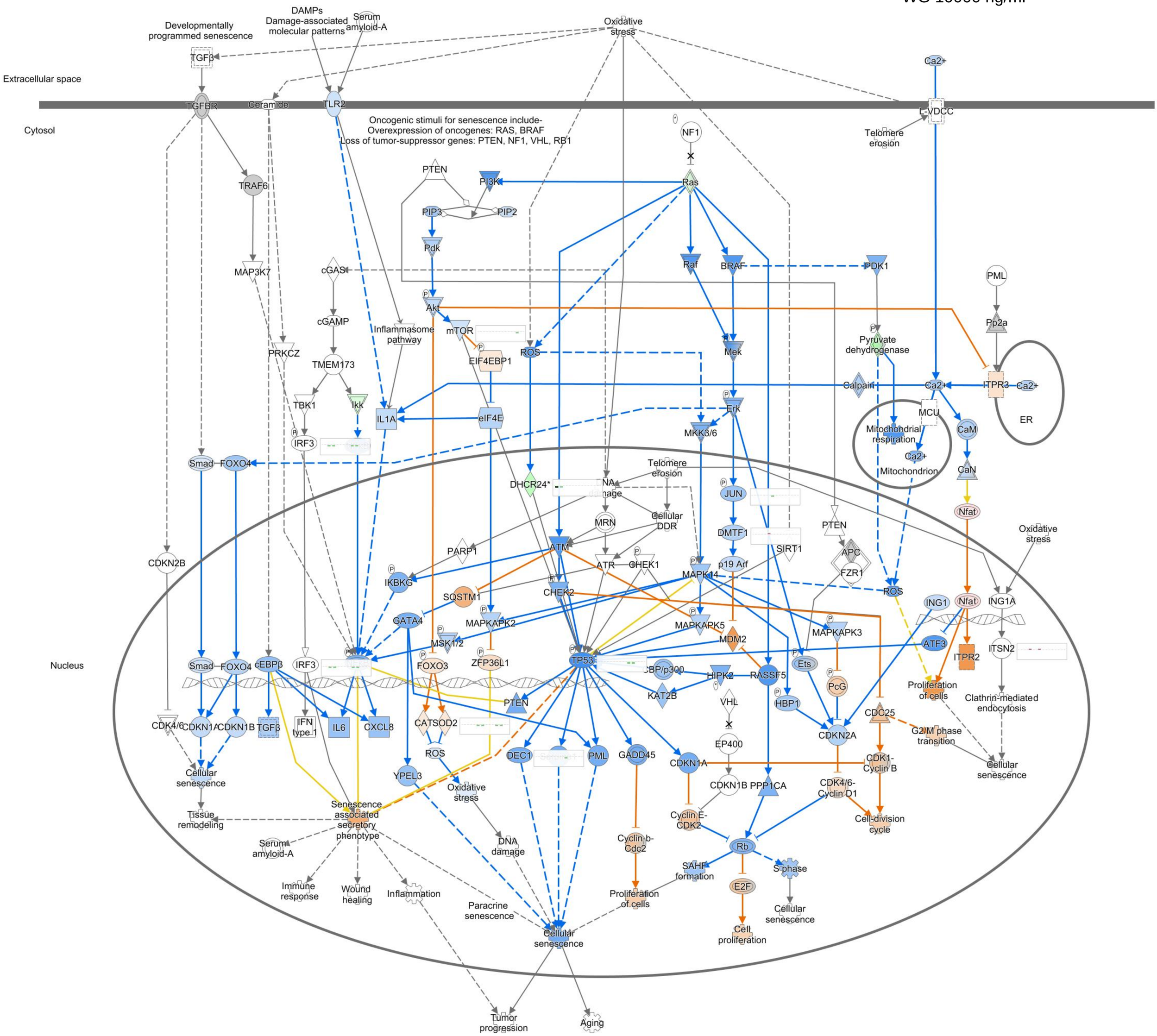
Cellular senescence is an anti-proliferative program that restricts the propagation of cells subjected to different kinds of stress.
Senescence has important role in numerous biological processes such maintenance of tissue homeostasis, wound healing, embryonic development
and also is implicated in organismal aging, in development of age-related diseases and cancer progression.
These detrimental effects are primarily driven by the pro-inflammatory and hyper-secretory phenotype of senescent cells.

