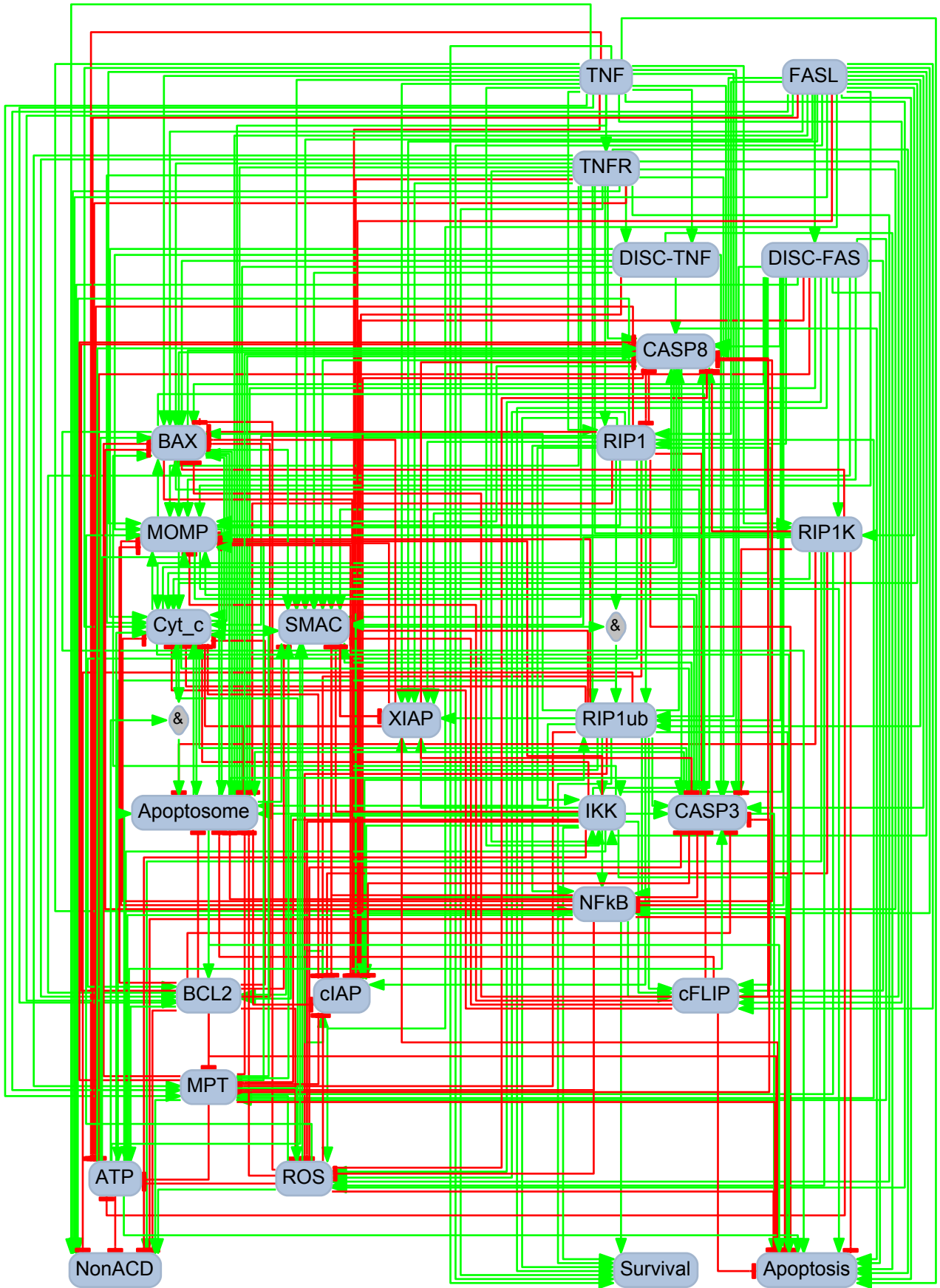


Cell-fate decision model: in-silico PKN 1



BCL2	→	ATP
DISC-FAS	⊥	ATP
FASL	⊥	ATP
IKK	→	ATP
MPT	⊥	ATP
NFκB	→	ATP
RIP1	⊥	ATP
RIP1K	⊥	ATP
RIP1ub	→	ATP
ROS	⊥	ATP
TNF	⊥	ATP
TNFR	⊥	ATP
ATP	→	Apoptosis
Apoptosome	→	Apoptosis
BAX	→	Apoptosis
BCL2	⊥	Apoptosis
CASP3	→	Apoptosis
CASP8	→	Apoptosis
Cyt_c	→	Apoptosis
DISC-FAS	→	Apoptosis
DISC-TNF	→	Apoptosis
FASL	→	Apoptosis
IKK	→	Apoptosis
MOMP	→	Apoptosis
MPT	⊥	Apoptosis
NFκB	⊥	Apoptosis
RIP1	⊥	Apoptosis
RIP1K	⊥	Apoptosis
RIP1ub	→	Apoptosis
ROS	⊥	Apoptosis
TNF	→	Apoptosis
TNFR	→	Apoptosis
XIAP	⊥	Apoptosis
cFLIP	⊥	Apoptosis
ATP	→	Apoptosome
BAX	→	Apoptosome
BCL2	⊥	Apoptosome
CASP3	→	Apoptosome
CASP8	→	Apoptosome
Cyt_c	→	Apoptosome
Cyt_c&ATP	→	Apoptosome
DISC-FAS	→	Apoptosome
DISC-TNF	→	Apoptosome
FASL	→	Apoptosome
IKK	→	Apoptosome
MOMP	→	Apoptosome
MPT	⊥	Apoptosome
NFκB	⊥	Apoptosome
RIP1	⊥	Apoptosome
RIP1K	⊥	Apoptosome
RIP1ub	→	Apoptosome
ROS	⊥	Apoptosome
TNF	→	Apoptosome
TNFR	→	Apoptosome
XIAP	⊥	Apoptosome
cFLIP	⊥	Apoptosome
ATP	→	BAX
Apoptosome	→	BAX
BCL2	⊥	BAX
CASP3	→	BAX
CASP8	→	BAX
Cyt_c	→	BAX
DISC-FAS	→	BAX
DISC-TNF	→	BAX
FASL	→	BAX
IKK	→	BAX

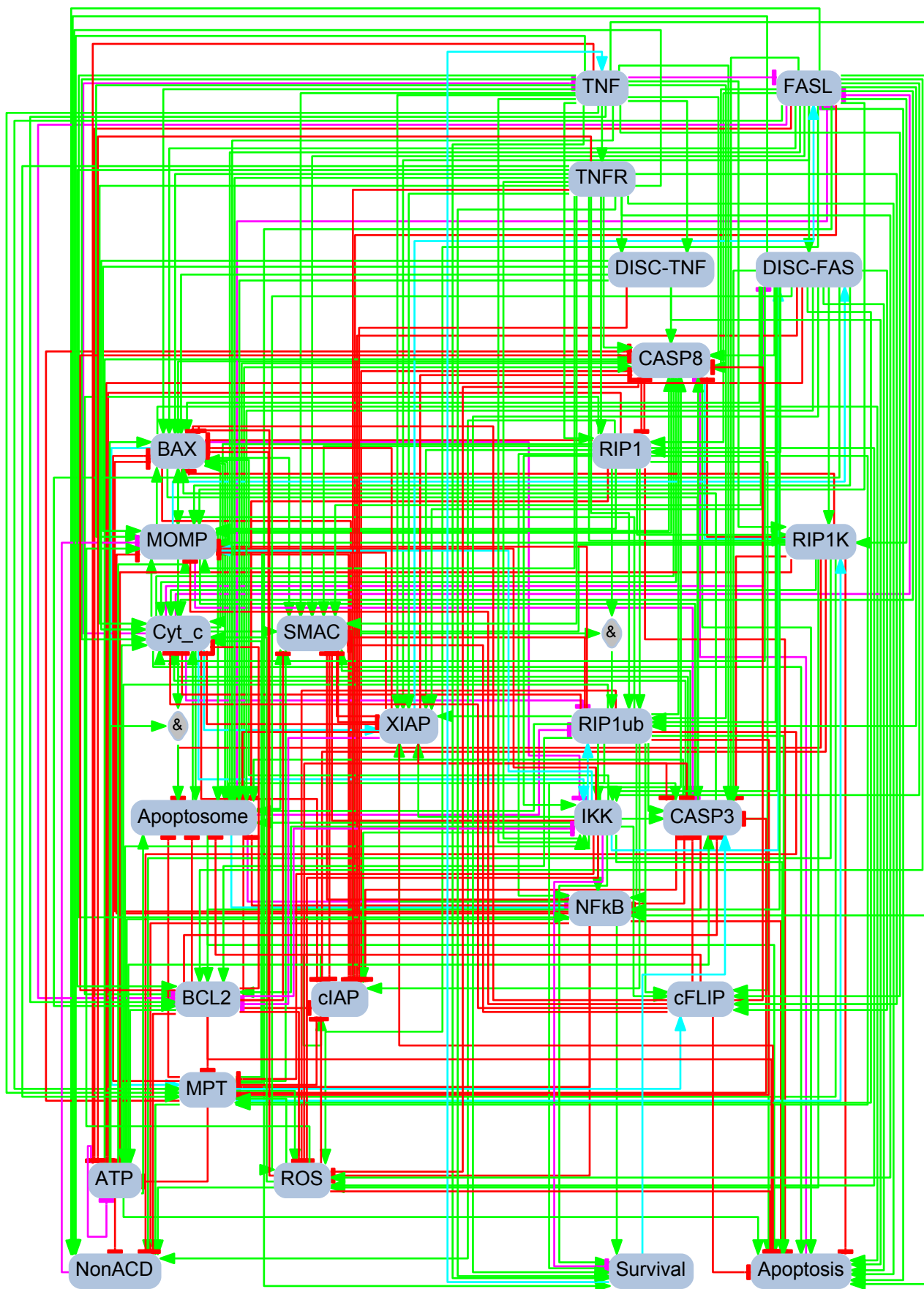
MOMP	→	BAX
MPT	⊥	BAX
NFκB	⊥	BAX
