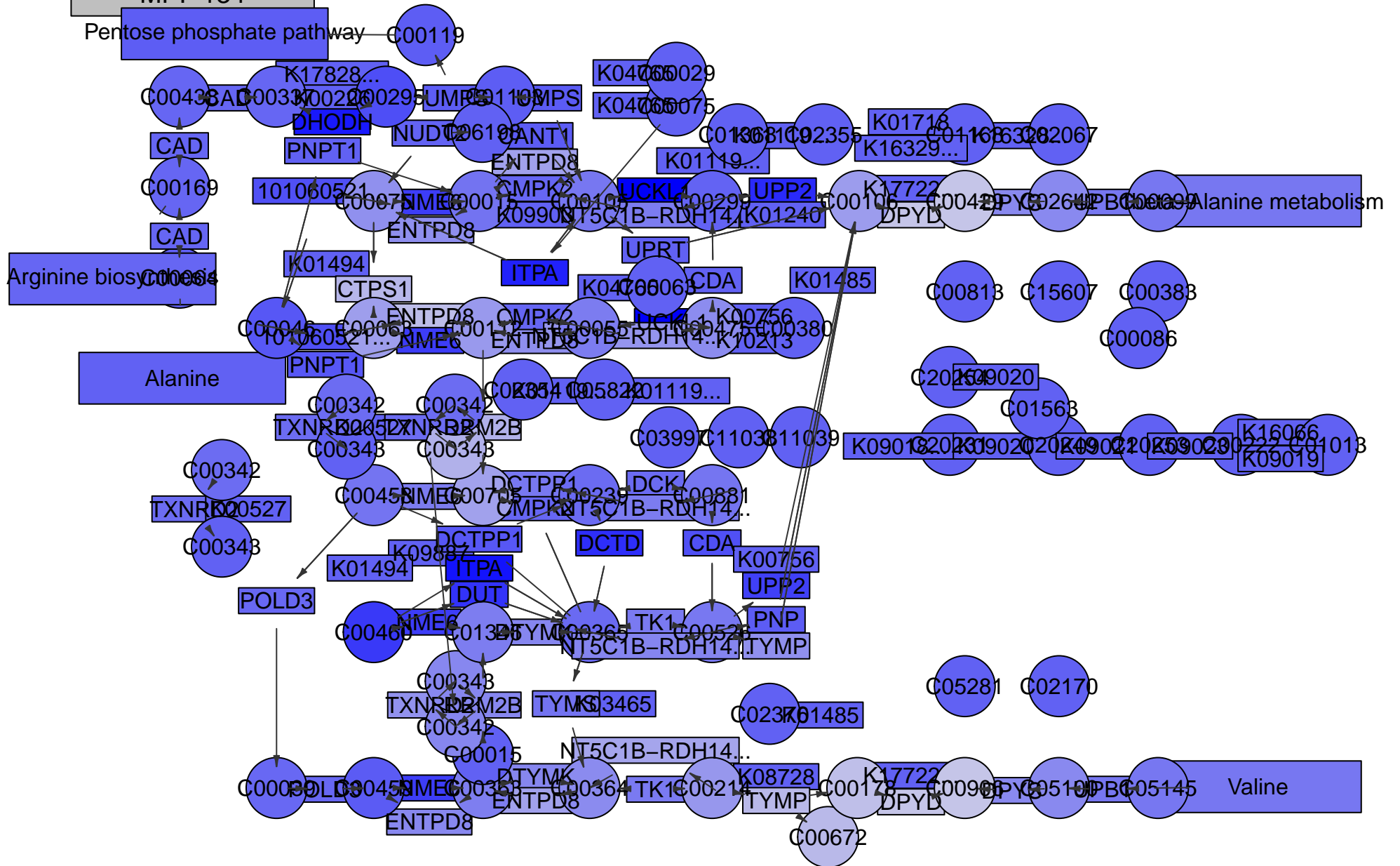
Pyrimidine metabolism
MPI-132

Pentose phosphate pathway



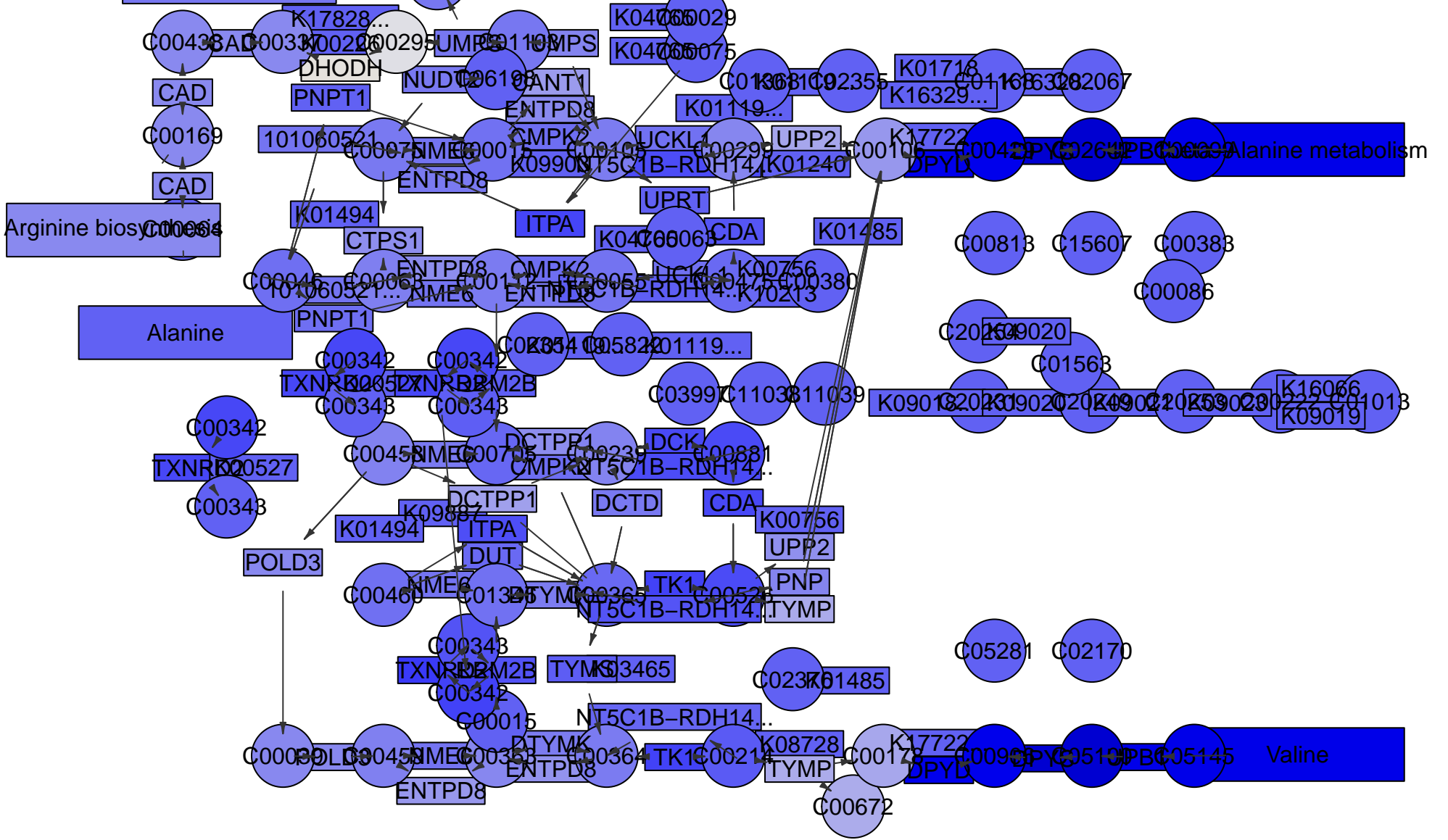
Pyrimidine metabolism
MPI-134

Pentose phosphate pathway



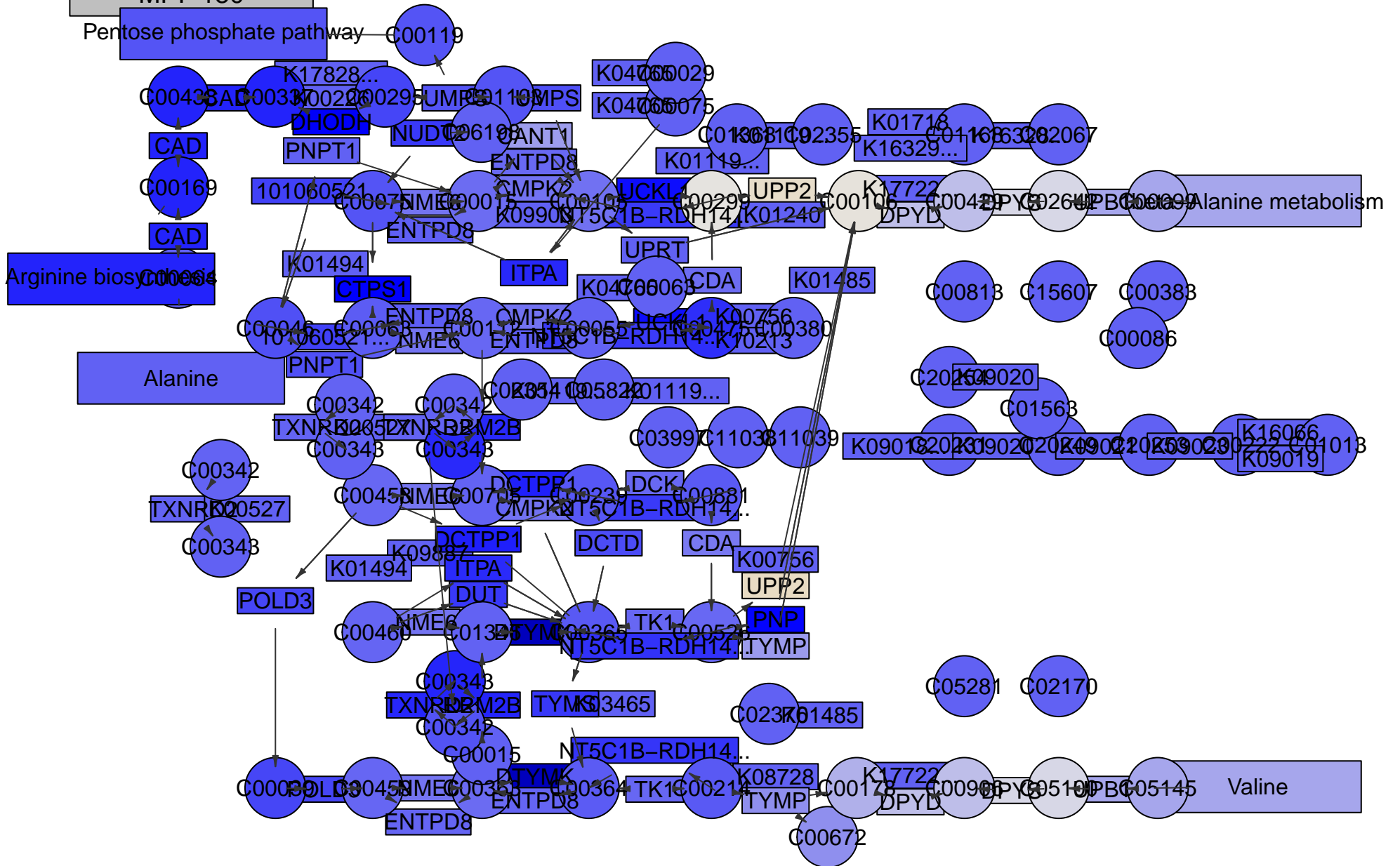
Pyrimidine metabolism
MPI-146

Pentose phosphate pathway
C00119



Pyrimidine metabolism
MPI-150

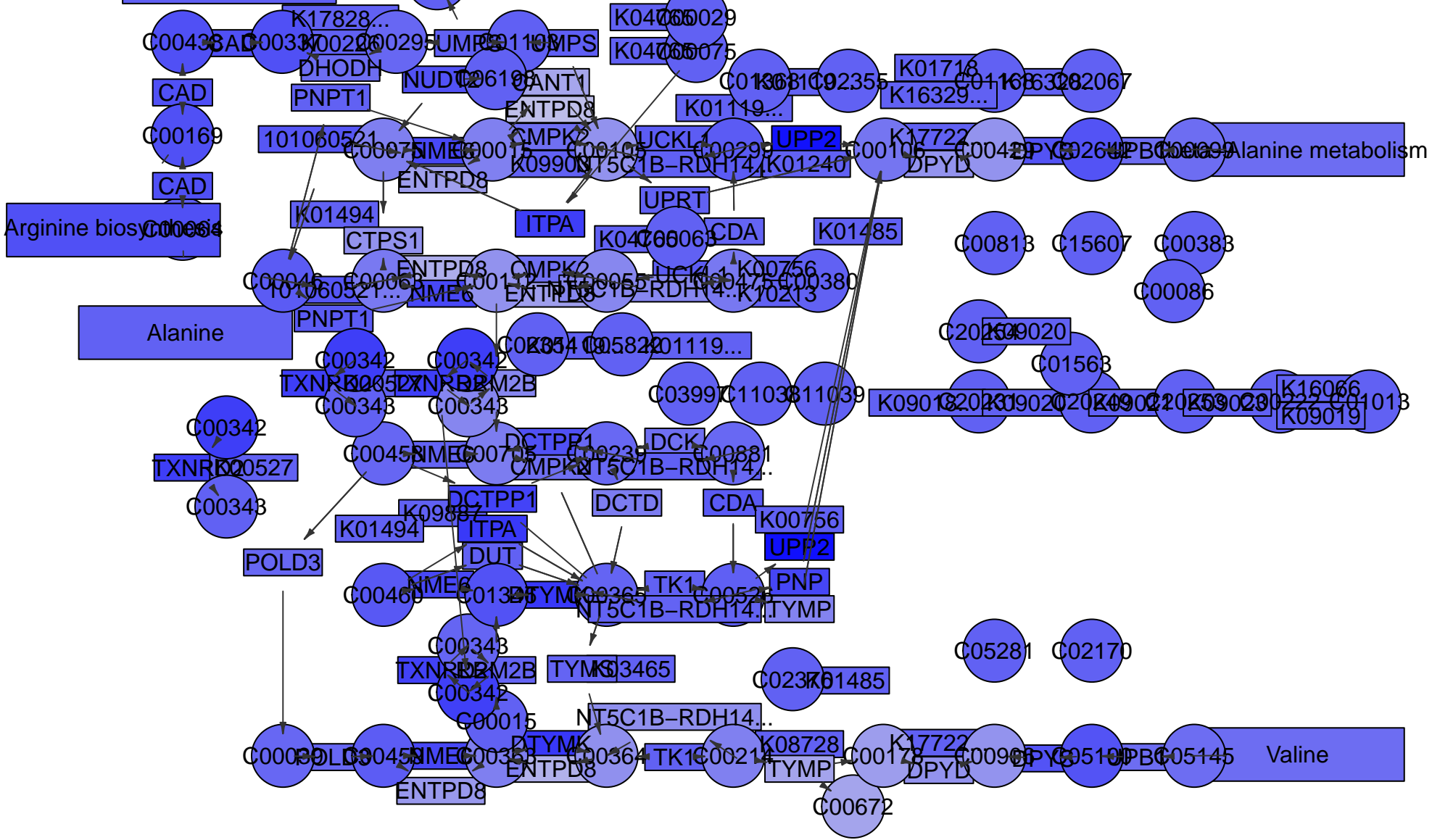
Pentose phosphate pathway



Pyrimidine metabolism

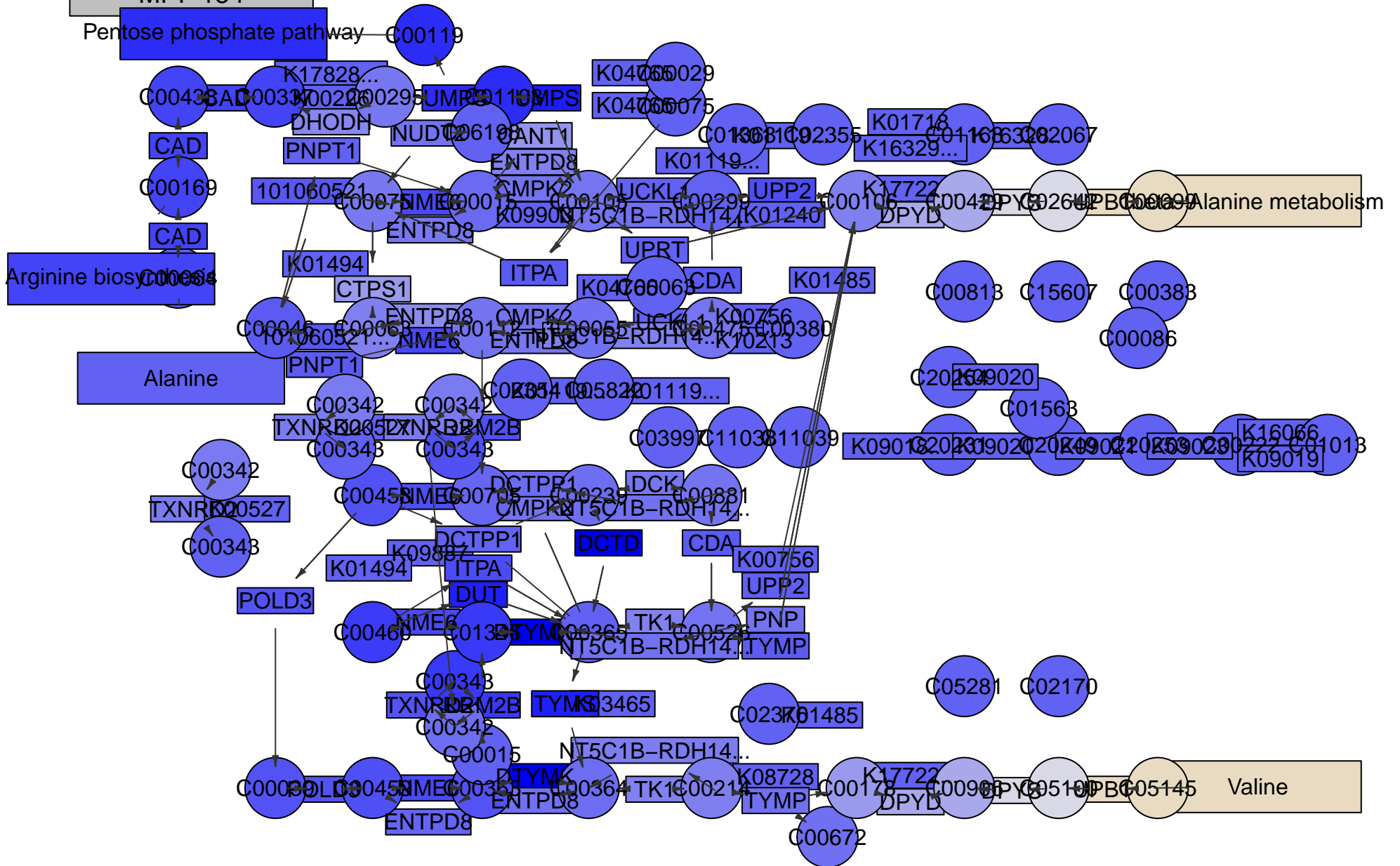
MPI-152

Pentose phosphate pathway



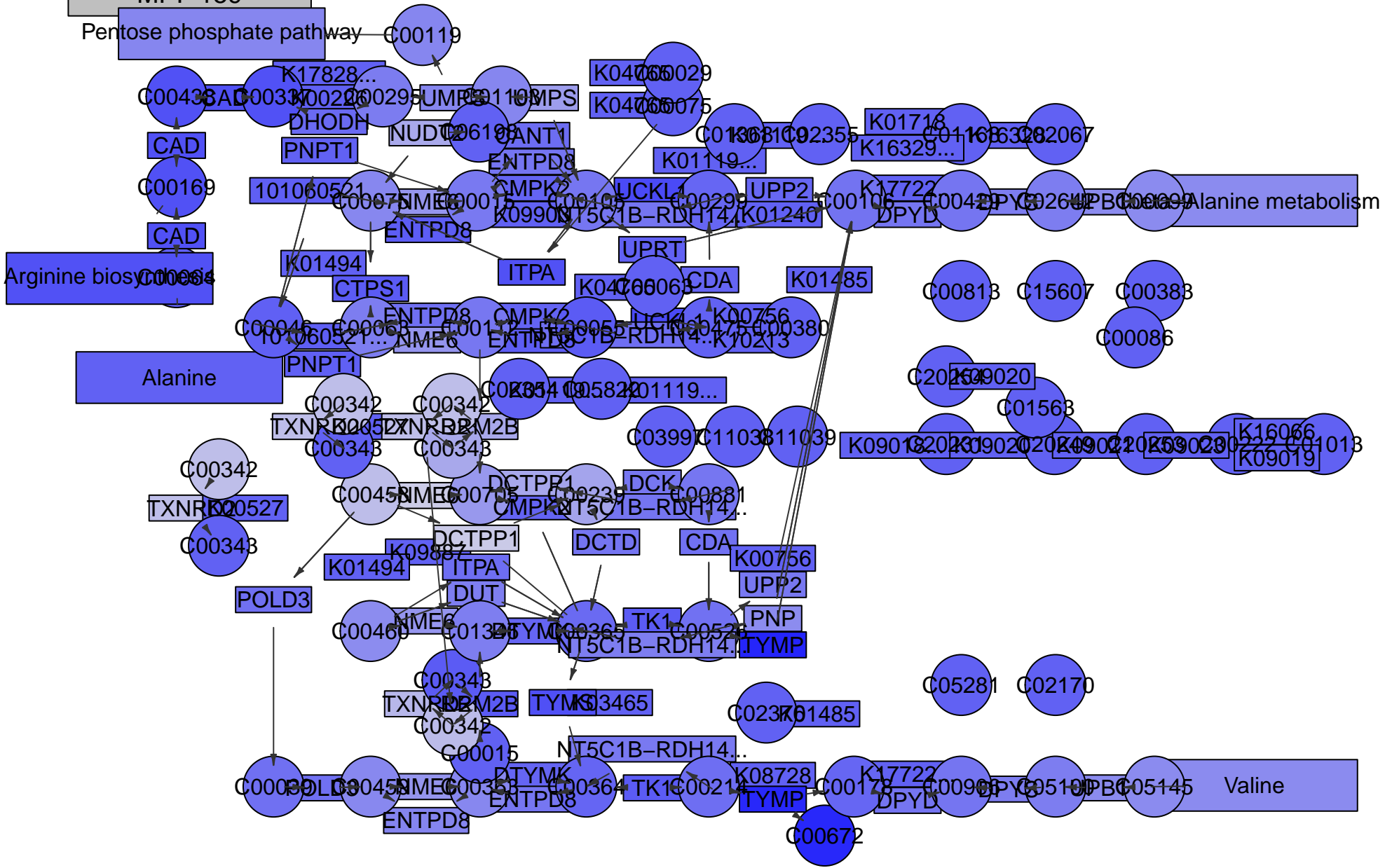
Pyrimidine metabolism
MPI-154

Pentose phosphate pathway



Pyrimidine metabolism
MPI-159

Pentose phosphate pathway C00119



CAD

CAD

Arginine biosynthesis

Alanine

TXNRD

POLD3

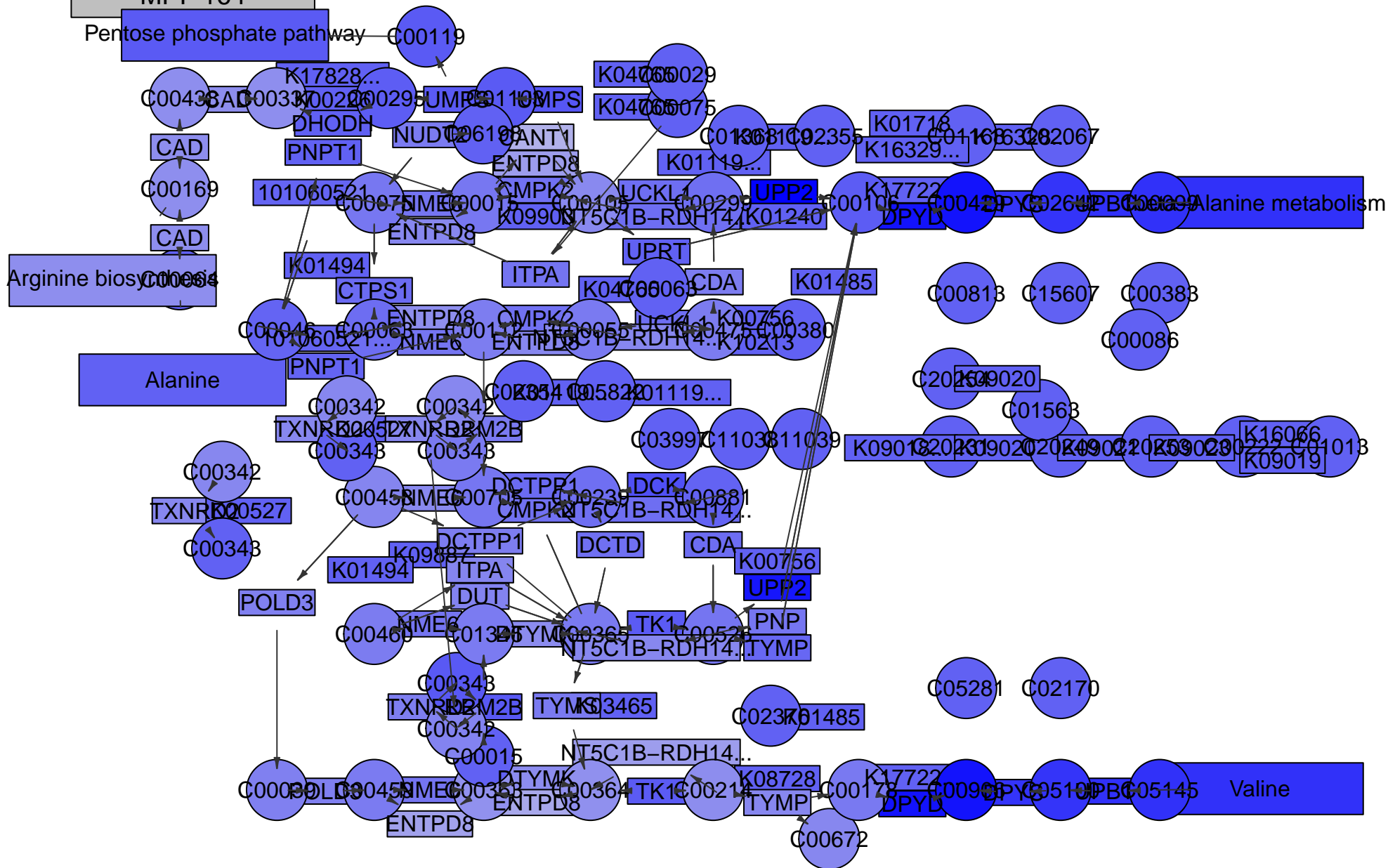
POLD3

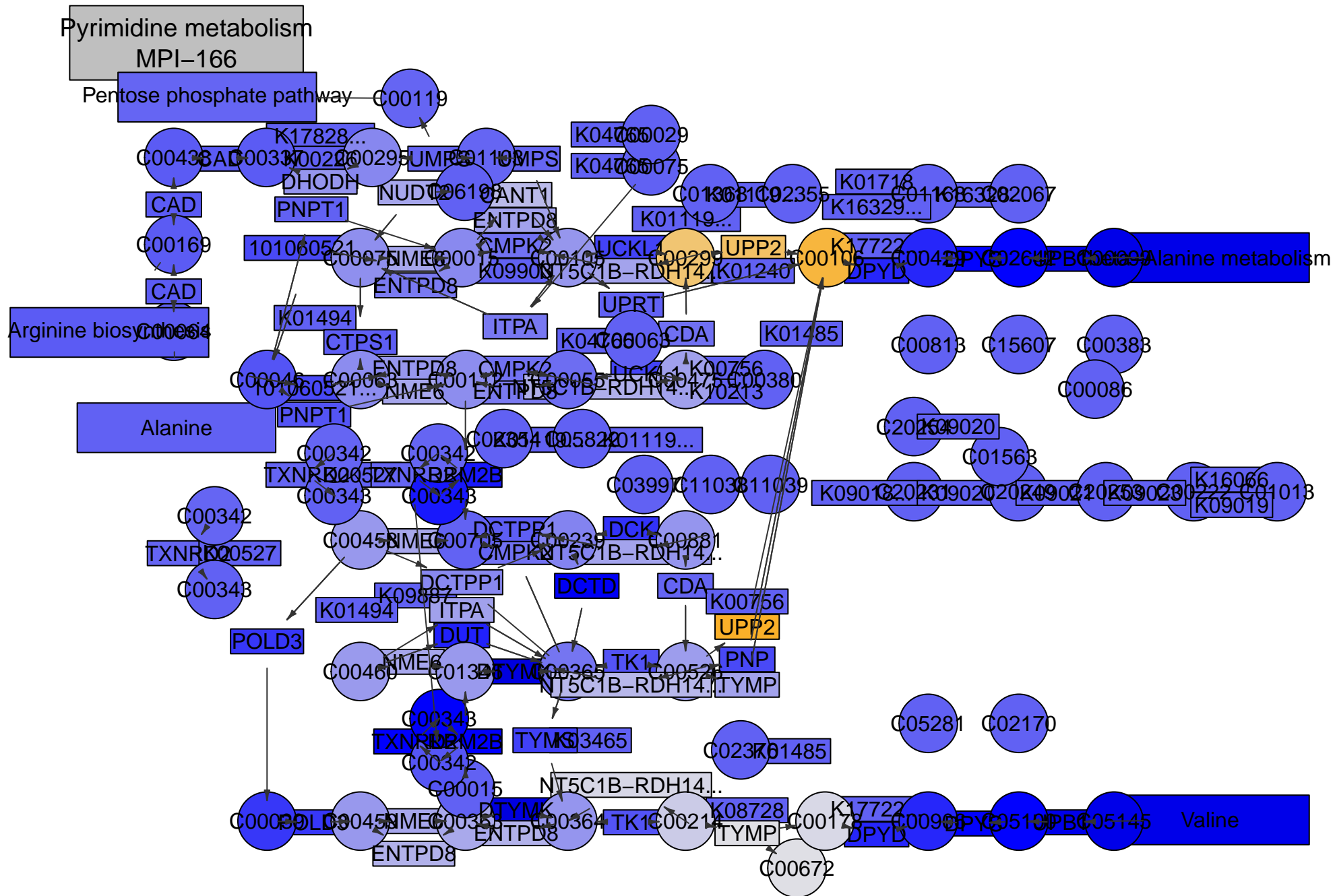
Alanine metabolism

Valine

Pyrimidine metabolism
MPI-164

Pentose phosphate pathway C00119





Pyrimidine metabolism
MPI-168

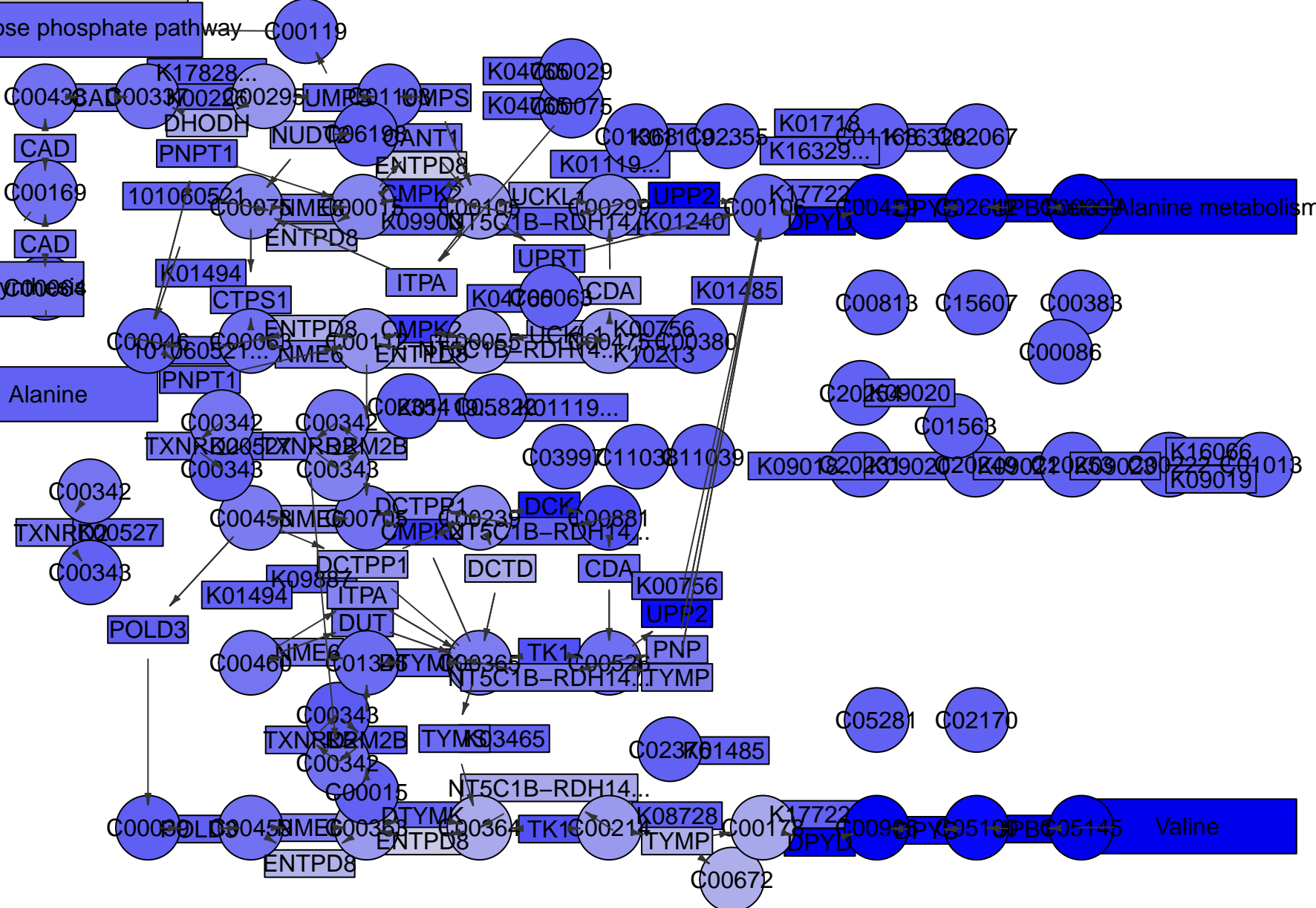
Pentose phosphate pathway

Arginine biosynthesis

Alanine

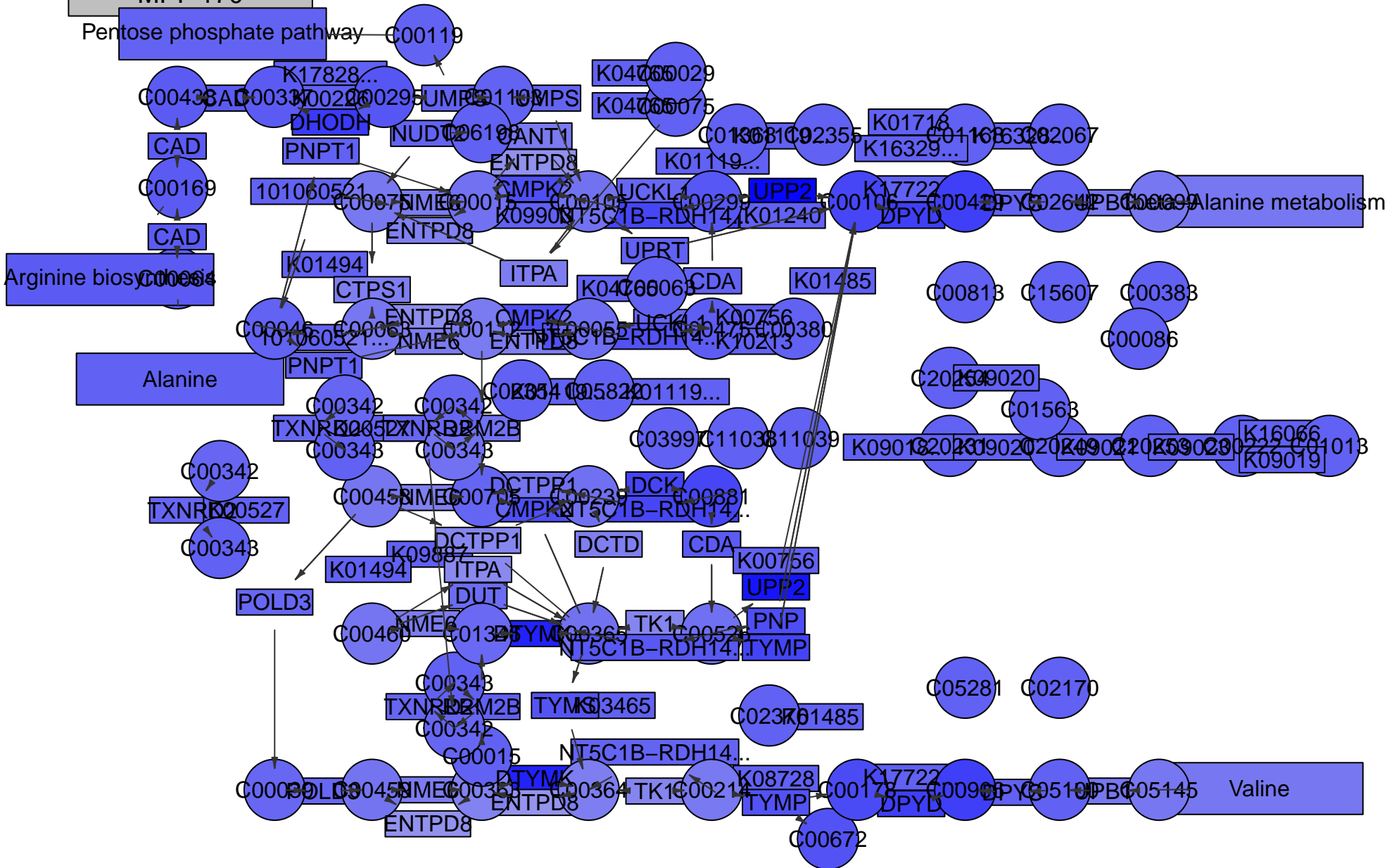