WG 10000 ng/ml



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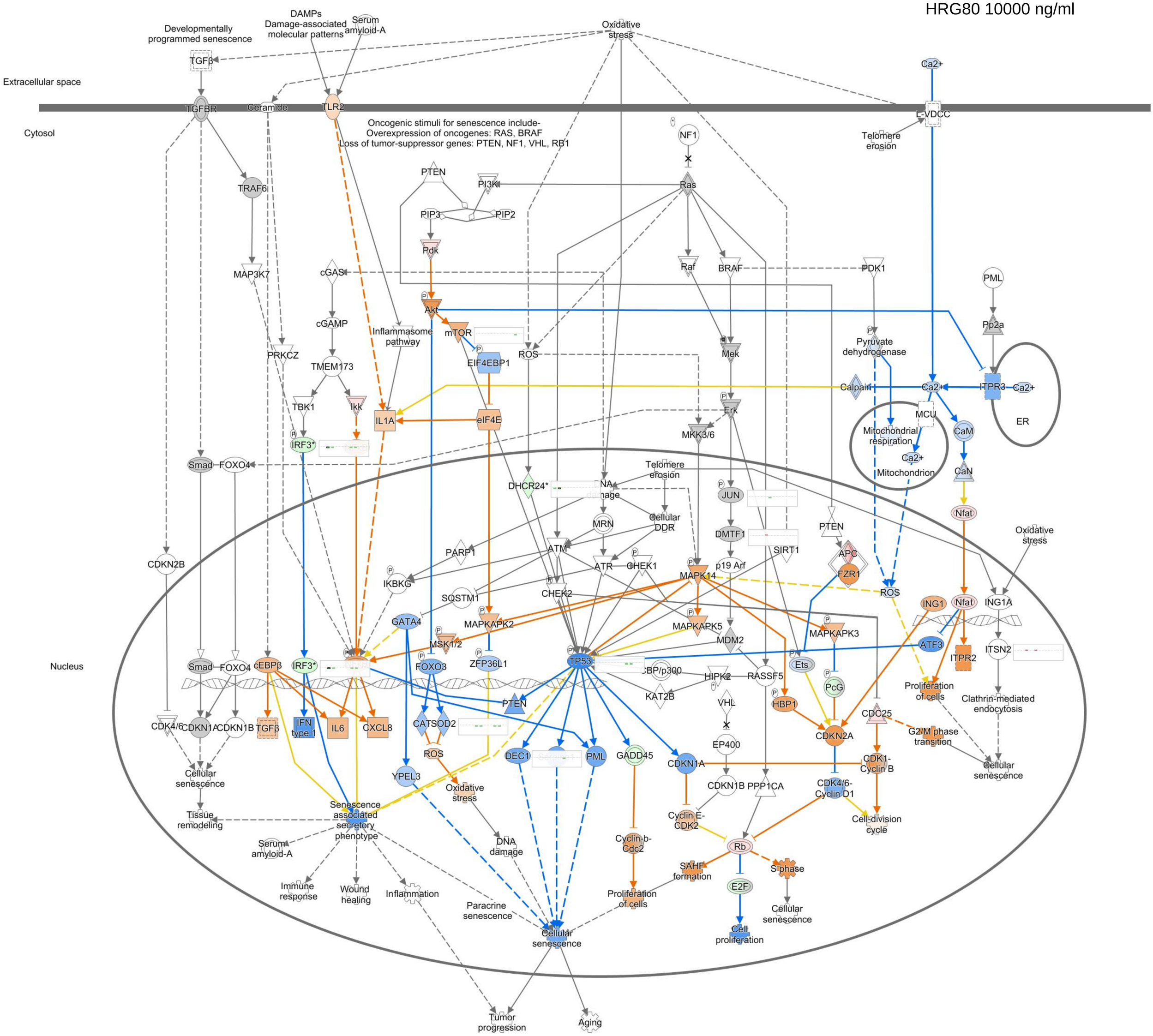
HRG80 10000 ng/ml