RIP1	⊥	BAX
RIP1K	⊥	BAX
RIP1ub	→	BAX
ROS	⊥	BAX
TNF	→	BAX
TNFR	→	BAX
XIAP	⊥	BAX
cFLIP	⊥	BAX
DISC-FAS	→	BCL2
FASL	→	BCL2
IKK	→	BCL2
NFκB	→	BCL2
RIP1	→	BCL2
RIP1ub	→	BCL2
TNF	→	BCL2
TNFR	→	BCL2
ATP	→	CASP3
Apoptosome	→	CASP3
BAX	→	CASP3
BCL2	⊥	CASP3
CASP8	→	CASP3
Cyt_c	→	CASP3
DISC-FAS	→	CASP3
DISC-TNF	→	CASP3
FASL	→	CASP3
IKK	→	CASP3
MOMP	→	CASP3
MPT	⊥	CASP3
NFκB	⊥	CASP3
RIP1	⊥	CASP3
RIP1K	⊥	CASP3
RIP1ub	→	CASP3
ROS	⊥	CASP3
TNF	→	CASP3
TNFR	→	CASP3
XIAP	⊥	CASP3
cFLIP	⊥	CASP3
ATP	→	CASP8
Apoptosome	→	CASP8
BAX	→	CASP8
BCL2	⊥	CASP8
CASP3	→	CASP8
Cyt_c	→	CASP8
DISC-FAS	→	CASP8
DISC-TNF	→	CASP8
FASL	→	CASP8
IKK	→	CASP8
MOMP	→	CASP8
MPT	⊥	CASP8
NFκB	⊥	CASP8
RIP1	⊥	CASP8
RIP1K	⊥	CASP8
RIP1ub	→	CASP8
ROS	⊥	CASP8
TNF	→	CASP8
TNFR	→	CASP8
XIAP	⊥	CASP8
cFLIP	⊥	CASP8
ATP	→	Cyt_c
Apoptosome	→	Cyt_c
BAX	→	Cyt_c
BCL2	⊥	Cyt_c
CASP3	→	Cyt_c

CASP8	→	Cyt_c
DISC-FAS	→	Cyt_c
DISC-TNF	→	Cyt_c
FASL	→	Cyt_c
IKK	⊥	Cyt_c
MOMP	→	Cyt_c
MPT	→	Cyt_c
NFkB	⊥	Cyt_c
RIP1	→	Cyt_c
RIP1K	→	Cyt_c
RIP1ub	⊥	Cyt_c
ROS	→	Cyt_c
TNF	→	Cyt_c
TNFR	→	Cyt_c
XIAP	⊥	Cyt_c
cFLIP	⊥	Cyt_c
FASL	→	DISC-FAS
TNF	→	DISC-TNF
TNFR	→	DISC-TNF
DISC-FAS	→	IKK
FASL	→	IKK
RIP1	→	IKK
RIP1ub	→	IKK
TNF	→	IKK
TNFR	→	IKK
ATP	→	MOMP
Apoptosome	→	MOMP
BAX	→	MOMP