Alanine metabolism

Valine



Pyrimidine metabolism
MPI-170

Pentose phosphate pathway C00119

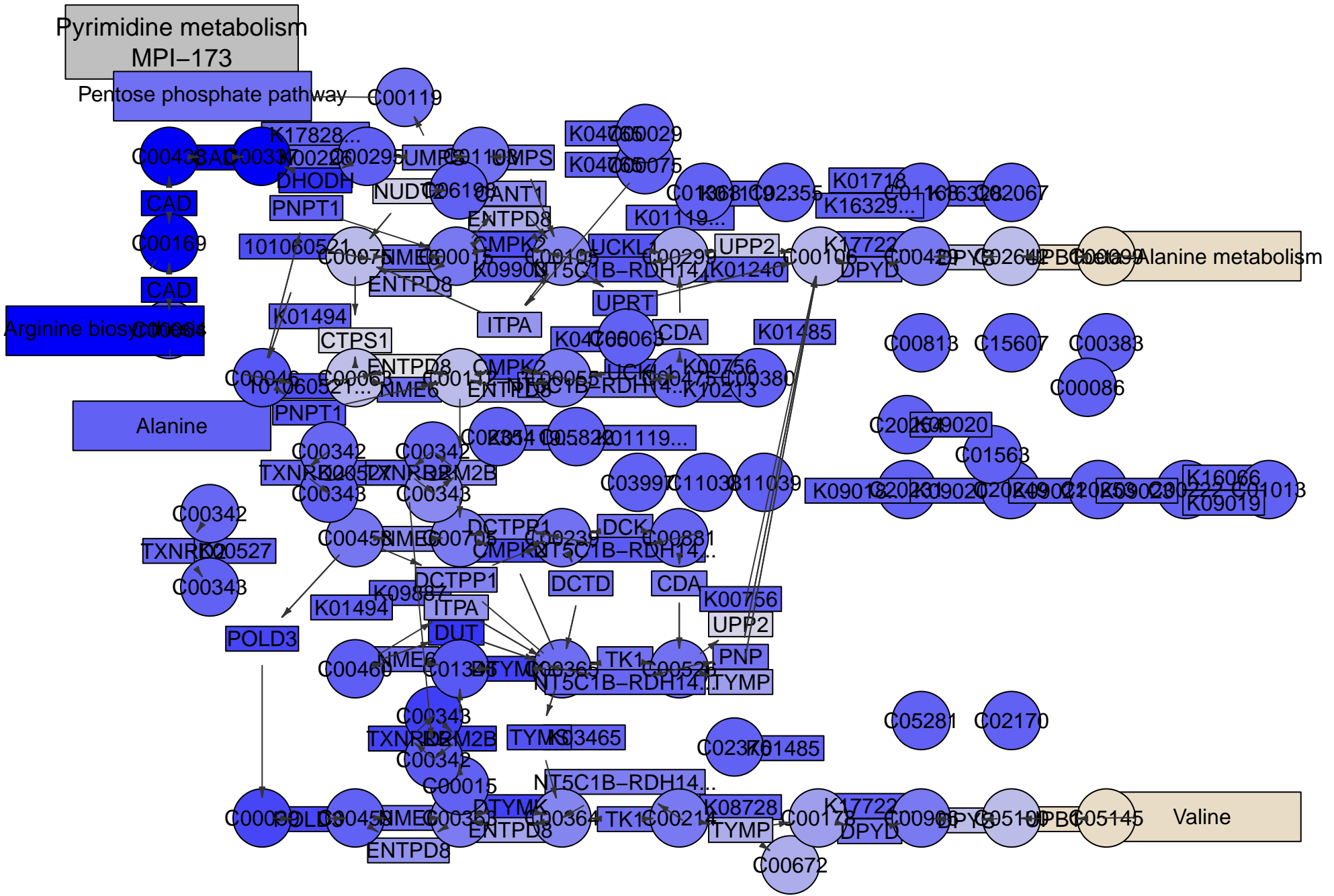


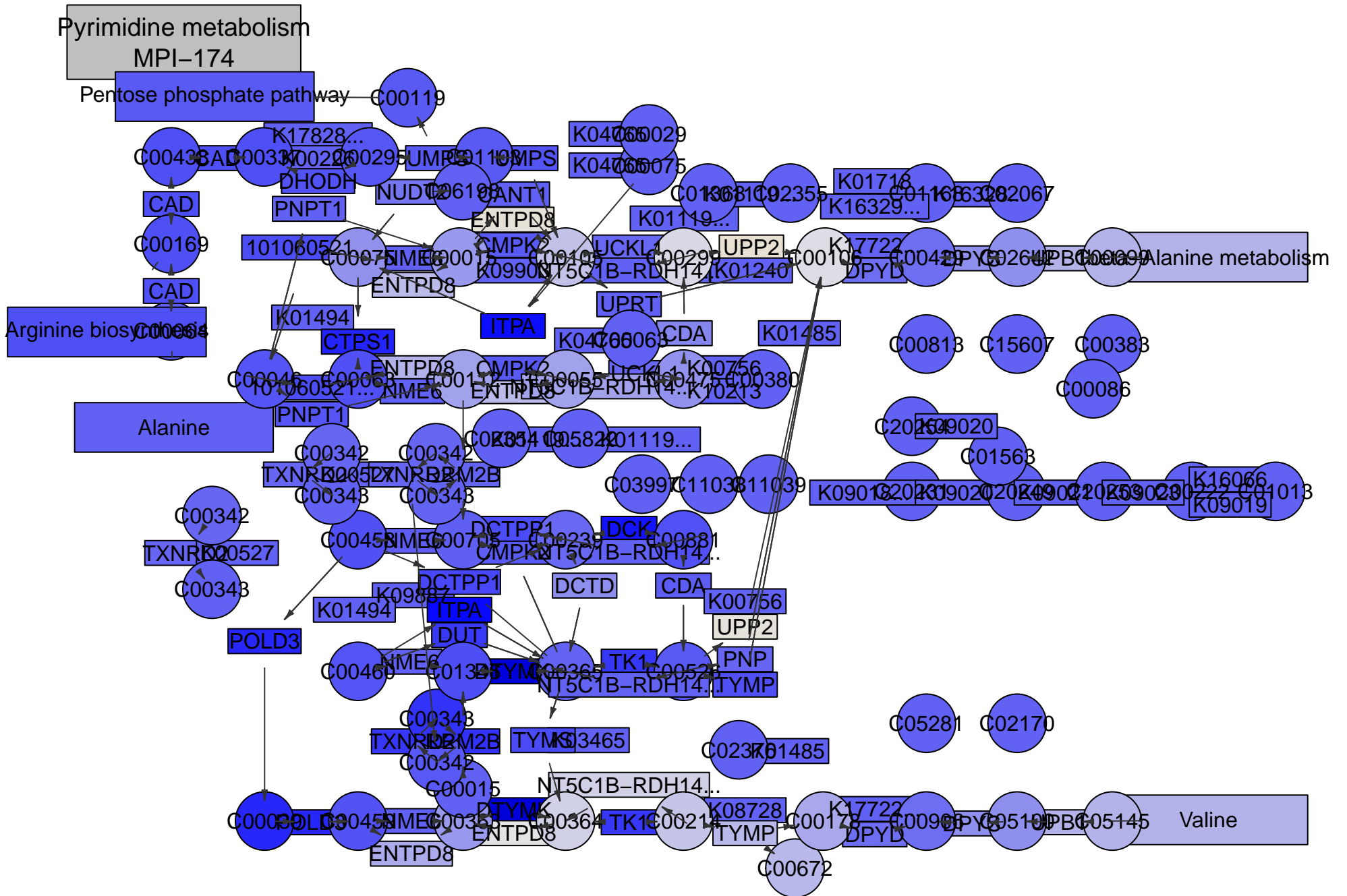
Alanine metabolism

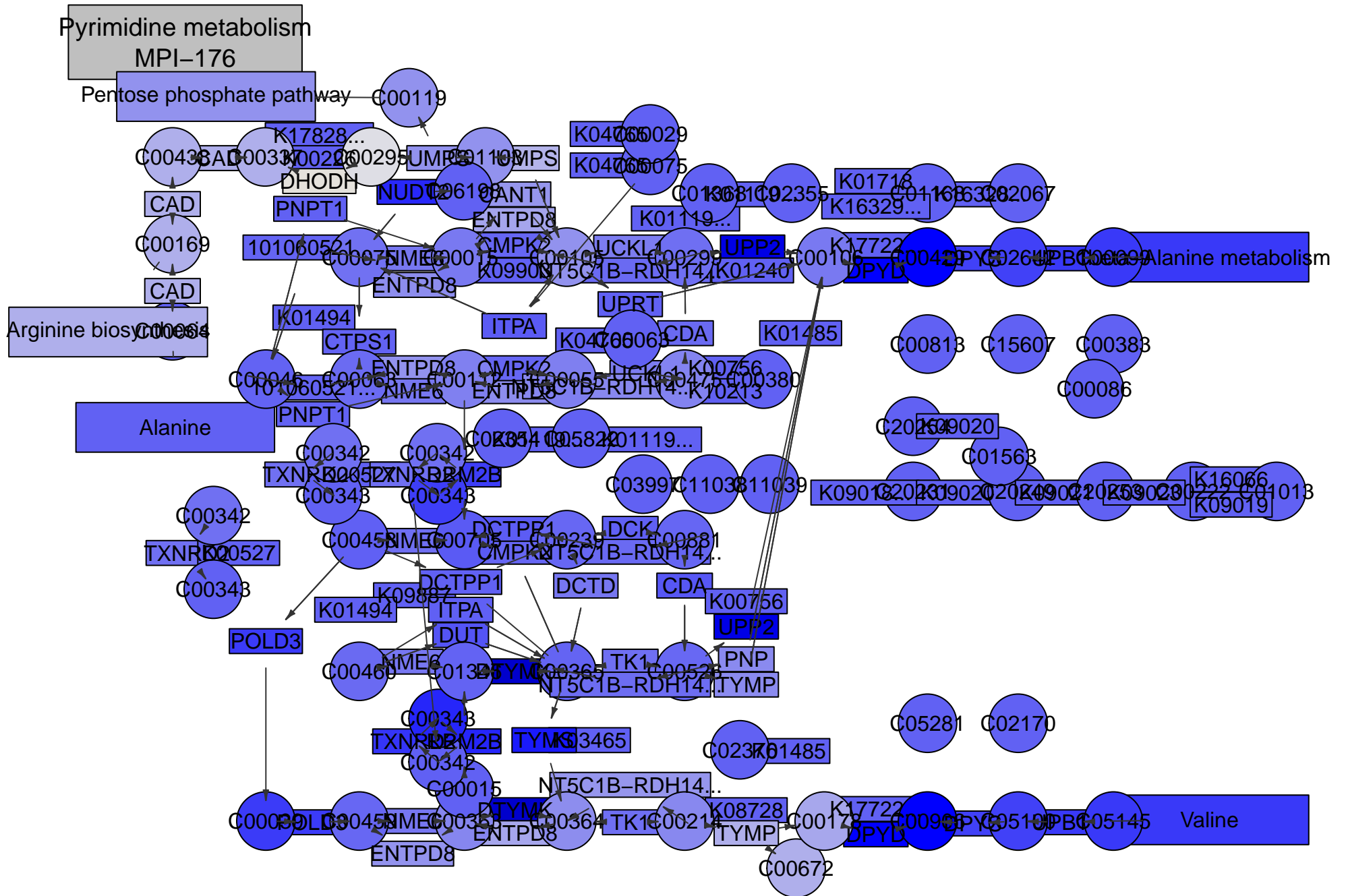
Arginine biosynthesis

Alanine

Valine

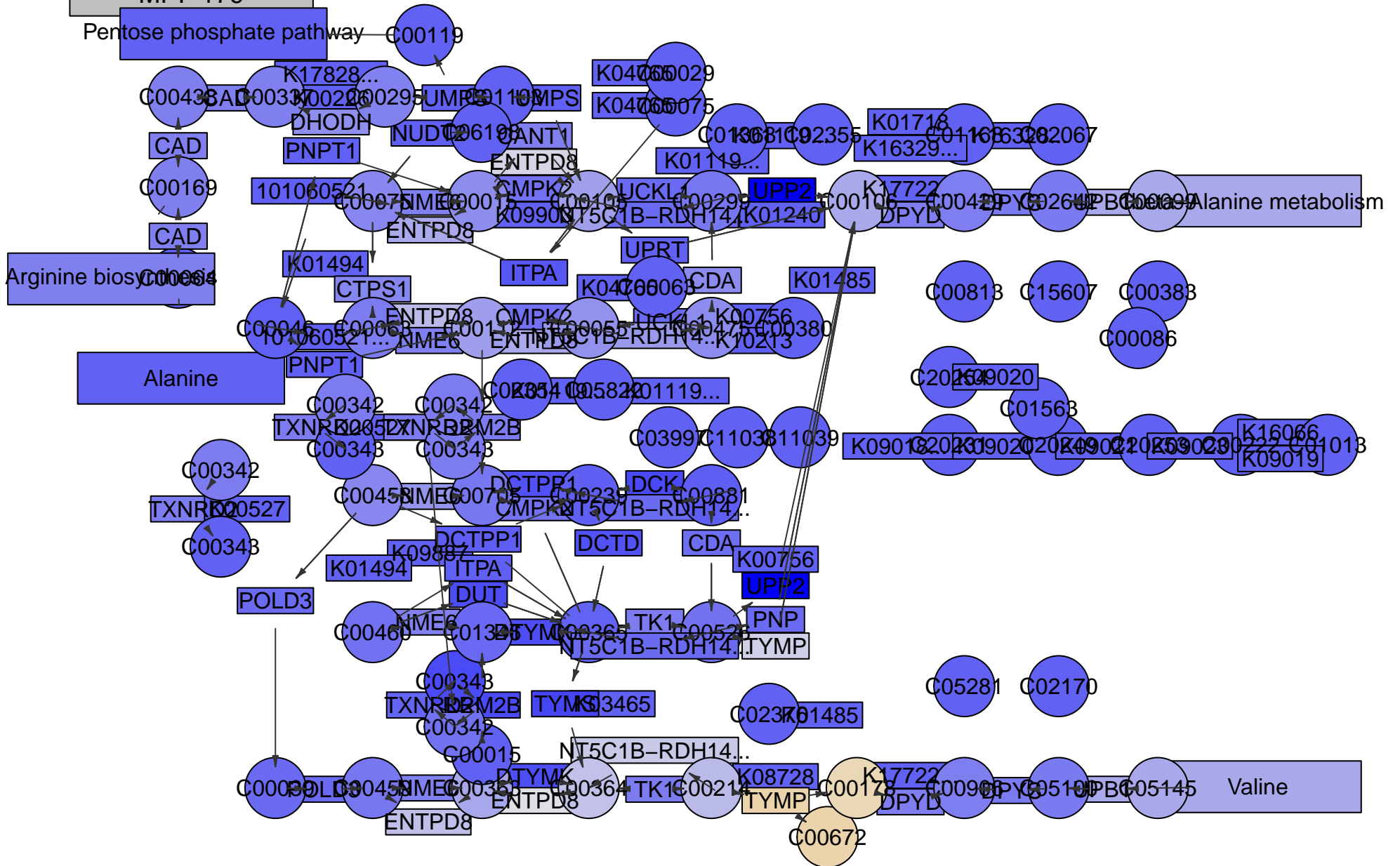






Pyrimidine metabolism
MPI-179

Pentose phosphate pathway C00119



Pyrimidine metabolism

MPI-183

Pentose phosphate pathway

C00119

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

C00359

C00364

TK1

C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

C00359

C00364

TK1

C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

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C00364

TK1

C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

C00359

C00364

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C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

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C00348

POLD3

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C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

C00359

C00364

TK1

C00214

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C00359

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C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

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C00364

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C00226

C00295

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C00110

CAD

C00169

CAD

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C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

C00359

C00364

TK1

C00214

C00438

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C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

C00359

C00364

TK1

C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

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C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

C00359

C00364

TK1

C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

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C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

