NATURAL KILLER CELL MEDIATED CYTOTOXICITY

Human

Target cell

NK cell

Inhibitory receptors

(MHC Class I)

HLA-B

HLA-A3

HLA-G1

HLA-B46

KIR3DL1

KIR3DL2

KIR2DL

NKG2A/B

CD94

SHP-1

SHP-2

Normal cell

HLA-C

HLA-E

Activating receptors

ICAM1/2

ITGAL

ITGB2

KIR2DS

NKG2C/E

CD94

DAP-12

Lck

+p

ZAP70

Syk

Fyn

FcεR1γ

CD3ζ

NKp44

NKp46

NKp30

FcγRIII

Antigen

IgG

Antibody

Stressed or tumor cell

HA

MICA

MICB

ULBP1-3

NKG2D

DAP-10

Infected cell

Apoptosis

CD48

2B4

SAP

EAT-2

Fyn

NK cell activation

IFNγR

DNA

IFNs

IFNsR

TRAILR

TRAIL

FAS

FASL

CASP3

Bid

Granzyme

Perforin

Pyk-2

Vav

Rac

3BP2

-p

SLP-76

LAT

PLCγ

PI(3,4,5)P3

PI3K

PAK1

MAPK signaling pathway

MEK1/2

Shc

Grb2

Sos

Ras

Raf

ERK1/2

LAT

PLCγ

IP3

Ca2+

CaN

NFAT

DAG

PKC

Calcium signaling pathway

Cytokine release

TNF-α

GM-CSF

IFN-γ

Cytokine-cytokine receptor interaction

JAK-STAT signaling pathway

TRAIL

Cytotoxic granules movement and exocytosis

Mouse

Target cell

NK cell

Inhibitory receptors

(MHC Class I)

H-2Db

H-2Dd

H-2Dk

H-2Kb

H-2Kd

Qa-1

ICAM1/2

Ly49A

Ly49C

Ly49G2

Ly49I

NKG2A/B

CD94

Activating receptors

ITGAL

ITGB2

Ly49D

NKG2C

CD94

(MCMV)

m157

Ly49H

Antigen

IgG

Antibody

FcγRIII

NKp46

NKR-P1C

H-60

Rae-1

MULT1

NKG2DL

(c) Kanehisa Laboratories