BCL2	⊥	MOMP
CASP3	→	MOMP
CASP8	→	MOMP
Cyt_c	→	MOMP
DISC-FAS	→	MOMP
DISC-TNF	→	MOMP
FASL	→	MOMP
IKK	⊥	MOMP
MPT	→	MOMP
NFkB	⊥	MOMP
RIP1	→	MOMP
RIP1K	→	MOMP
RIP1ub	⊥	MOMP
ROS	→	MOMP
TNF	→	MOMP
TNFR	→	MOMP
XIAP	⊥	MOMP
cFLIP	⊥	MOMP
BCL2	⊥	MPT
DISC-FAS	→	MPT
FASL	→	MPT
IKK	⊥	MPT
NFkB	⊥	MPT
RIP1	→	MPT
RIP1K	→	MPT
RIP1ub	⊥	MPT
ROS	→	MPT
TNF	→	MPT
TNFR	→	MPT
CASP3	⊥	NFkB
DISC-FAS	→	NFkB
FASL	→	NFkB
IKK	→	NFkB
RIP1	→	NFkB
RIP1ub	→	NFkB
TNF	→	NFkB
TNFR	→	NFkB
ATP	⊥	NonACD

BCL2	⊥	NonACD
DISC-FAS	→	NonACD
FASL	→	NonACD
IKK	⊥	NonACD
MPT	→	NonACD
NFkB	⊥	NonACD
RIP1	→	NonACD
RIP1K	→	NonACD
RIP1ub	⊥	NonACD
ROS	→	NonACD
TNF	→	NonACD
TNFR	→	NonACD
CASP8	⊥	RIP1
DISC-FAS	→	RIP1
FASL	→	RIP1
TNF	→	RIP1
TNFR	→	RIP1
DISC-FAS	→	RIP1K
FASL	→	RIP1K
RIP1	→	RIP1K
TNF	→	RIP1K
TNFR	→	RIP1K
DISC-FAS	→	RIP1ub
FASL	→	RIP1ub
RIP1	→	RIP1ub
TNF	→	RIP1ub
TNFR	→	RIP1ub
cIAP	→	RIP1ub
cIAP&RIP1	→	RIP1ub
BCL2	⊥	ROS
DISC-FAS	→	ROS
FASL	→	ROS
IKK	⊥	ROS
MPT	→	ROS
NFkB	⊥	ROS
RIP1	→	ROS
RIP1K	→	ROS
RIP1ub	⊥	ROS
TNF	→	ROS
TNFR	→	ROS
ATP	→	SMAC
Apoptosome	→	SMAC
BAX	→	SMAC
BCL2	⊥	SMAC
CASP3	→	SMAC
CASP8	→	SMAC
Cyt_c	→	SMAC
DISC-FAS	→	SMAC
DISC-TNF	→	SMAC
FASL	→	SMAC
IKK	⊥	SMAC
MOMP	→	SMAC
MPT	→	SMAC
NFkB	⊥	SMAC
RIP1	→	SMAC
RIP1K	→	SMAC
RIP1ub	⊥	SMAC