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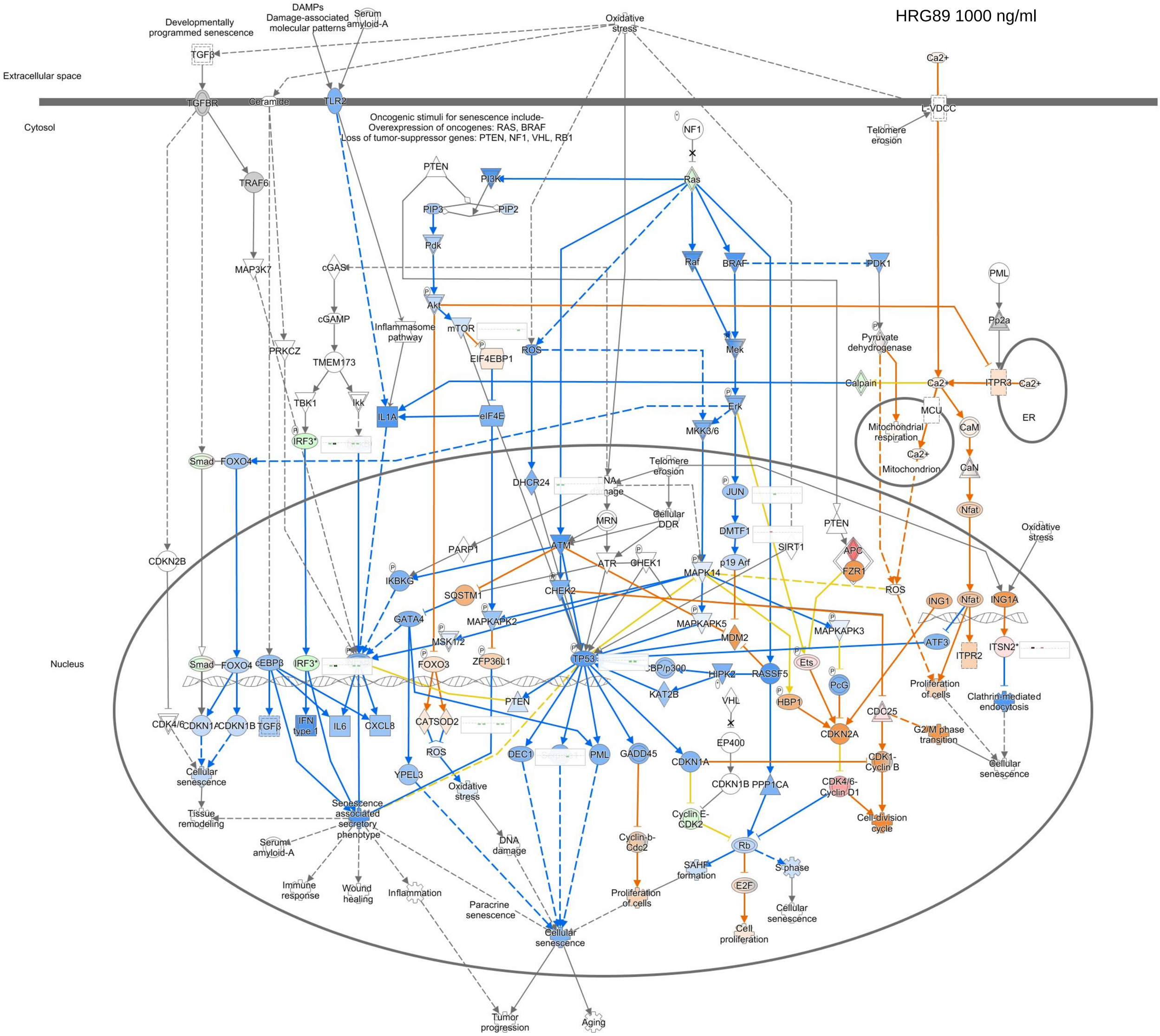
HRG89 1000 ng/ml