C00359

C00364

TK1

C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

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C00458

C00359

C00364

TK1

C00214

C00438

C00337

C00226

C00295

UMPS

C00110

C00110

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

C00527

C00348

POLD3

C00039

C00458

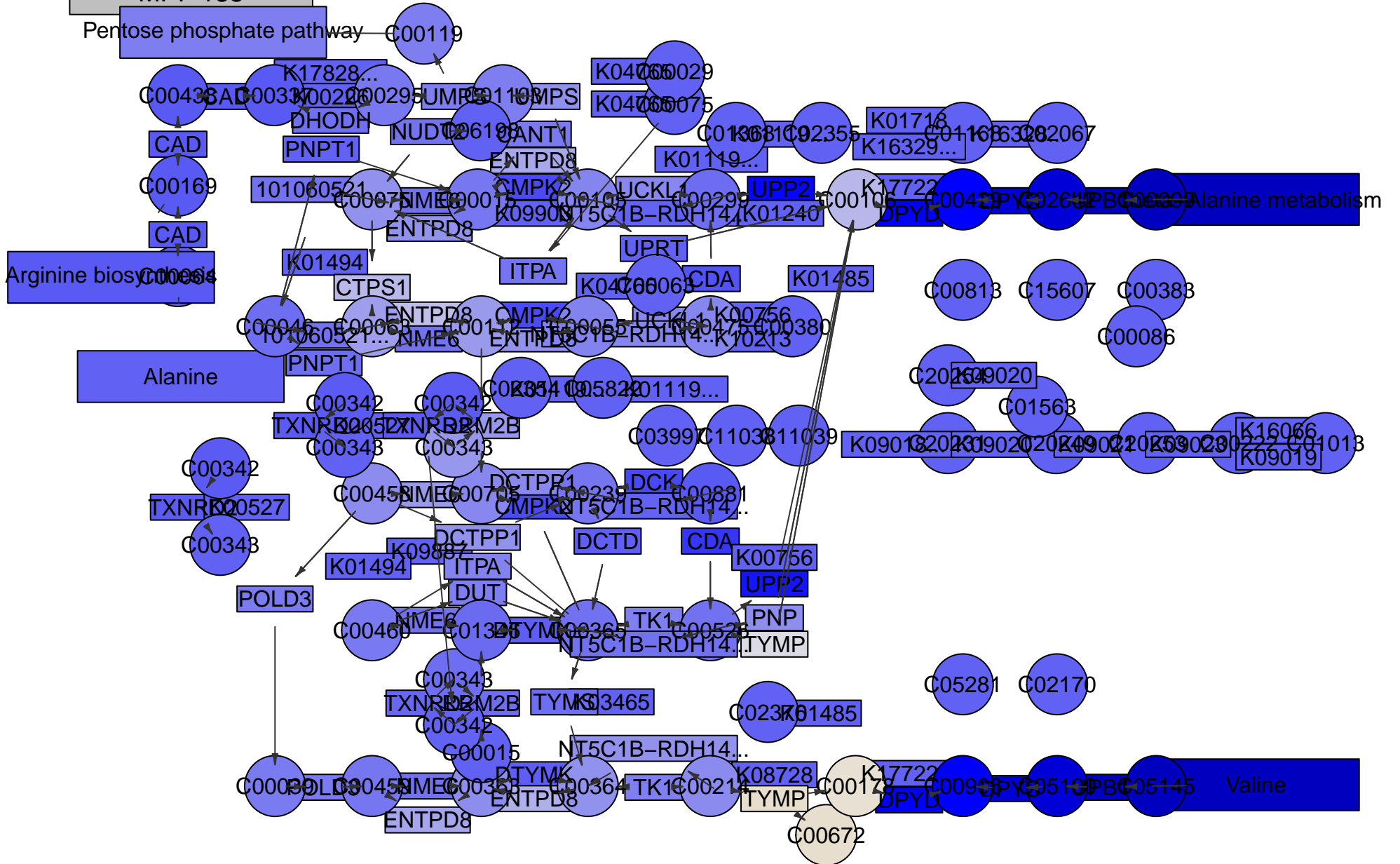
C00359

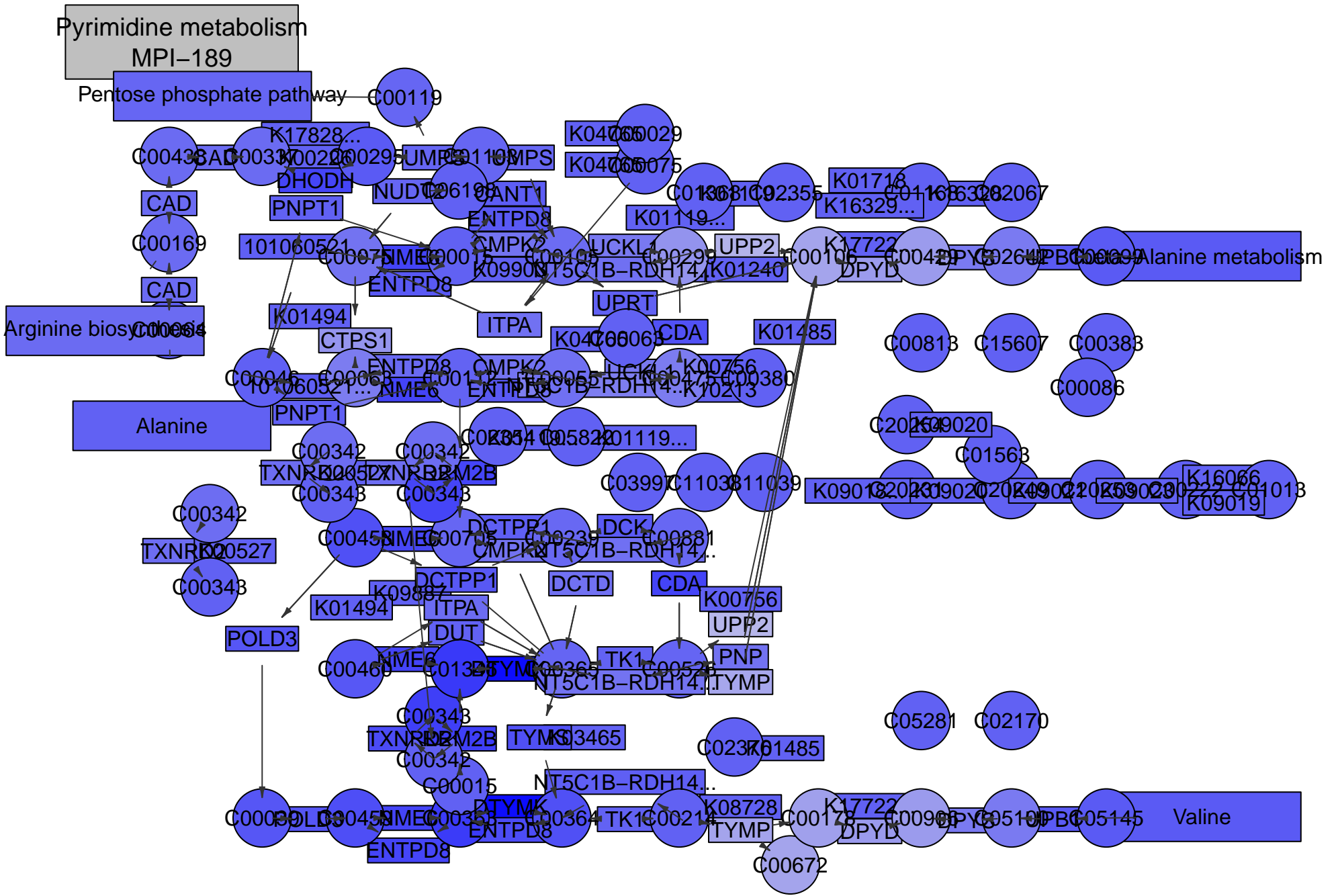
C00364

TK1

Pyrimidine metabolism
MPI-188

Pentose phosphate pathway





Pyrimidine metabolism
MPI-190

Pentose phosphate pathway C00119

C00438 C00330 C00226 C00295 UMRP C01110 MPS K17828... K04066029 K04066075

CAD

PNPT1

NUDT2

C00169

ENTPD8

CMPK2

UCLK1

UPP2

K0119...

C01368 C02355 K01718 C01168 C03282067 K16329...

CAD

101060521

C00075 NME6

ENTPD8

C004195

C004195

C00299

C00106

K17722

DPYD

C00420

PYCB

C05109

UPBC

C00099 Alanine metabolism

Arginine biosynthesis

K01494

CTPS1

ITPA

UPRT

C00063

CDA

K01485

C00813

C15607

C00383

C00086

Alanine

PNPT1

ENTPD8

C00046

C00063

C00119

C00055

UCLK1

C00475

C00380

K10213

C00342

C00342

C00354

C00582

C01119...

C0399

C11038

C11039

K09018

C20190

C20192

C20190

K16066

C01013

TXNR00527

C00343

C00343

C00458

NME6

DCTPP1

C00705

C00239

DCK1

C00881

C0399

C11038

C11039

C00342

TXNR00527

C00348

C00458

NME6

C00705

C00239

DCTPP1

CMPK2

NT5C1B-RDH14...

K09887

K01494

ITPA

DCTD

CDA

UPP2

POLD3

K09887

K01494

ITPA

DUT

C00460

TK1

C00528

PNP

C00460

NME6

C01335

DITYM

C00365

NT5C1B-RDH14...

C00528

TYMP

C00343

TXNR00527

BM2B

TYMS

C03465

C02370

C01485

C05281

C02170

C00343

TXNR00527

BM2B

TYMS

C03465

C02370

C01485

C00342

C00015

NT5C1B-RDH14...