ROS	→	SMAC
TNF	→	SMAC
TNFR	→	SMAC
XIAP	⊥	SMAC
cFLIP	⊥	SMAC
DISC-FAS	→	Survival
FASL	→	Survival
IKK	→	Survival
NFkB	→	Survival

RIP1	→	Survival
RIP1ub	→	Survival
TNF	→	Survival
TNFR	→	Survival
TNF	→	TNFR
DISC-FAS	→	XIAP
FASL	→	XIAP
IKK	→	XIAP
NFkB	→	XIAP
RIP1	→	XIAP
RIP1ub	→	XIAP
SMAC	⊥	XIAP
TNF	→	XIAP
TNFR	→	XIAP
DISC-FAS	→	cFLIP
FASL	→	cFLIP
IKK	→	cFLIP
NFkB	→	cFLIP
RIP1	→	cFLIP
RIP1ub	→	cFLIP
TNF	→	cFLIP
TNFR	→	cFLIP
Apoptosome	⊥	cIAP
BAX	⊥	cIAP
CASP3	⊥	cIAP
CASP8	⊥	cIAP
Cyt_c	⊥	cIAP
DISC-FAS	⊥	cIAP
DISC-TNF	⊥	cIAP
FASL	⊥	cIAP
IKK	→	cIAP
MOMP	⊥	cIAP
MPT	⊥	cIAP
NFkB	→	cIAP
RIP1	⊥	cIAP
RIP1K	⊥	cIAP
RIP1ub	→	cIAP
ROS	⊥	cIAP
SMAC	⊥	cIAP
TNF	⊥	cIAP
TNFR	⊥	cIAP
cIAP	→	cIAP

Cell-fate decision model: in-silico PKN 2 (10% noise)



BCL2	→	ATP
DISC-FAS	⊥	ATP
FASL	⊥	ATP
IKK	→	ATP
MPT	⊥	ATP
NFκB	→	ATP
RIP1	⊥	ATP
RIP1K	⊥	ATP
RIP1ub	→	ATP
TNF	⊥	ATP
TNFR	⊥	ATP
ATP	⊥	ATP
ATP	→	Apoptosis
Apoptosome	→	Apoptosis
BAX	→	Apoptosis
BCL2	⊥	Apoptosis
CASP3	→	Apoptosis
CASP8	→	Apoptosis
Cyt_c	→	Apoptosis
DISC-FAS	→	Apoptosis
DISC-TNF	→	Apoptosis
FASL	→	Apoptosis
IKK	→	Apoptosis
NFκB	⊥	Apoptosis
RIP1	⊥	Apoptosis
RIP1K	⊥	Apoptosis
RIP1ub	→	Apoptosis
ROS	⊥	Apoptosis
TNF	→	Apoptosis
TNFR	→	Apoptosis
XIAP	⊥	Apoptosis