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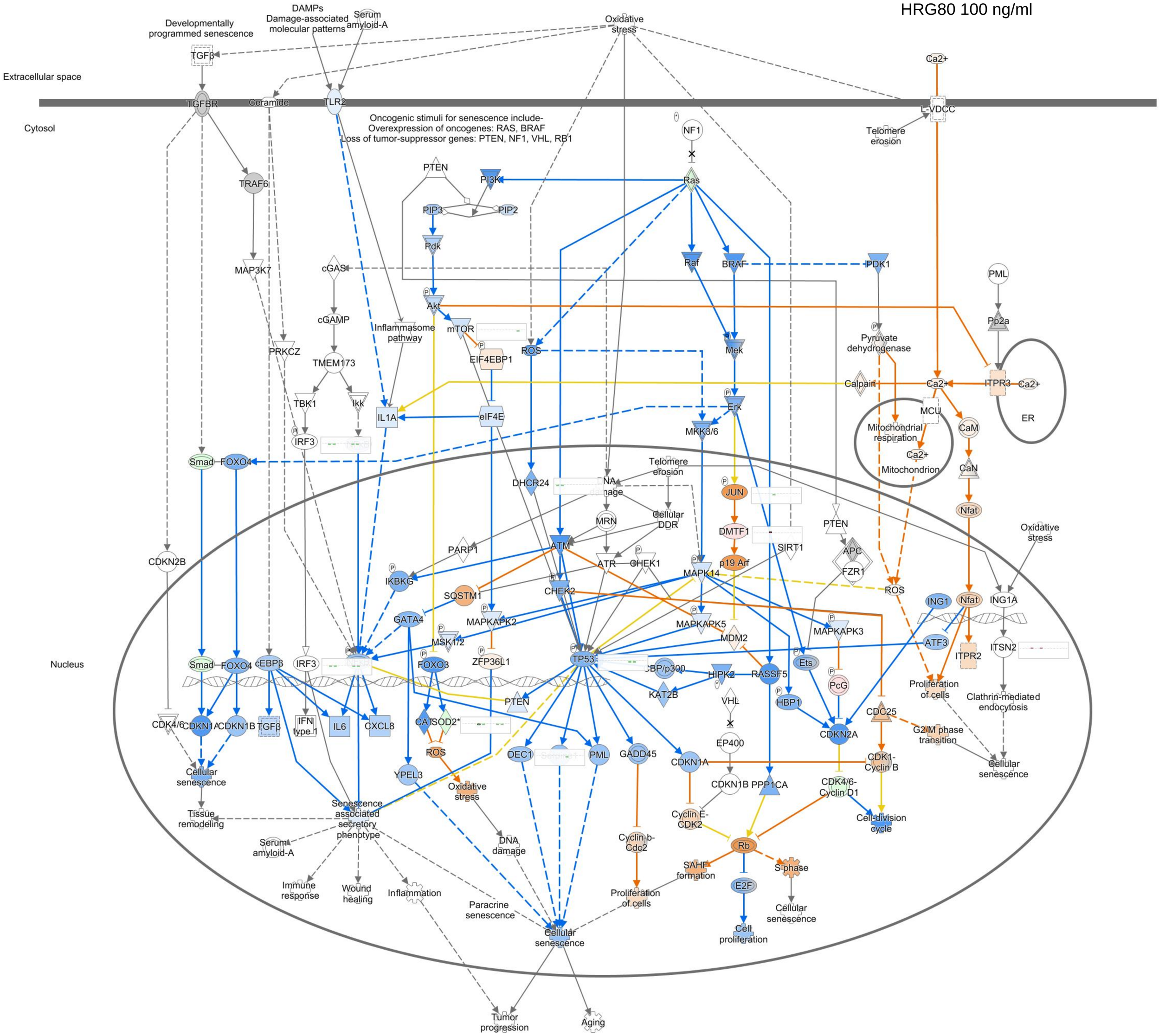
HRG80 100 ng/ml