DITYM

C00364

TK1

C00214

K08728

TYMP

C00178

K17722

DPYD

C00908

PYCB

C00039

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DPYD

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PYCB

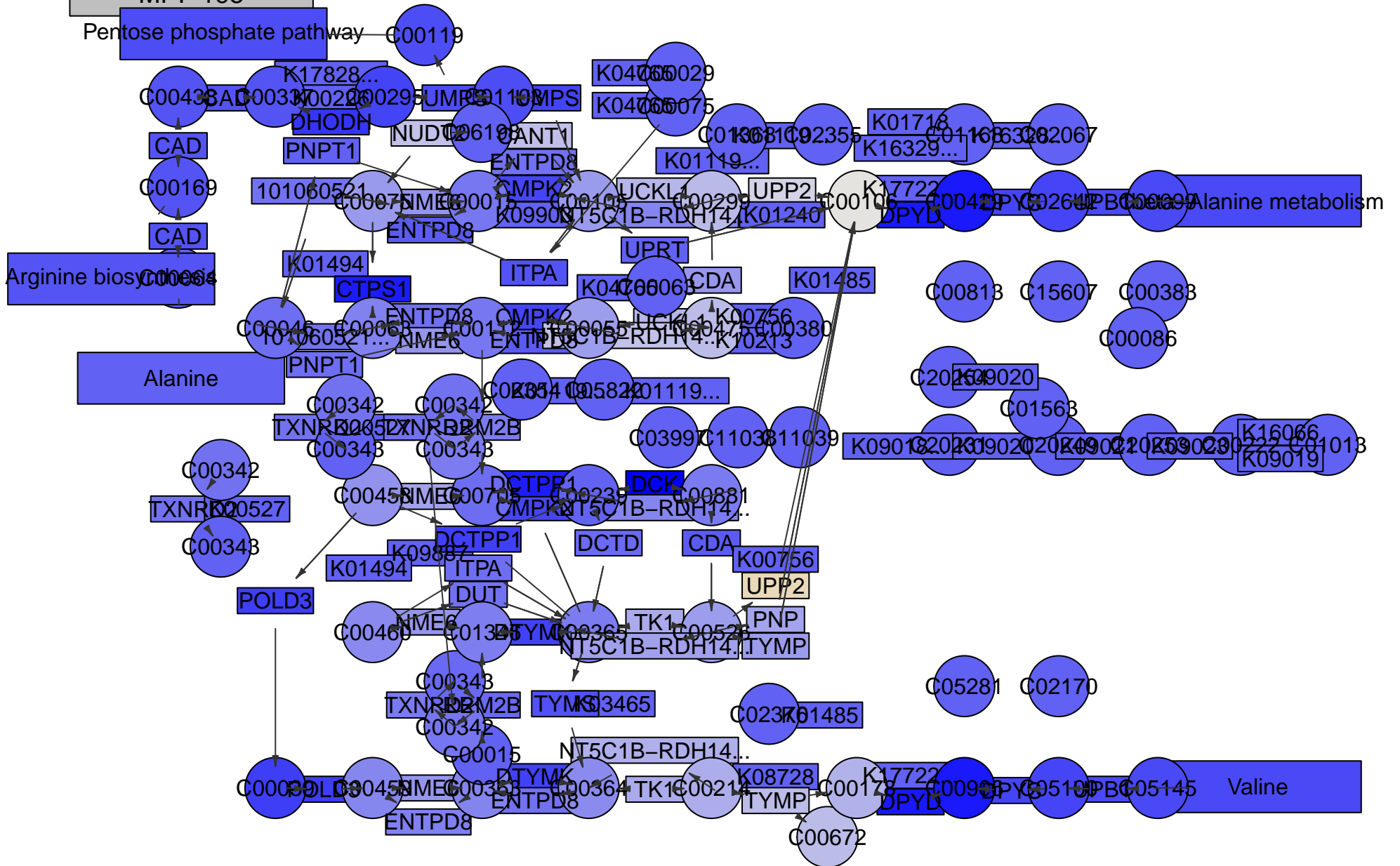
C05109

Valine

C00672

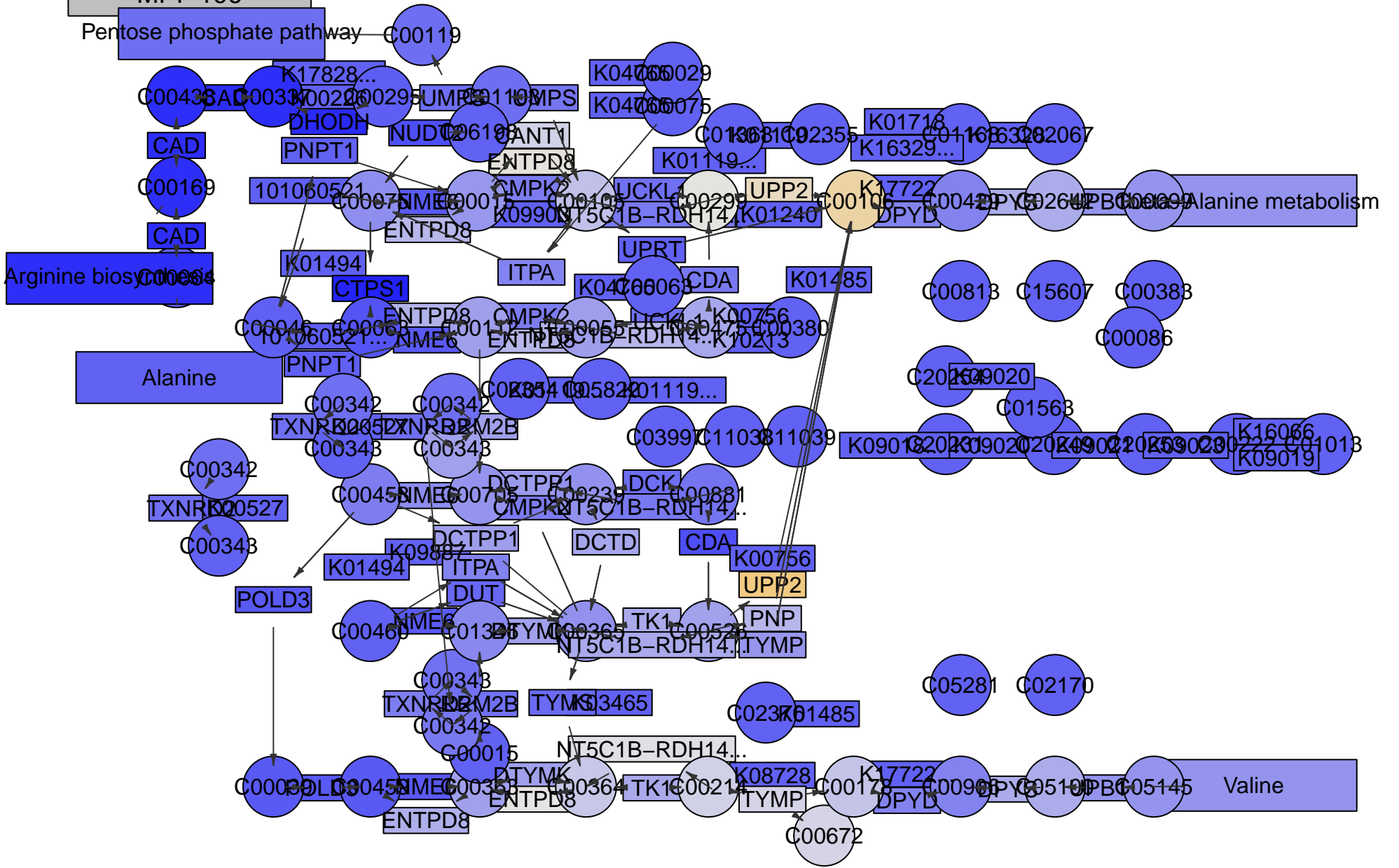
Pyrimidine metabolism
MPI-195

Pentose phosphate pathway



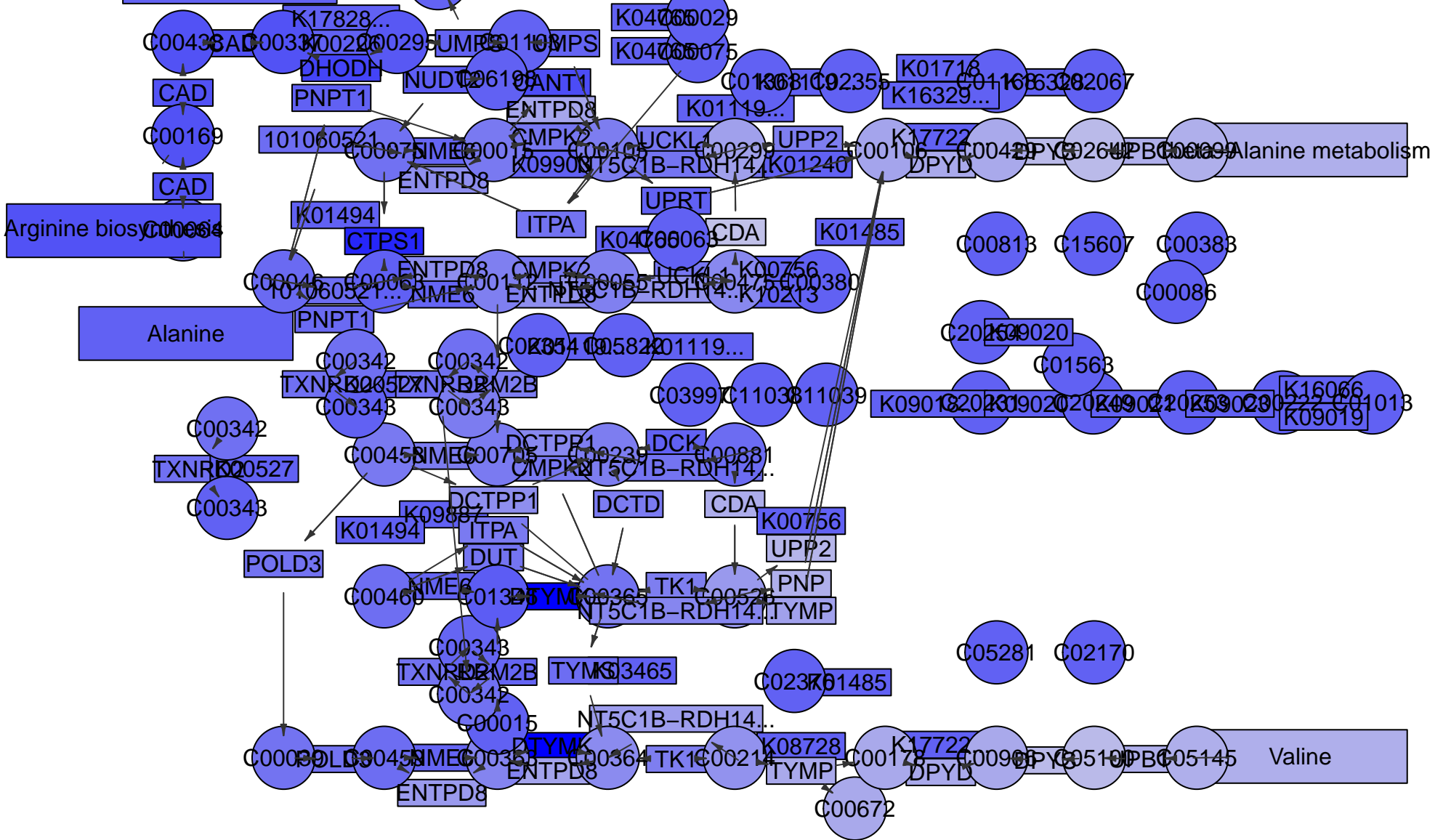
Pyrimidine metabolism
MPI-196

Pentose phosphate pathway
C00119



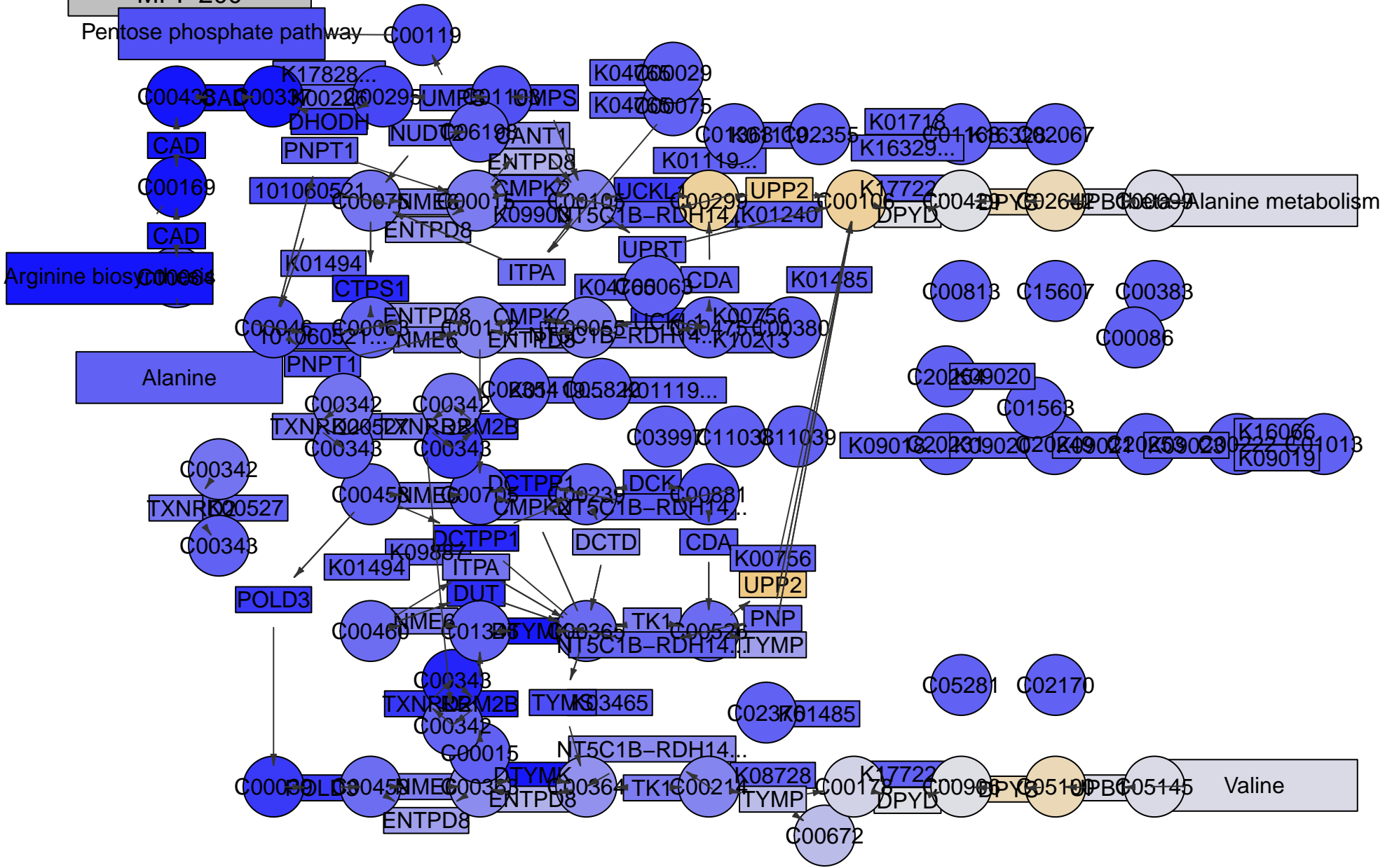
Pyrimidine metabolism
MPI-198

Pentose phosphate pathway C00119



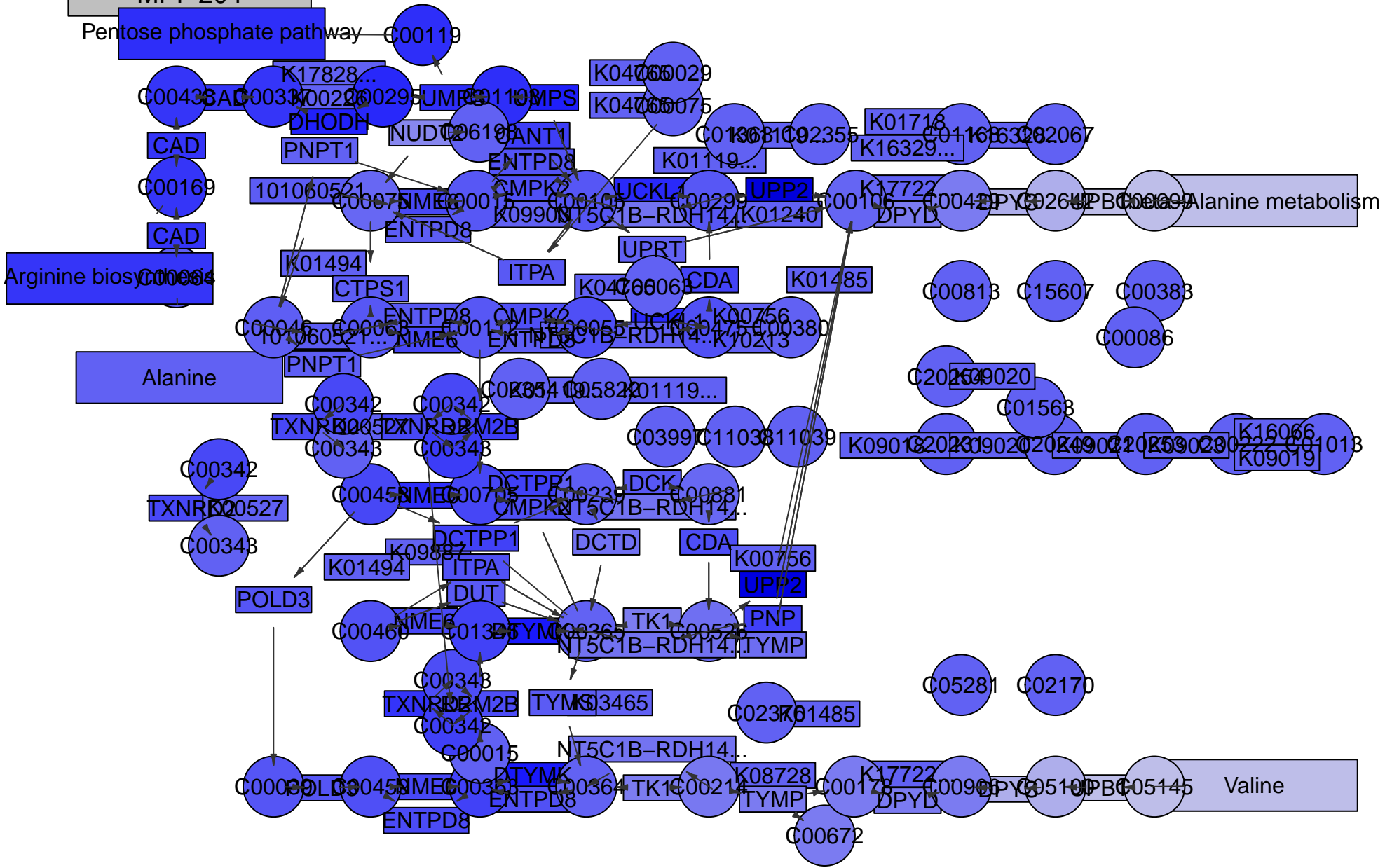
Pyrimidine metabolism
MPI-200

Pentose phosphate pathway C00119



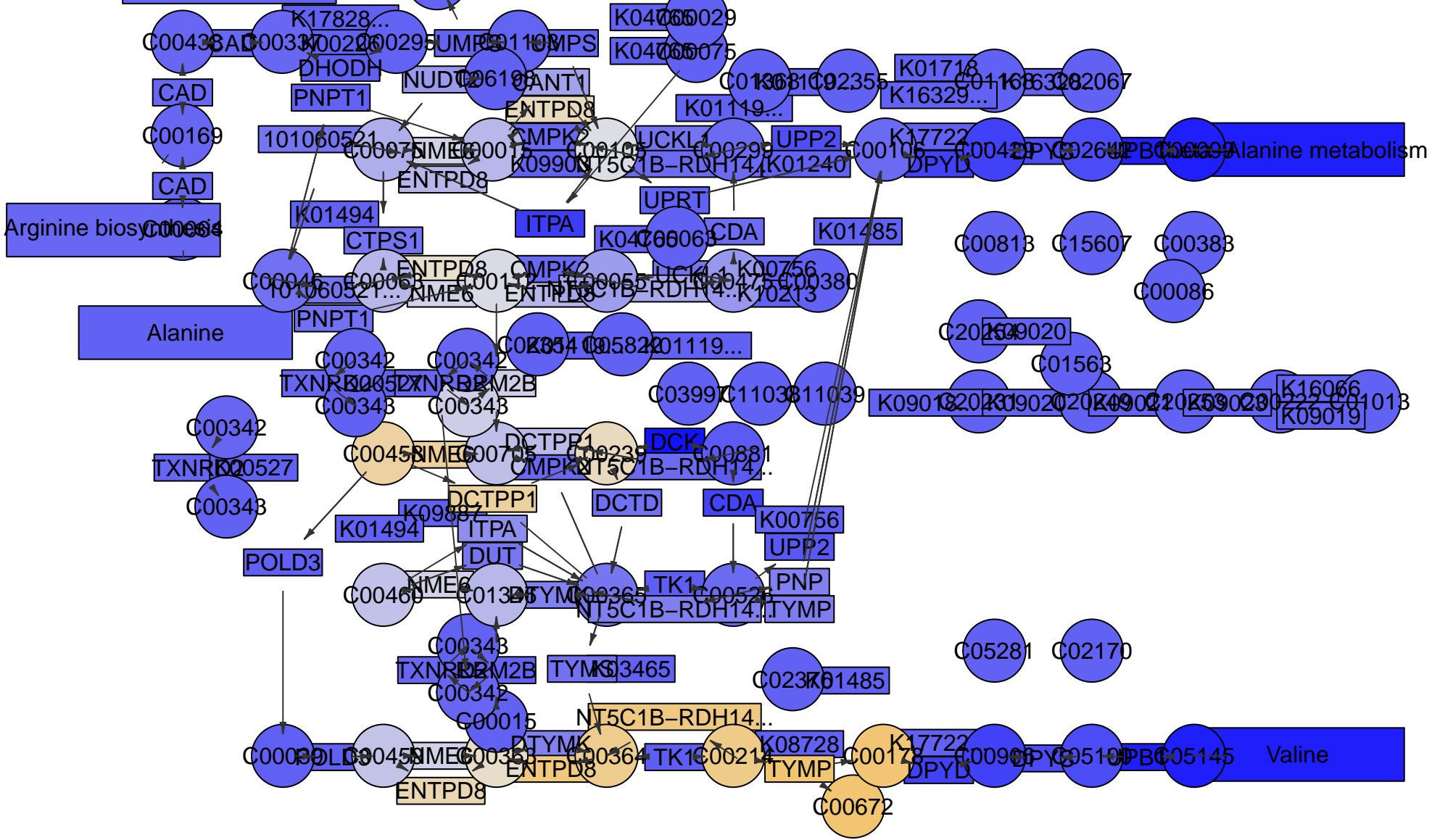
Pyrimidine metabolism
MPI-204

Pentose phosphate pathway
C00119



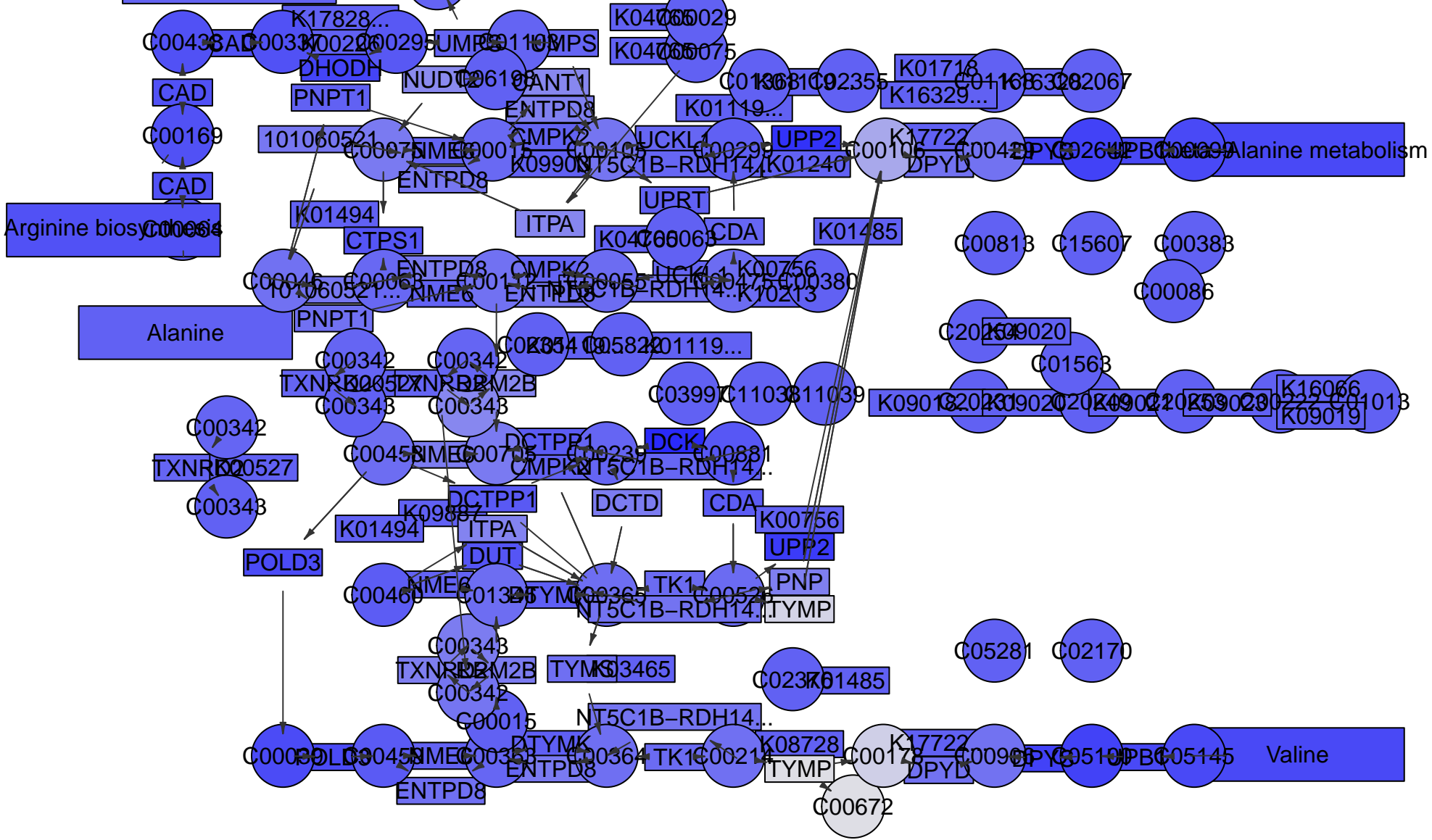
Pyrimidine metabolism
MPI-205

Pentose phosphate pathway C00119



Pyrimidine metabolism
MPI-208

Pentose phosphate pathway
C00119

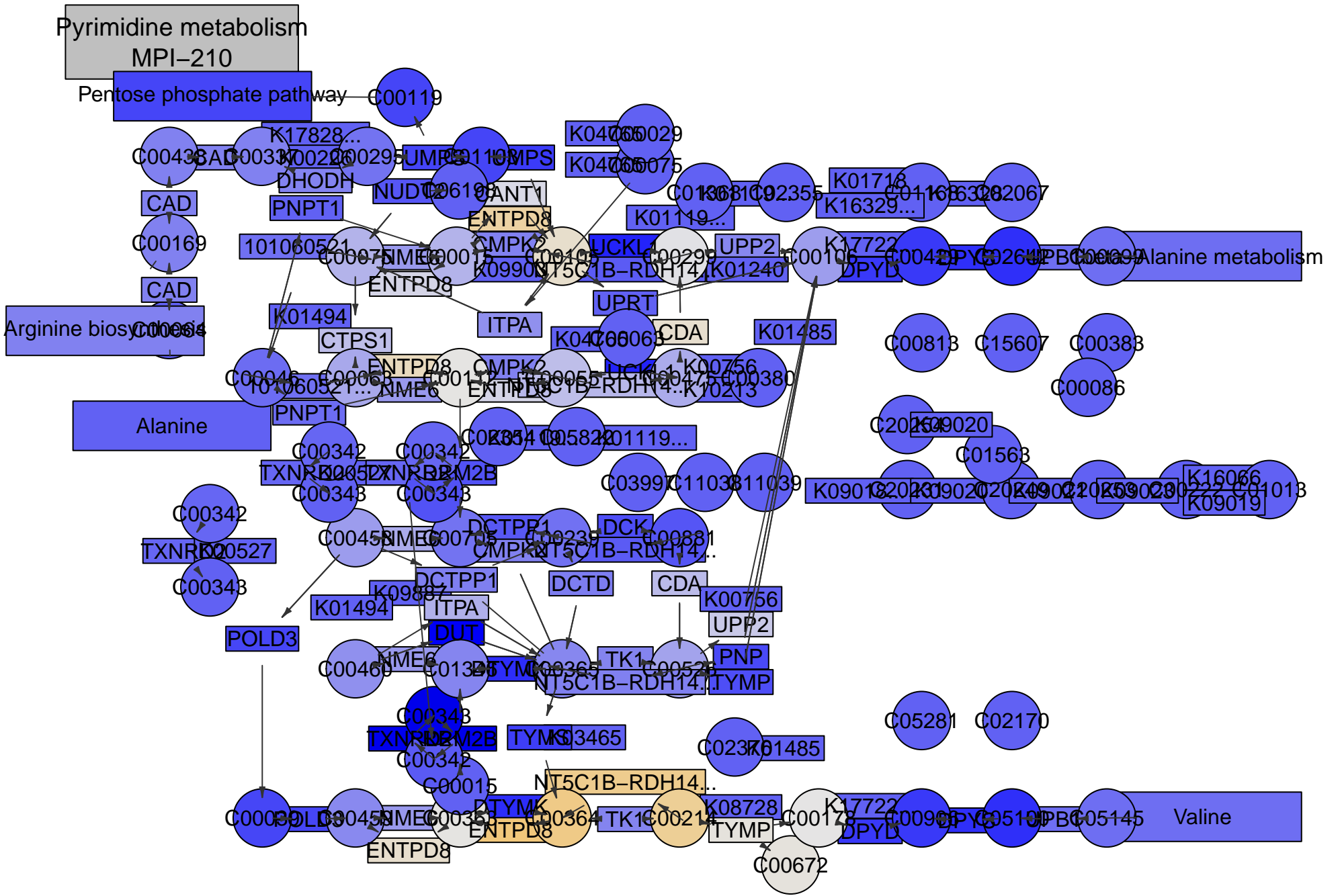


Alanine metabolism

Arginine biosynthesis

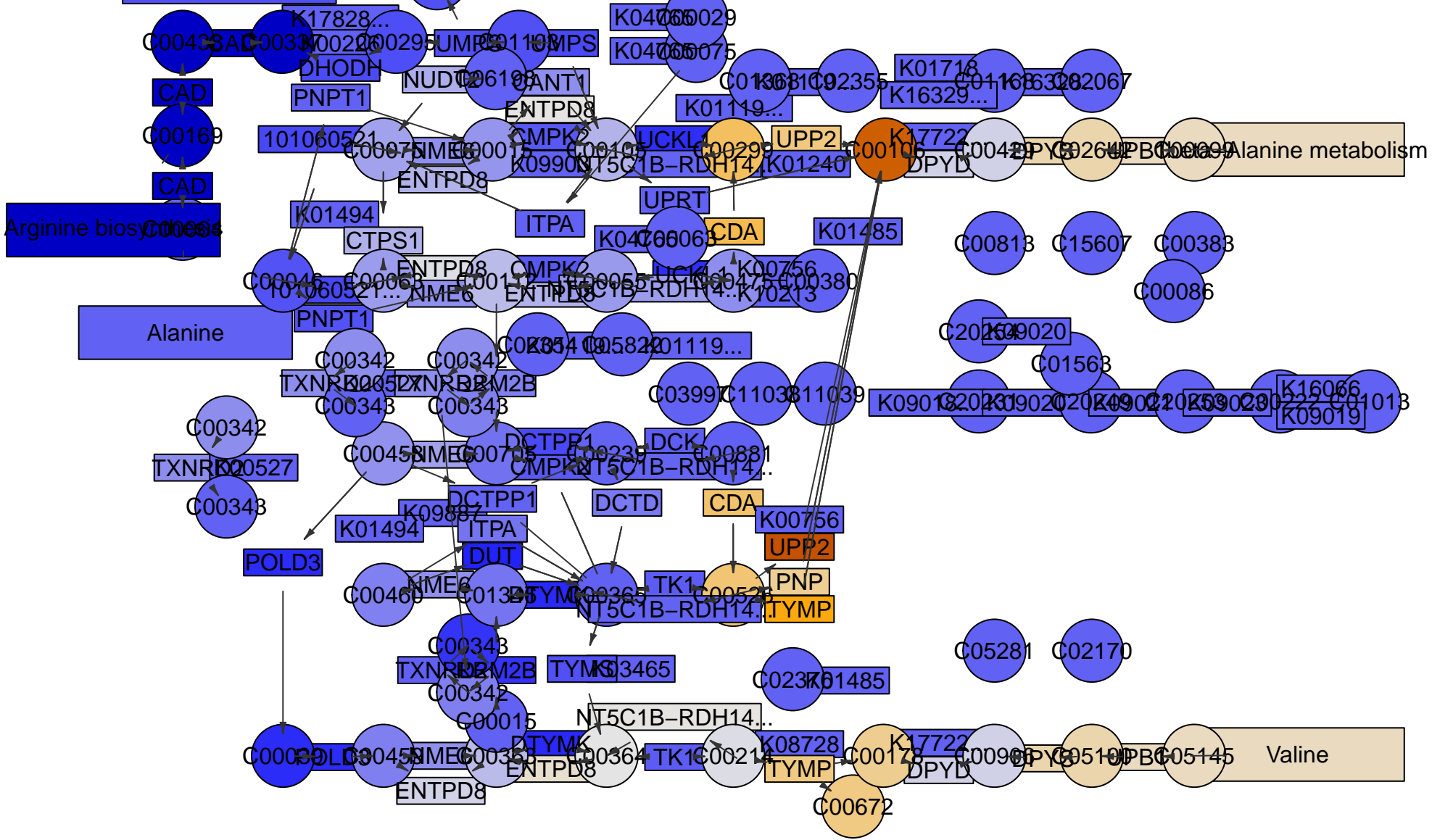
Alanine

Valine



Pyrimidine metabolism
MPI-212

Pentose phosphate pathway
C00119



CAD

CAD

Arginine biosynthesis

Alanine

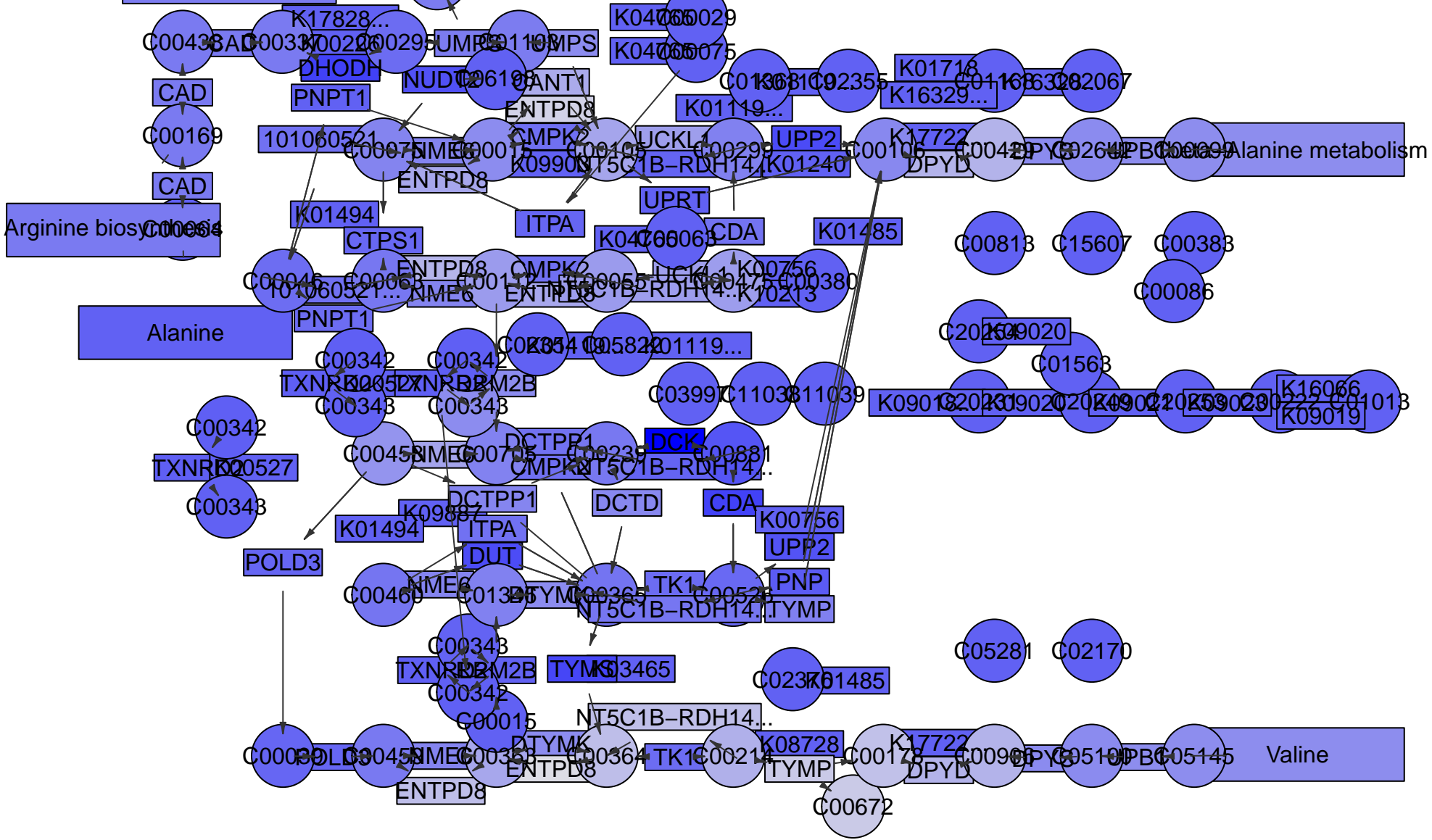
POLD3

Alanine metabolism

Valine

Pyrimidine metabolism
MPI-215

Pentose phosphate pathway C00119

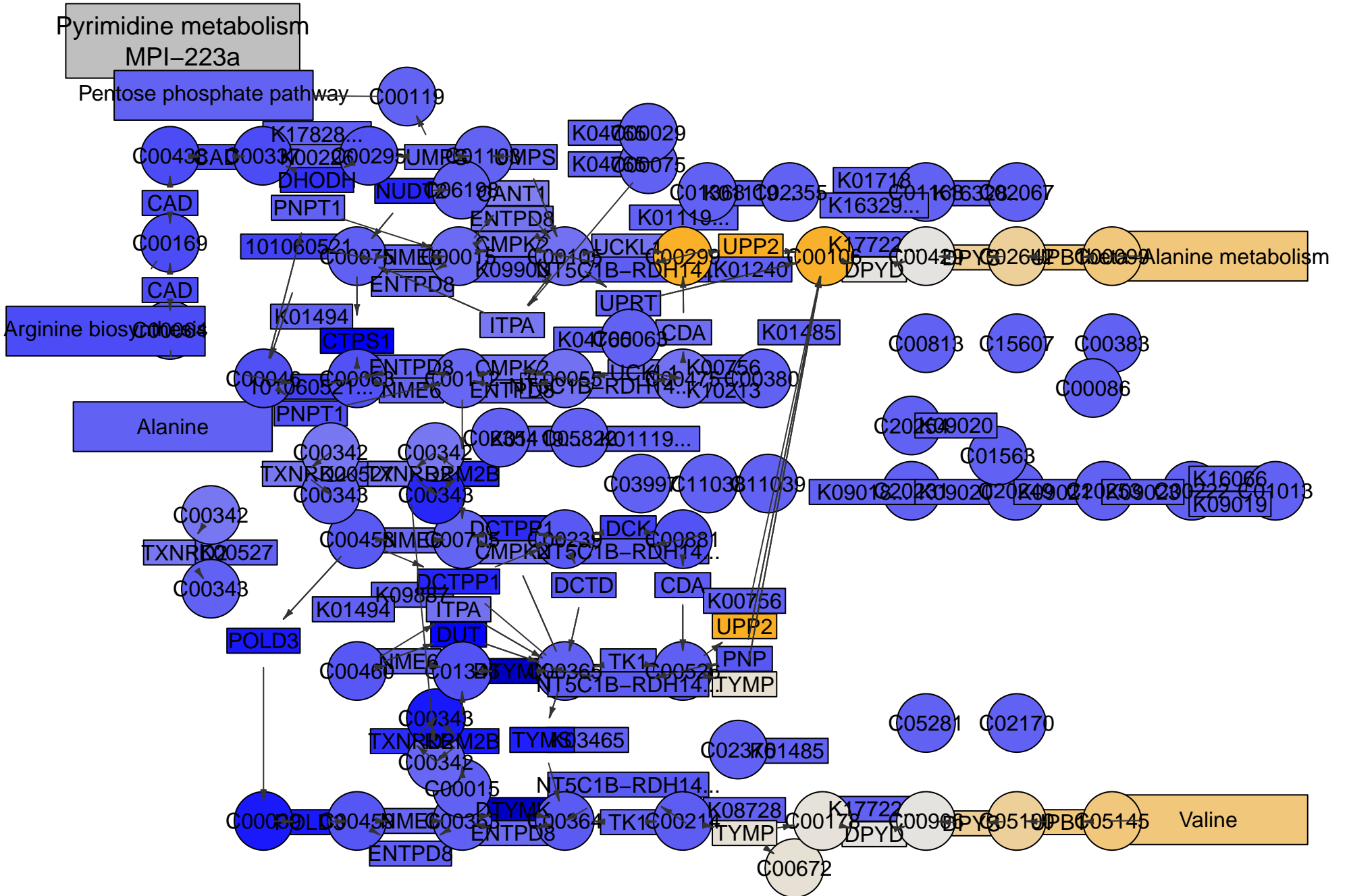


Arginine biosynthesis C00614

Alanine

Alanine metabolism

Valine

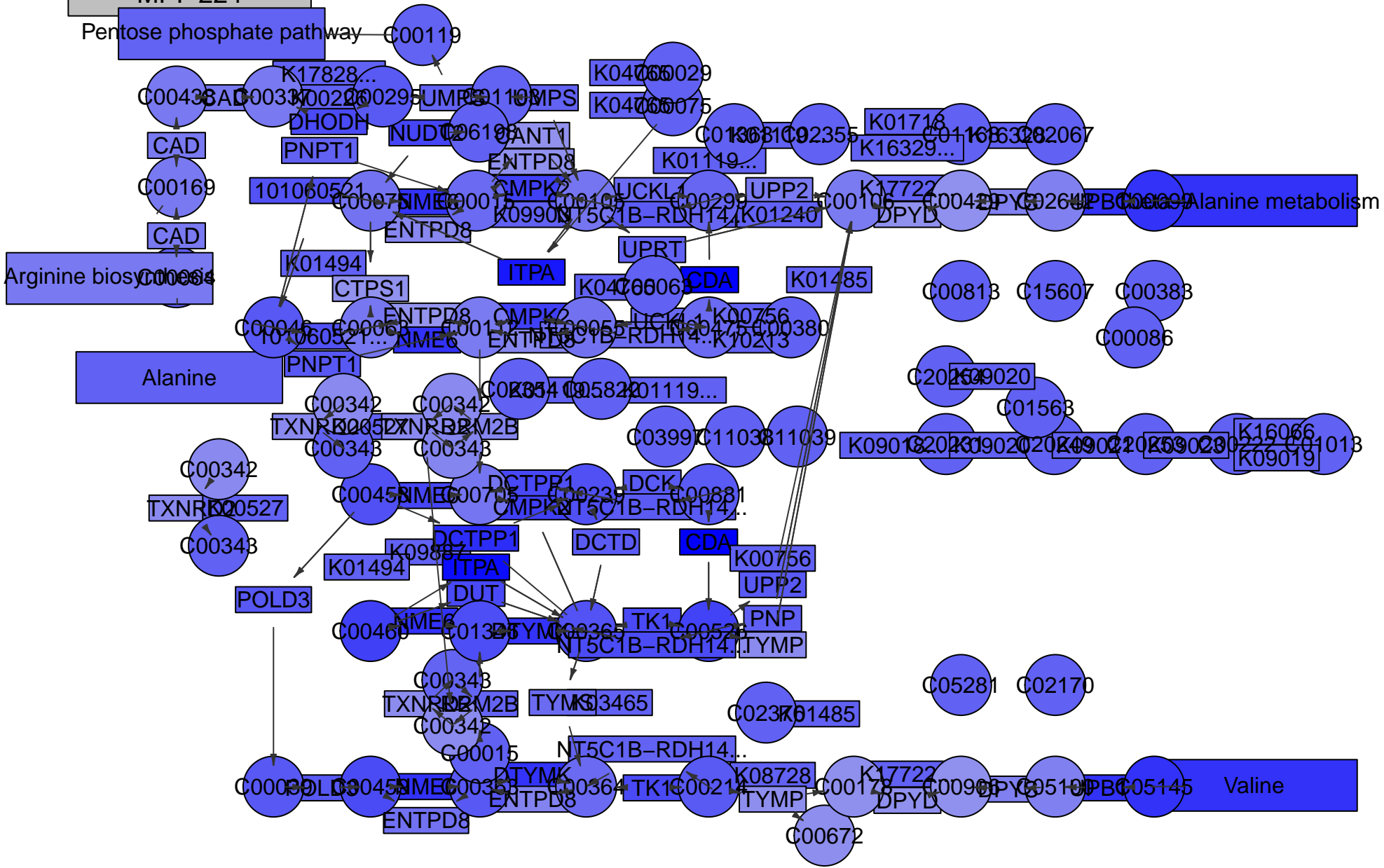