cFLIP	⊥	Apoptosis
ATP	→	Apoptosome
BAX	→	Apoptosome
BCL2	⊥	Apoptosome
CASP3	→	Apoptosome
CASP8	→	Apoptosome
Cyt_c	→	Apoptosome
Cyt_c&ATP	→	Apoptosome
DISC-FAS	→	Apoptosome
DISC-TNF	→	Apoptosome
FASL	→	Apoptosome
IKK	→	Apoptosome
MOMP	→	Apoptosome
MPT	⊥	Apoptosome
NFκB	⊥	Apoptosome
RIP1	⊥	Apoptosome
RIP1K	⊥	Apoptosome
RIP1ub	→	Apoptosome
TNF	→	Apoptosome
TNFR	→	Apoptosome
XIAP	⊥	Apoptosome
cFLIP	⊥	Apoptosome
ATP	→	BAX
Apoptosome	→	BAX
BCL2	⊥	BAX
CASP3	→	BAX
CASP8	→	BAX
Cyt_c	→	BAX
DISC-FAS	→	BAX
DISC-TNF	→	BAX
FASL	→	BAX
IKK	→	BAX
MOMP	→	BAX
MPT	⊥	BAX
NFκB	⊥	BAX

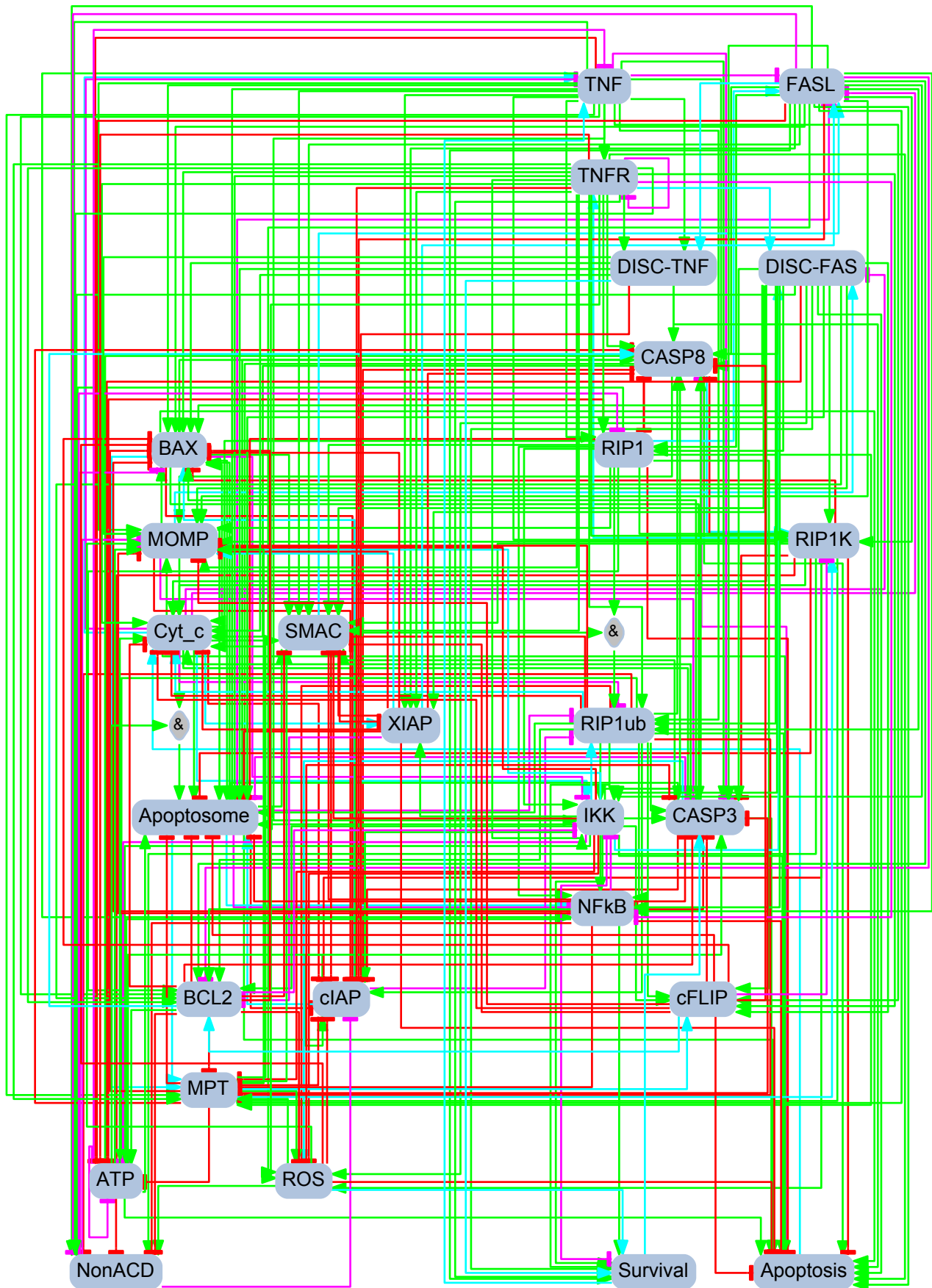
RIP1	⊥	BAX
RIP1K	⊥	BAX
RIP1ub	→	BAX
ROS	⊥	BAX
TNF	→	BAX
TNFR	→	BAX
XIAP	⊥	BAX
cFLIP	⊥	BAX
DISC-FAS	→	BCL2
FASL	→	BCL2
IKK	→	BCL2
NFκB	→	BCL2
RIP1	→	BCL2
RIP1ub	→	BCL2
TNF	→	BCL2
TNFR	→	BCL2
FASL	⊥	BCL2
XIAP	⊥	BCL2
ATP	→	CASP3
Apoptosome	→	CASP3
BAX	→	CASP3
BCL2	⊥	CASP3
Cyt_c	→	CASP3
DISC-FAS	→	CASP3
FASL	→	CASP3
IKK	→	CASP3
MOMP	→	CASP3
MPT	⊥	CASP3
NFκB	⊥	CASP3
RIP1K	⊥	CASP3
RIP1ub	→	CASP3
ROS	⊥	CASP3
TNF	→	CASP3
XIAP	⊥	CASP3
cFLIP	⊥	CASP3
MOMP	⊥	CASP3
Survival	→	CASP3
ATP	→	CASP8
Apoptosome	→	CASP8
BCL2	⊥	CASP8
CASP3	→	CASP8
Cyt_c	→	CASP8
DISC-FAS	→	CASP8
DISC-TNF	→	CASP8
FASL	→	CASP8
IKK	→	CASP8
MOMP	→	CASP8