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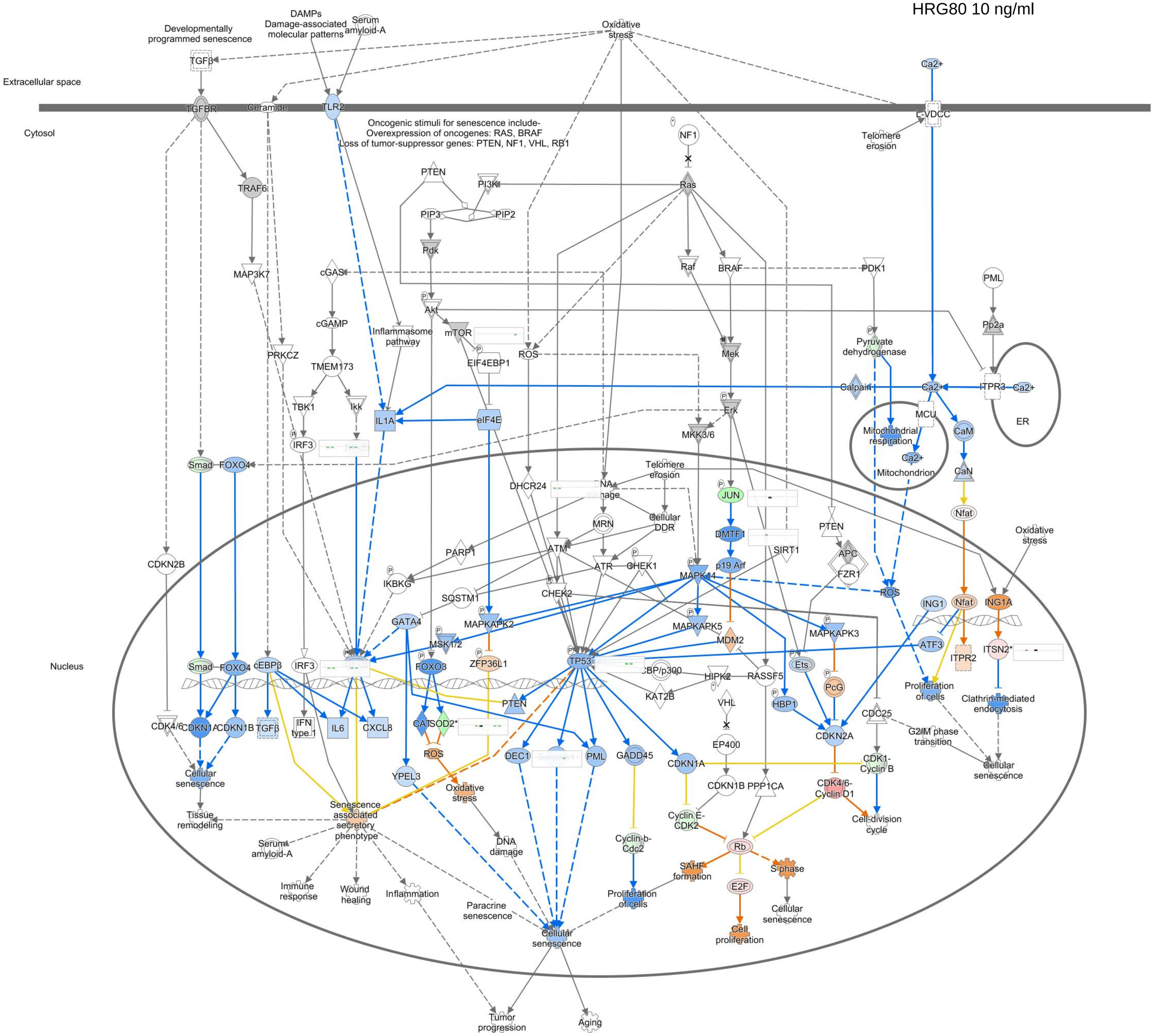
HRG80 10 ng/ml