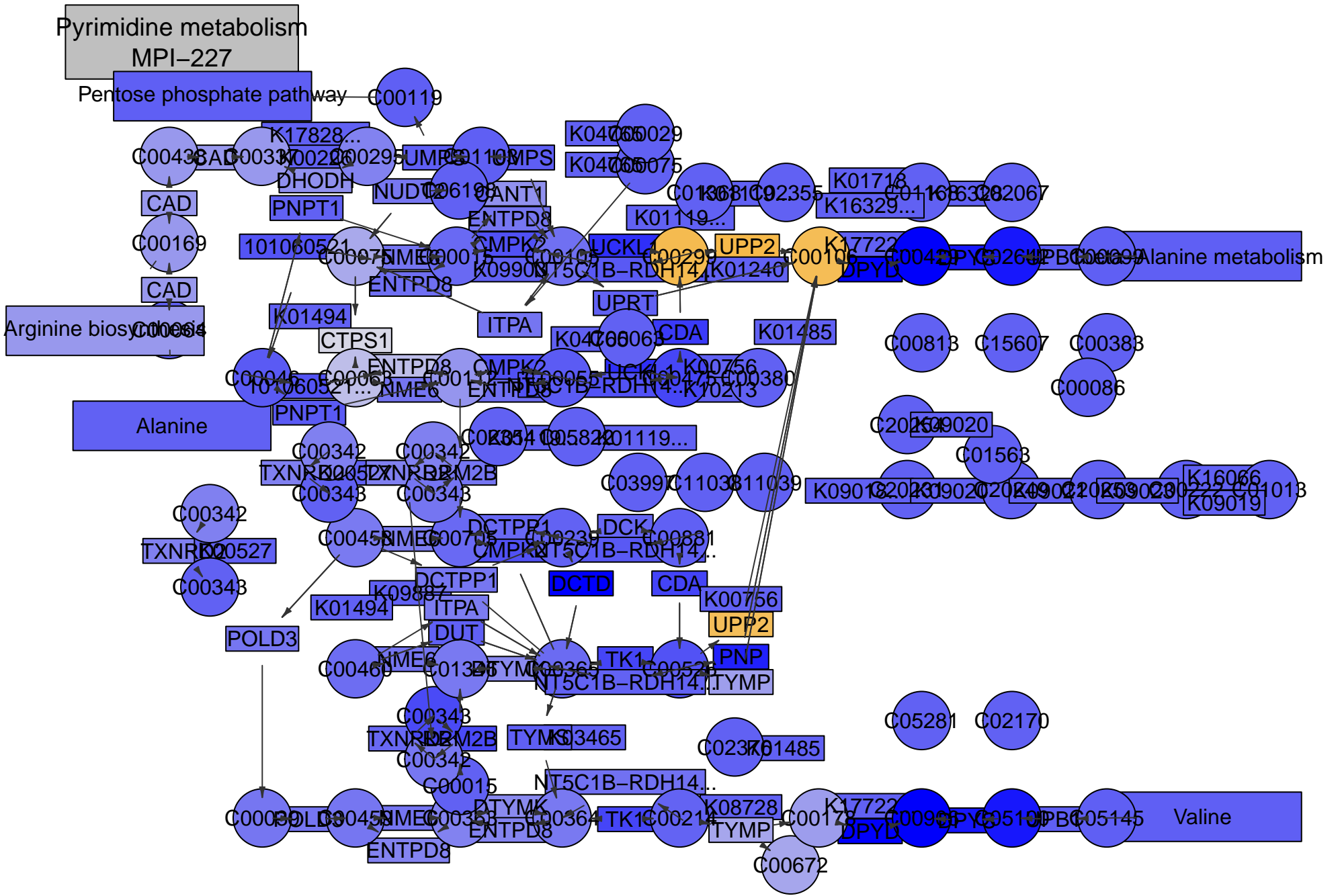
Pyrimidine metabolism

MPI-224

Pentose phosphate pathway

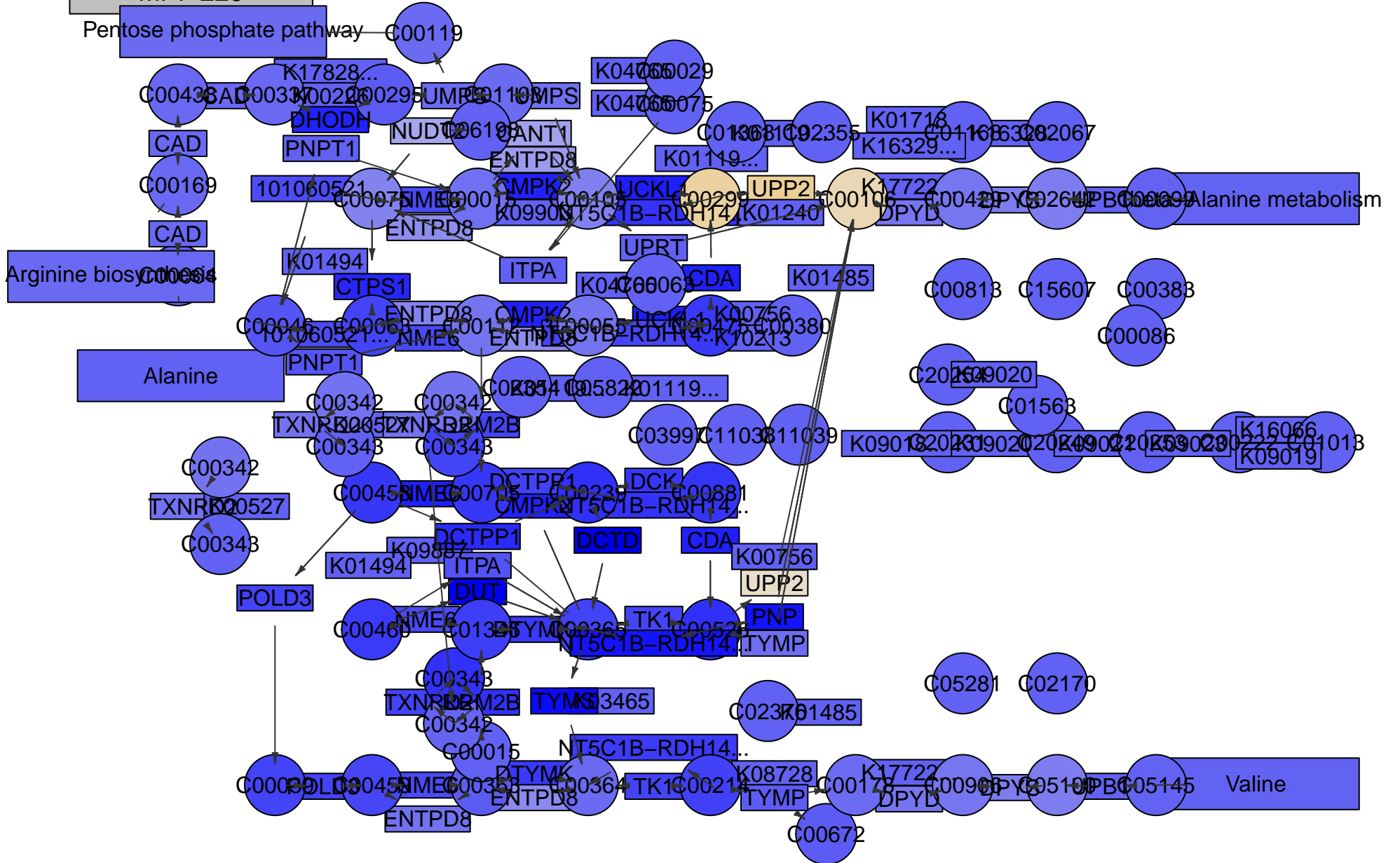
C00119

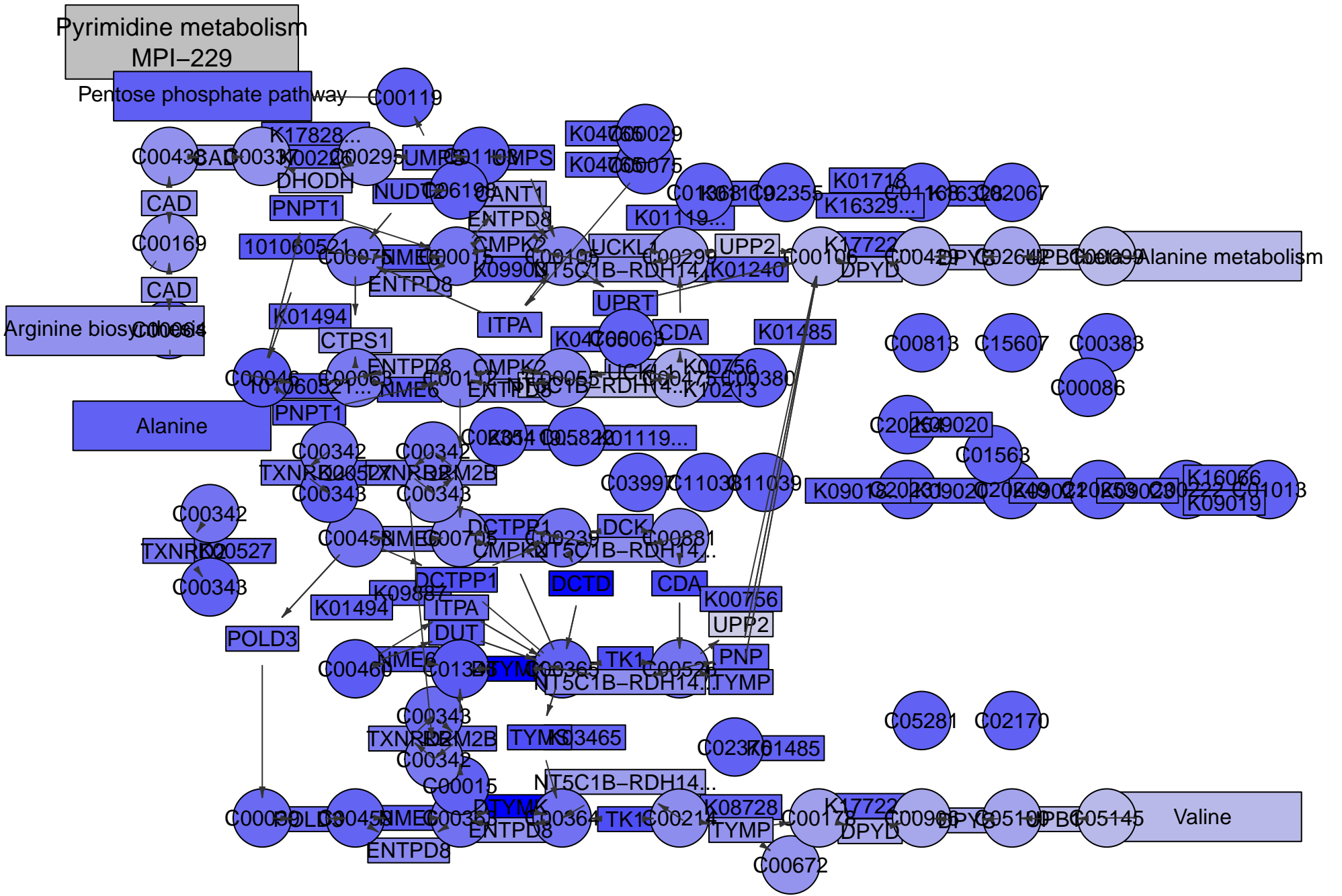




Pyrimidine metabolism
MPI-228

Pentose phosphate pathway
C00119





Pyrimidine metabolism

MPI-230

Pentose phosphate pathway

C00119

C00438

CAD

C00169

CAD

Arginine biosynthesis

C00614

Alanine

C00342

TXNRD00527

C00348

POLD3

C00039

C00458

ENTPD8

C00226

PNPT1

101060521

K01494

CTPS1

C00946

PNPT1

C00342

TXNRD00527

C00348

C00458

NME6

C00460

C01305

TXNRD00527

C00348

C00342

C00015

TYMK

ENTPD8

C00295

NUDT2

C00071

ENTPD8

ENTPD8

ENTPD8

ENTPD8

TXNRD00527

C00348

C00458

NME6

C01305

C00348

C00342

C00015

TYMK

ENTPD8

C00295

NUDT2

C00071

ENTPD8

ENTPD8

ENTPD8

ENTPD8

TXNRD00527

C00348

C00458

NME6

C01305

C00348

C00342

C00015

TYMK

ENTPD8

C00110

UMPS

C00105

CMPK2

ITPA

CMPK2

ENTPD8

C03540

C00705

DCTPP1

NME6

C01305

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C00348

C00342

C00015

TYMK

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CMPK2

ITPA

CMPK2

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C00705

DCTPP1

NME6

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CMPK2

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TYMK

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UPP2

UPRT

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C11039

UPP2

PNP

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C00178