MPT	⊥	CASP8
RIP1	⊥	CASP8
RIP1K	⊥	CASP8
RIP1ub	→	CASP8
ROS	⊥	CASP8
TNF	→	CASP8
TNFR	→	CASP8
XIAP	⊥	CASP8
cFLIP	⊥	CASP8
Apoptosis	⊥	CASP8
ATP	→	Cyt_c
Apoptosome	→	Cyt_c
BCL2	⊥	Cyt_c
CASP3	→	Cyt_c
CASP8	→	Cyt_c
DISC-FAS	→	Cyt_c
DISC-TNF	→	Cyt_c
FASL	→	Cyt_c
MOMP	→	Cyt_c

MPT	→	Cyt_c
RIP1	→	Cyt_c
RIP1K	→	Cyt_c
RIP1ub	†	Cyt_c
ROS	→	Cyt_c
TNF	→	Cyt_c
TNFR	→	Cyt_c
XIAP	†	Cyt_c
cFLIP	†	Cyt_c
FASL	→	DISC-FAS
Cyt_c	†	DISC-FAS
IKK	→	DISC-FAS
MOMP	→	DISC-FAS
TNF	→	DISC-TNF
TNFR	→	DISC-TNF
Apoptosome	†	FASL
Cyt_c	†	FASL
TNF	†	FASL
XIAP	→	FASL
DISC-FAS	→	IKK
FASL	→	IKK
RIP1	→	IKK
RIP1ub	→	IKK
TNF	→	IKK
TNFR	→	IKK
BAX	†	IKK
BCL2	†	IKK
Cyt_c	→	IKK
ATP	→	MOMP
BAX	→	MOMP
CASP8	→	MOMP
Cyt_c	→	MOMP
DISC-FAS	→	MOMP
DISC-TNF	→	MOMP
FASL	→	MOMP
IKK	†	MOMP
MPT	→	MOMP
NFkB	†	MOMP
RIP1	→	MOMP
RIP1K	→	MOMP
RIP1ub	†	MOMP
ROS	→	MOMP
TNF	→	MOMP
TNFR	→	MOMP
XIAP	†	MOMP
cFLIP	†	MOMP
IKK	→	MOMP
NonACD	†	MOMP
BCL2	†	MPT
DISC-FAS	→	MPT
FASL	→	MPT
IKK	†	MPT
NFkB	†	MPT
RIP1	→	MPT
RIP1K	→	MPT
RIP1ub	†	MPT
ROS	→	MPT
TNF	→	MPT
TNFR	→	MPT
BAX	→	MPT
CASP3	†	NFkB
DISC-FAS	→	NFkB
FASL	→	NFkB
IKK	→	NFkB
RIP1	→	NFkB
RIP1ub	→	NFkB

TNF	→	NFkB
Apoptosome	→	NFkB
Apoptosome	⊥	NFkB
ATP	⊥	NonACD
BCL2	⊥	NonACD
DISC-FAS	→	NonACD
FASL	→	NonACD