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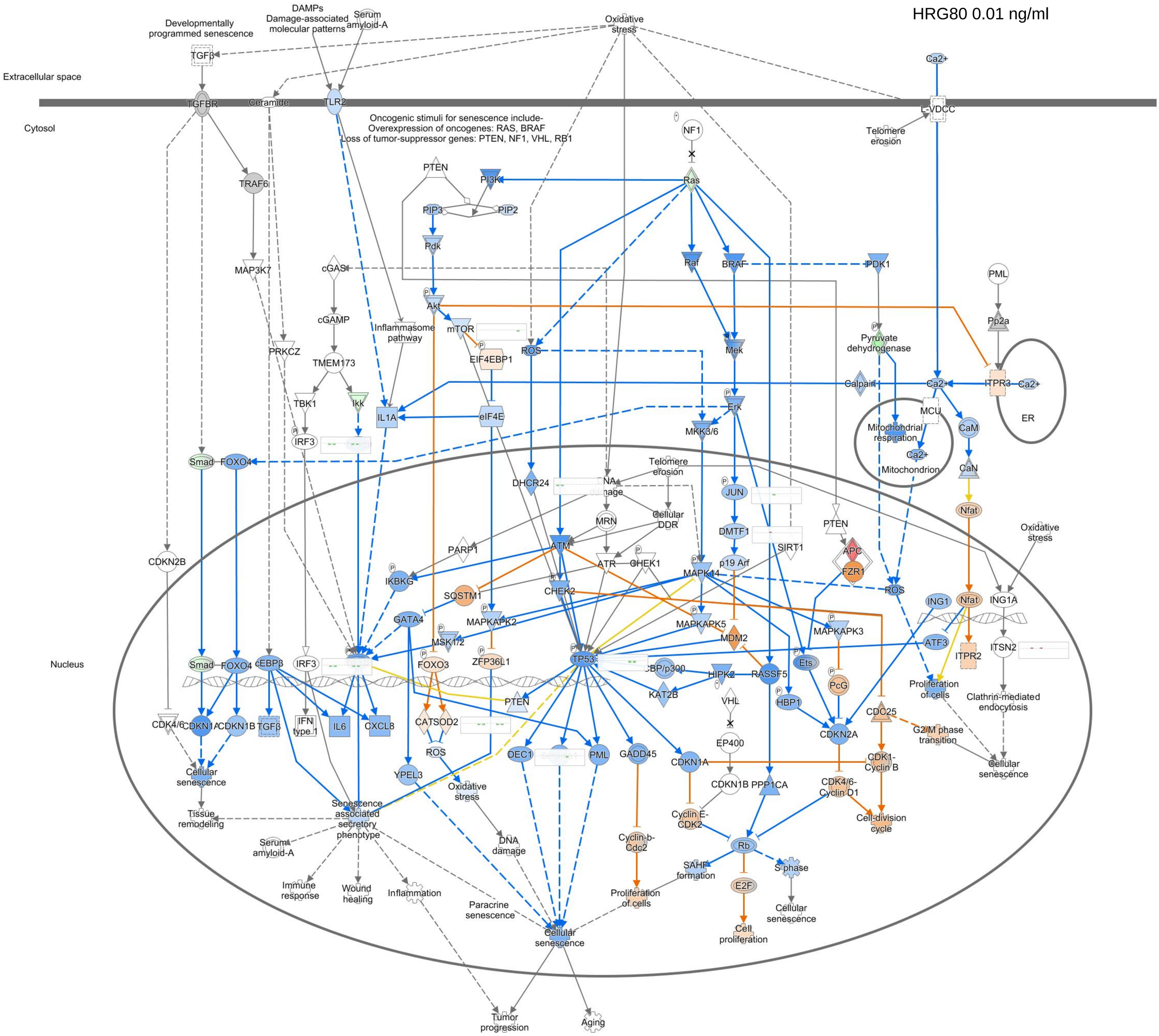
HRG80 0.01 ng/ml