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C00672

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C0399C

C11038

C11039

UPP2

PNP

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C00178

TYMP

C00672

C01718

K16329...

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UPRT

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UPP2

C0399C

C11038

C11039

UPP2

PNP

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C02370

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TYMP

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C0399C

C11038

C11039

UPP2

PNP

C00528

C02370

C01485

C00178

TYMP

C00672

C00105

UPP2

UPRT

C00105

UPP2

C0399C

C11038

C11039

UPP2

PNP

C00528

C02370

C01485

C00178

TYMP

C00672

C00105

UPP2

UPRT

C00105

UPP2

C0399C

C11038

C11039

UPP2

PNP

C00528

C02370

C01485

C00178

TYMP

C00672

C00105

UPP2

UPRT

C00105

UPP2

C0399C

C11038

C11039

UPP2

PNP

C00528

C02370

C01485

C00178

TYMP

C00672

C00105

UPP2

UPRT

C00105

UPP2

C0399C

C11038

C11039

UPP2

PNP

C00528

C02370

C01485

C00178

TYMP

C00672

Alanine metabolism

C00813

C15607

C00383

C00086

C20150

C019020

C01563

C02043

C019020

C049020

C059020

C01013

K16066

K09019

C01013

C01013

C01013

C01013

C01013

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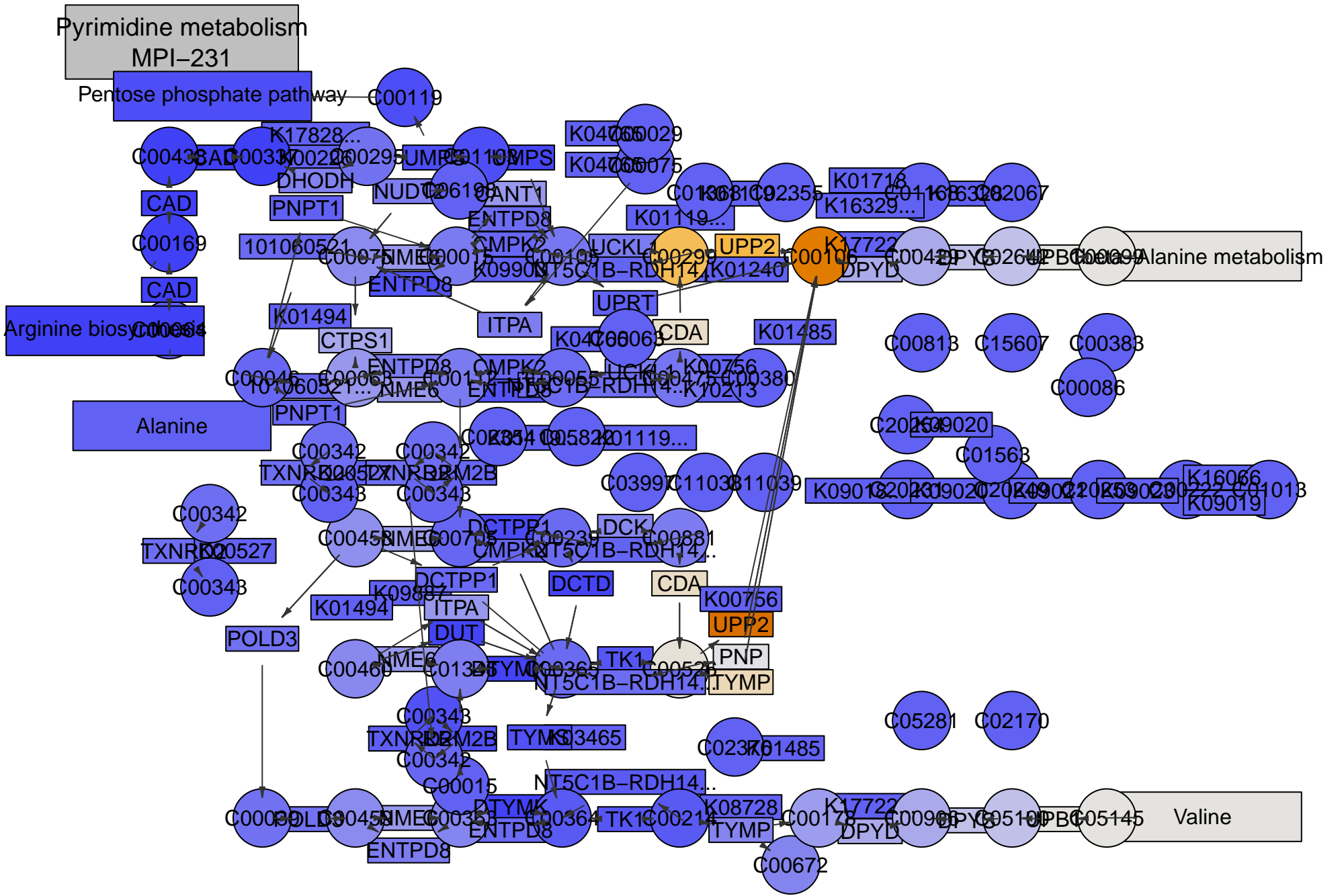
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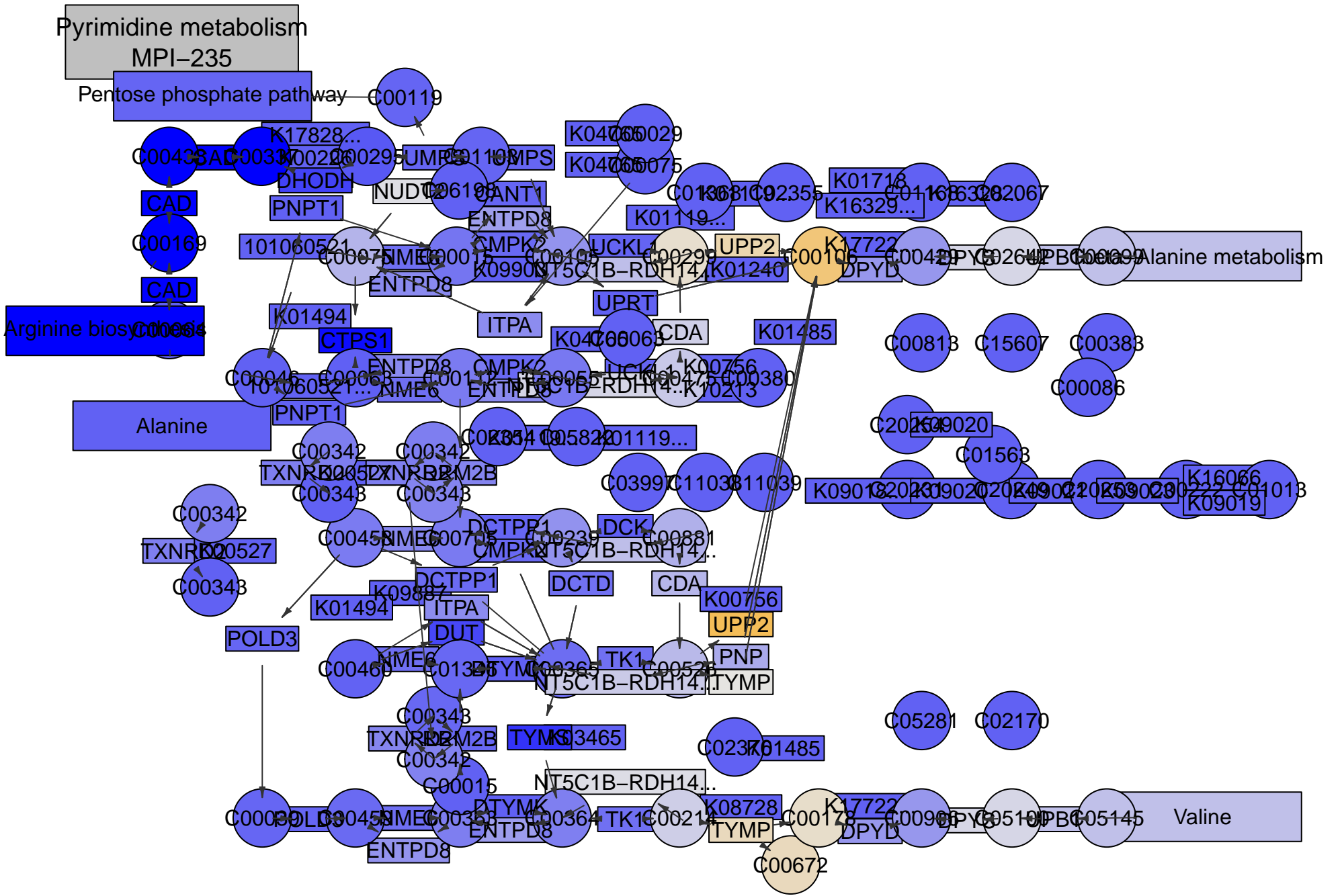
C01013