MPT	→	NonACD
NFkB	⊥	NonACD
RIP1	→	NonACD
RIP1K	→	NonACD
RIP1ub	⊥	NonACD
ROS	→	NonACD
TNF	→	NonACD
TNFR	→	NonACD
CASP8	⊥	RIP1
DISC-FAS	→	RIP1
FASL	→	RIP1
TNF	→	RIP1
TNFR	→	RIP1
DISC-FAS	→	RIP1K
FASL	→	RIP1K
RIP1	→	RIP1K
TNF	→	RIP1K
TNFR	→	RIP1K
CASP8	→	RIP1K
MPT	→	RIP1K
DISC-FAS	→	RIP1ub
FASL	→	RIP1ub
RIP1	→	RIP1ub
TNF	→	RIP1ub
TNFR	→	RIP1ub
cIAP&RIP1	→	RIP1ub
Apoptosome	⊥	RIP1ub
Cyt_c	⊥	RIP1ub
IKK	→	RIP1ub
BCL2	⊥	ROS
DISC-FAS	→	ROS
FASL	→	ROS
IKK	⊥	ROS
MPT	→	ROS
NFkB	⊥	ROS
RIP1	→	ROS
RIP1K	→	ROS
RIP1ub	⊥	ROS
TNFR	→	ROS
Apoptosome	→	SMAC
BAX	→	SMAC
BCL2	⊥	SMAC
CASP3	→	SMAC
Cyt_c	→	SMAC
DISC-FAS	→	SMAC
FASL	→	SMAC
IKK	⊥	SMAC
MPT	→	SMAC
NFkB	⊥	SMAC
RIP1	→	SMAC
RIP1K	→	SMAC
RIP1ub	⊥	SMAC
TNF	→	SMAC
TNFR	→	SMAC
XIAP	⊥	SMAC
cFLIP	⊥	SMAC
DISC-FAS	→	Survival
FASL	→	Survival
IKK	→	Survival

NFkB	→	Survival
RIP1ub	→	Survival
TNF	→	Survival
TNFR	→	Survival
IKK	+	Survival
Cyt_c	+	TNF
Survival	→	TNF
TNF	→	TNFR
DISC-FAS	→	XIAP
FASL	→	XIAP
IKK	→	XIAP
NFkB	→	XIAP
RIP1	→	XIAP
RIP1ub	→	XIAP
SMAC	+	XIAP
TNF	→	XIAP
TNFR	→	XIAP
Cyt_c	→	XIAP
DISC-FAS	→	cFLIP
IKK	→	cFLIP
RIP1	→	cFLIP
RIP1ub	→	cFLIP
TNF	→	cFLIP
TNFR	→	cFLIP
MPT	→	cFLIP
Apoptosome	+	clAP
BAX	+	clAP
CASP3	+	clAP
CASP8	+	clAP
Cyt_c	+	clAP
DISC-FAS	+	clAP