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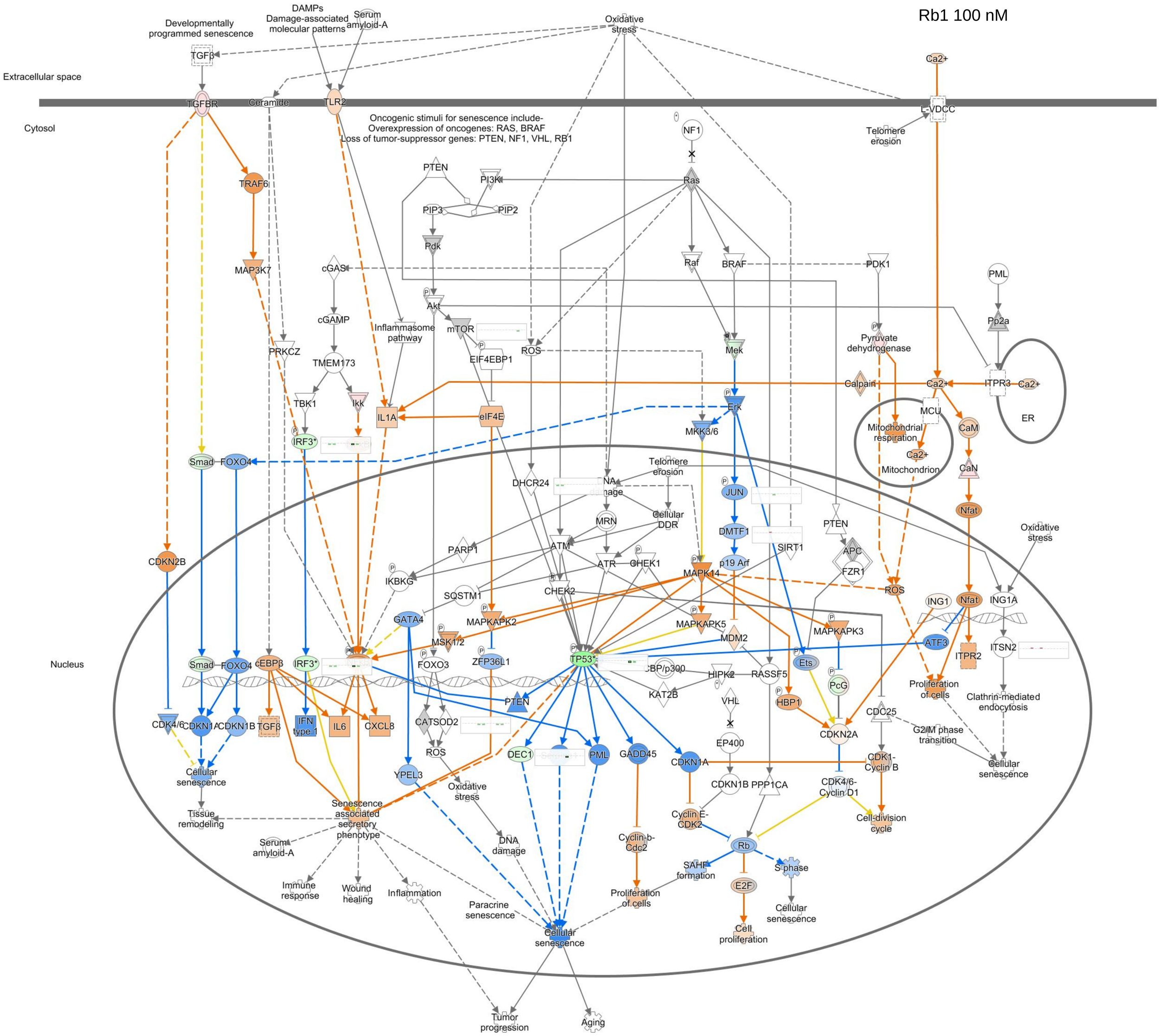
Rb1 100 nM