C01013

C01013

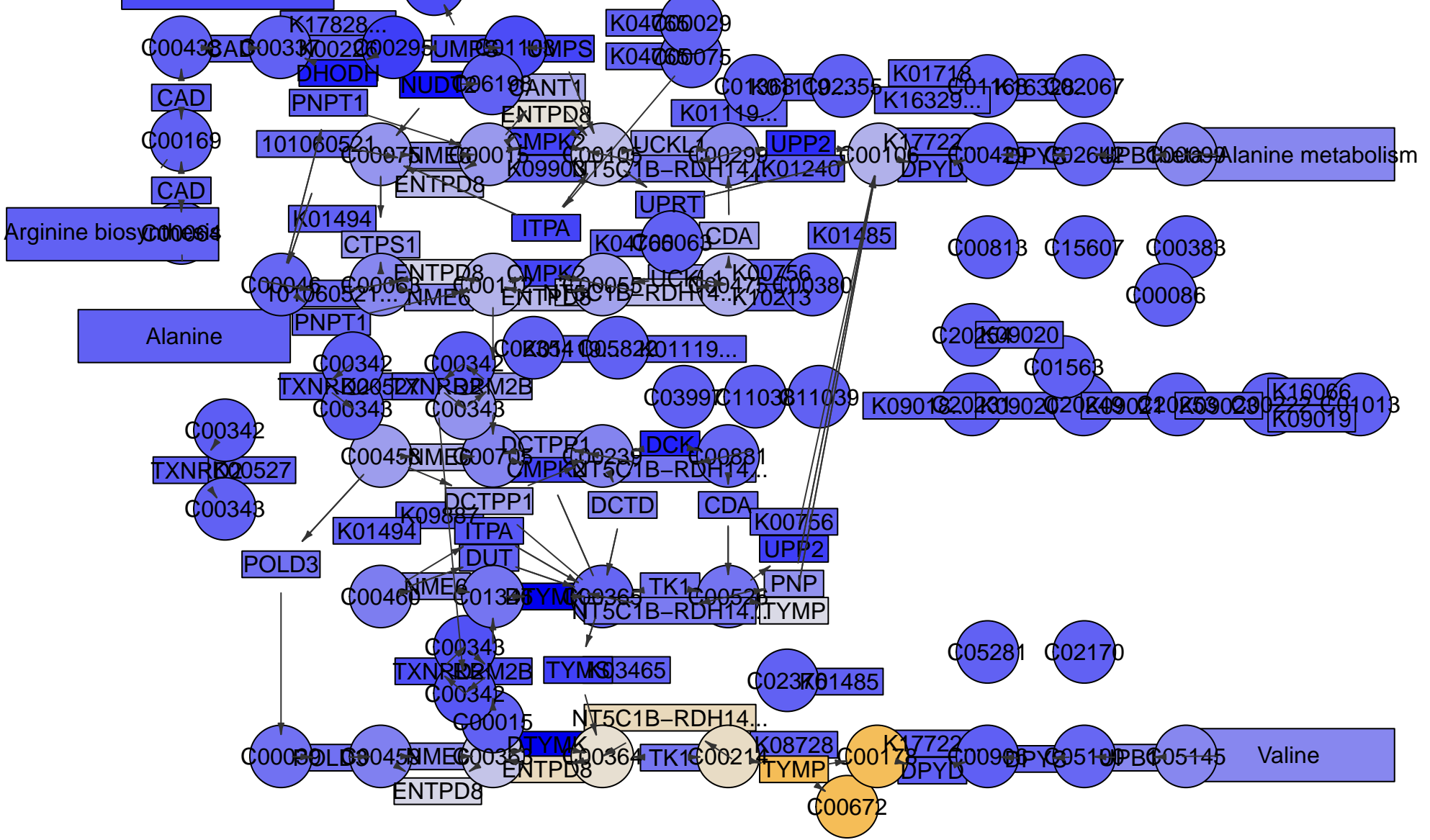
C01013

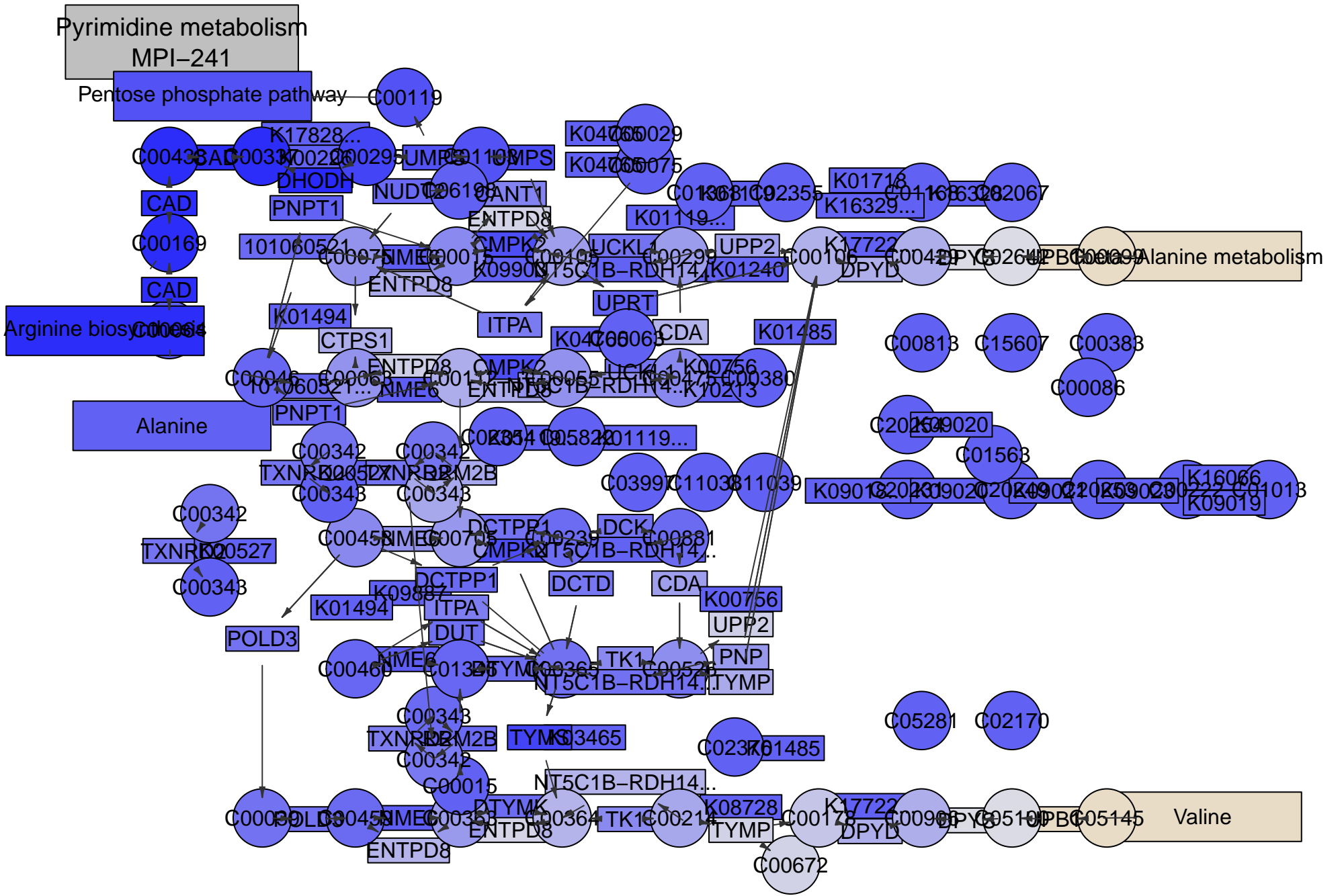


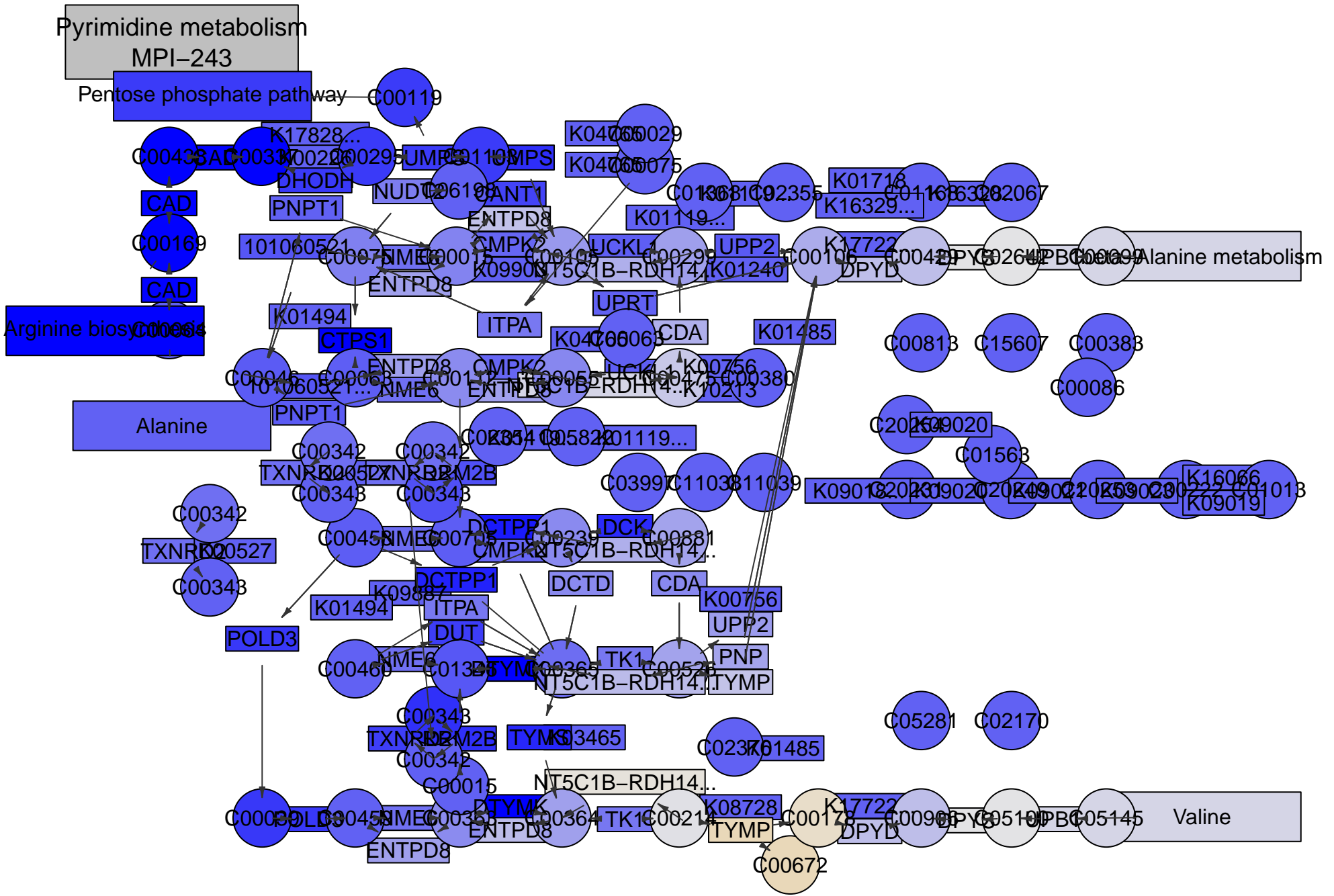


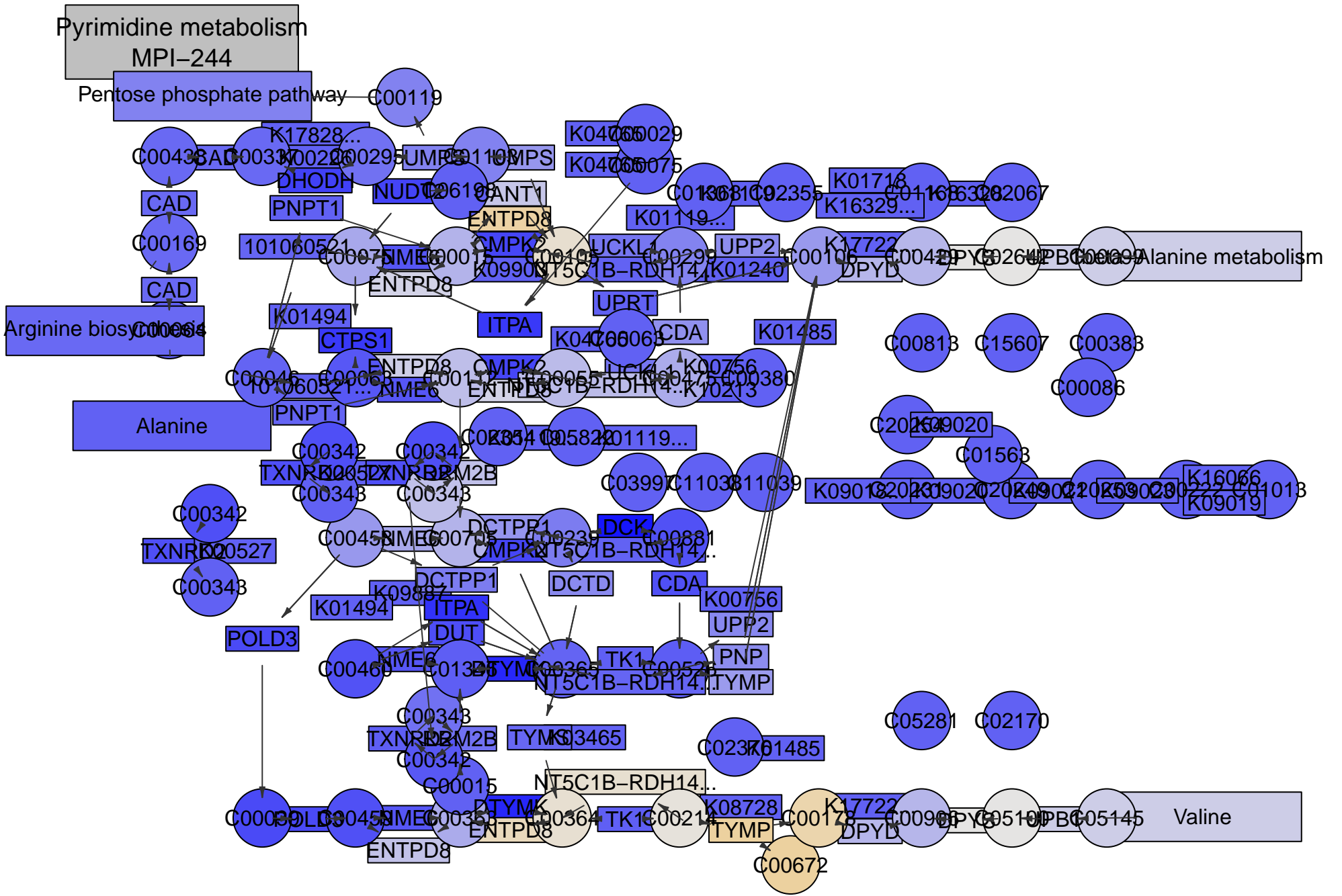
Pyrimidine metabolism
MPI-239

Pentose phosphate pathway



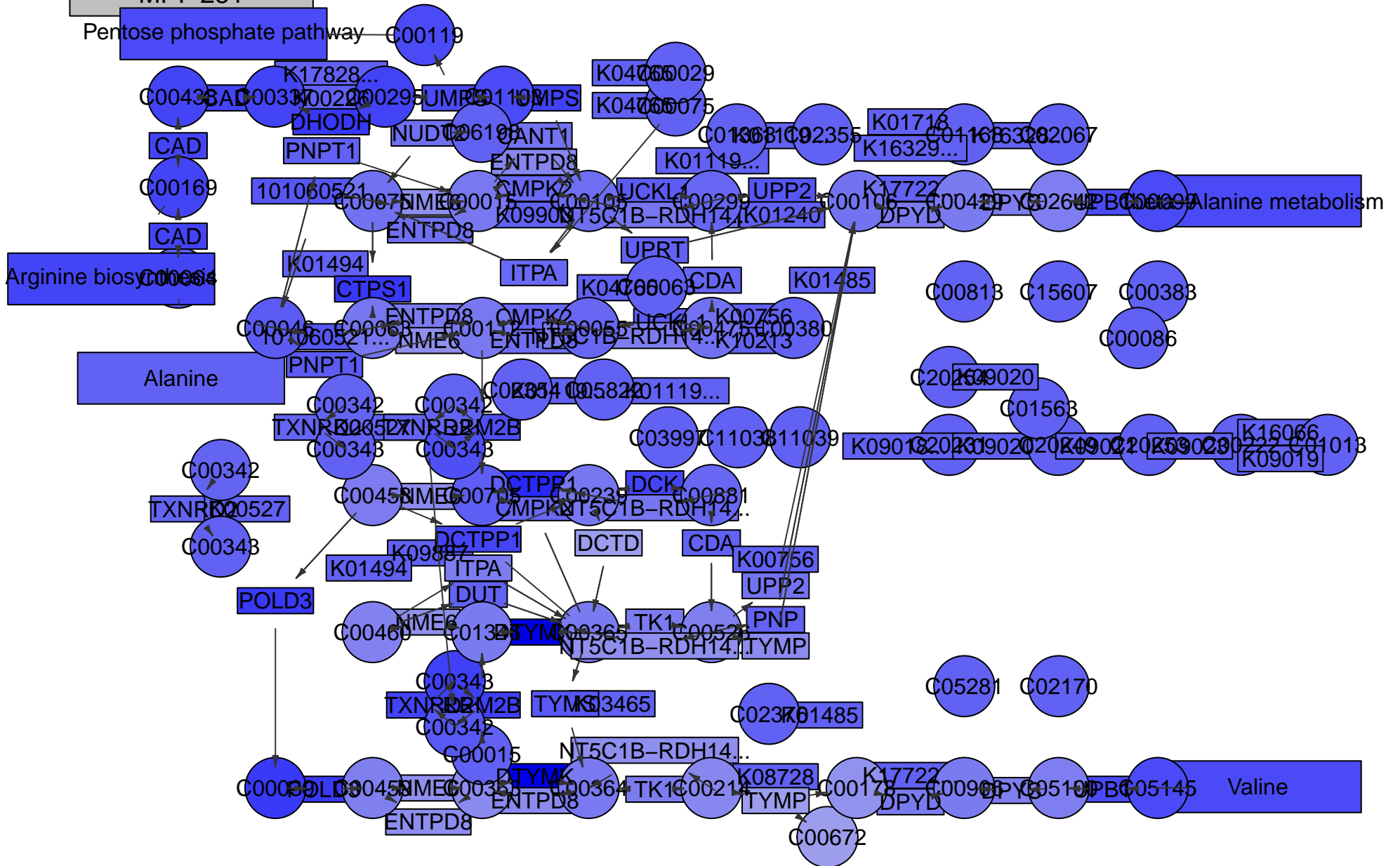






Pyrimidine metabolism
MPI-251

Pentose phosphate pathway C00119



Pyrimidine metabolism
MPI-223b

Pentose phosphate pathway