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Rg3 100 nM

Extracellular space

Cytosol

Nucleus

Developmentally programmed senescence
DAMPs
Damage-associated molecular patterns
Serum amyloid-A
Oxidative stress
TGFβ
TGFBR
Ceramide
TLR2
Ca2+
L-VDCC
Telomere erosion
Oncogenic stimuli for senescence include-
Overexpression of oncogenes: RAS, BRAF
Loss of tumor-suppressor genes: PTEN, NF1, VHL, RB1
NF1
PTEN
PI3K
Ras
TRAF6
PIP3
PIP2
Pdk
Raf
BRAF
PDK1
MAP3K7
cGAS
Akt
PML
cGAMP
Inflammasome pathway
mTOR
Pp2a
Pyruvate dehydrogenase
PRKCZ
ROS
Mek
TMEM173
EIF4EBP1
Calpain
Ca2+
ITPR3
Ca2+
TBK1
Ikk
Erk
ER
IL1A
eIF4E
MCU
MKK3/6
Mitochondrial respiration
CaM
IRF3*
Ca2+
Mitochondrion
Smad
FOXO4
Telomere erosion
CaN
DHCR24
NA
JUN
Nfat
MRN
Cellular DDR
DMTF1
PTEN
Oxidative stress
CDKN2B
PARP1
ATM
SIRT1
APC
FZR1
ATR
CHEK1
p19 Arf
IKBKG
MAPK14
ROS
ING1
Nfat
ING1A
SQSTM1
CHEK2
GATA4
MAPKAPK2
MAPKAPK5
MAPKAPK3
MDM2
ATF3
MSK1/2
ITPR2
ITSN2
Smad
FOXO4
cEBPβ
IRF3*
FOXO3
ZFP36L1
TP53*
CBP/p300
HIPK2
RASSF5
Ets
PcG
Proliferation of cells
Clathrin-mediated endocytosis
KAT2B
VHL
HBP1
PTEN
CDC25
CDK4/6
CDKN1A
CDKN1B
TGFβ
IFN type 1
IL6
CXCL8
CATSOD2*
CDKN2A
G2/M phase transition
EP400
ROS
DEC1
PML
GADD45
CDKN1A
CDK1-Cyclin B
Cellular senescence
YPEL3
Oxidative stress
CDKN1B
PPP1CA
CDK4/6-Cyclin D1
Cyclin E-CDK2
Cell-division cycle
Tissue remodeling
Senescence associated secretory phenotype
Cyclin-b-Cdc2
Rb
Serum amyloid-A
DNA damage
SAHF formation
S phase
Immune response
Wound healing
Inflammation
Paracrine senescence
Proliferation of cells
E2F
Cellular senescence
Cell proliferation
Cellular senescence
Tumor progression
Aging

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Rb5 100 nM

Extracellular space

Cytosol

Nucleus

Developmentally programmed senescence

DAMPs
Damage-associated molecular patterns

Serum amyloid-A

Oxidative stress

TGFβ

TGFBR

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Ca2+

L-VDCC

Telomere erosion

NF1

PTEN

PI3K

Ras

PIP3

PIP2

Pdk

TRAF6

MAP3K7

cGAS

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Inflammasome pathway

Akt

mTOR

EIF4EBP1

ROS

Raf

BRAF

Mek

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Calpain

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Erk

MKK3/6

Smad

FOXO4

Telomere erosion

DHCR24

NA damage

Cellular DDR

MRN

ATM

ATR

CHEK1

CHEK2

PARP1

IKBKG

SQSTM1

GATA4

MAPKAPK2

MSK1/2

FOXO3

ZFP36L1

TP53

JUN

DMTF1

SIRT1

p19 Arf

MAPK14

MAPKAPK5

MDM2

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ROS

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HIPK2

RASSF5

VHL

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PcG

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CDC25

CDK1-Cyclin B

Proliferation of cells

G2/M phase transition

Clathrin-mediated endocytosis

Cellular senescence

Tissue remodeling

Senescence associated secretory phenotype

YPEL3

Oxidative stress

DEC1

PML

GADD45

CDKN1A

CDKN1B

PPP1CA

CDK4/6-Cyclin D1

Cyclin E-CDK2

Cell-division cycle

Serum amyloid-A

DNA damage

Cyclin-b-Cdc2

Rb

SAHF formation

S-phase

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Rk1 100 nM

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ING1A

GATA4

MAPKAPK2

MAPKAPK5

MDM2

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