DISC-TNF	+	clAP
FASL	+	clAP
IKK	→	clAP
MOMP	+	clAP
MPT	+	clAP
RIP1K	+	clAP
RIP1ub	→	clAP
ROS	+	clAP
SMAC	+	clAP
TNFR	+	clAP
clAP	→	clAP

Cell-fate decision model: in-silico PKN 3 (20% noise)



BCL2	→	ATP
DISC-FAS	⊥	ATP
FASL	⊥	ATP
IKK	→	ATP
MPT	⊥	ATP
NFκB	→	ATP
RIP1	⊥	ATP
RIP1K	⊥	ATP
RIP1ub	→	ATP
TNF	⊥	ATP
TNFR	⊥	ATP
ATP	⊥	ATP
IKK	⊥	ATP
ATP	→	Apoptosis
Apoptosome	→	Apoptosis
BAX	→	Apoptosis
CASP3	→	Apoptosis
CASP8	→	Apoptosis
Cyt_c	→	Apoptosis
DISC-FAS	→	Apoptosis
DISC-TNF	→	Apoptosis
FASL	→	Apoptosis
IKK	→	Apoptosis
NFκB	⊥	Apoptosis
RIP1	⊥	Apoptosis
RIP1K	⊥	Apoptosis
RIP1ub	→	Apoptosis
ROS	⊥	Apoptosis
TNFR	→	Apoptosis
XIAP	⊥	Apoptosis
cFLIP	⊥	Apoptosis
ATP	→	Apoptosome
BAX	→	Apoptosome
BCL2	⊥	Apoptosome
CASP8	→	Apoptosome
Cyt_c	→	Apoptosome
Cyt_c&ATP	→	Apoptosome
DISC-FAS	→	Apoptosome
DISC-TNF	→	Apoptosome
IKK	→	Apoptosome
MOMP	→	Apoptosome
MPT	⊥	Apoptosome
NFκB	⊥	Apoptosome
RIP1	⊥	Apoptosome
RIP1K	⊥	Apoptosome
RIP1ub	→	Apoptosome
TNF	→	Apoptosome
TNFR	→	Apoptosome
XIAP	⊥	Apoptosome
cFLIP	⊥	Apoptosome
CASP3	⊥	Apoptosome
cIAP	→	Apoptosome
Apoptosome	→	BAX
BCL2	⊥	BAX
CASP3	→	BAX
CASP8	→	BAX
Cyt_c	→	BAX
DISC-FAS	→	BAX
DISC-TNF	→	BAX
FASL	→	BAX
MOMP	→	BAX
MPT	⊥	BAX
NFκB	⊥	BAX
RIP1K	⊥	BAX
ROS	⊥	BAX
TNF	→	BAX

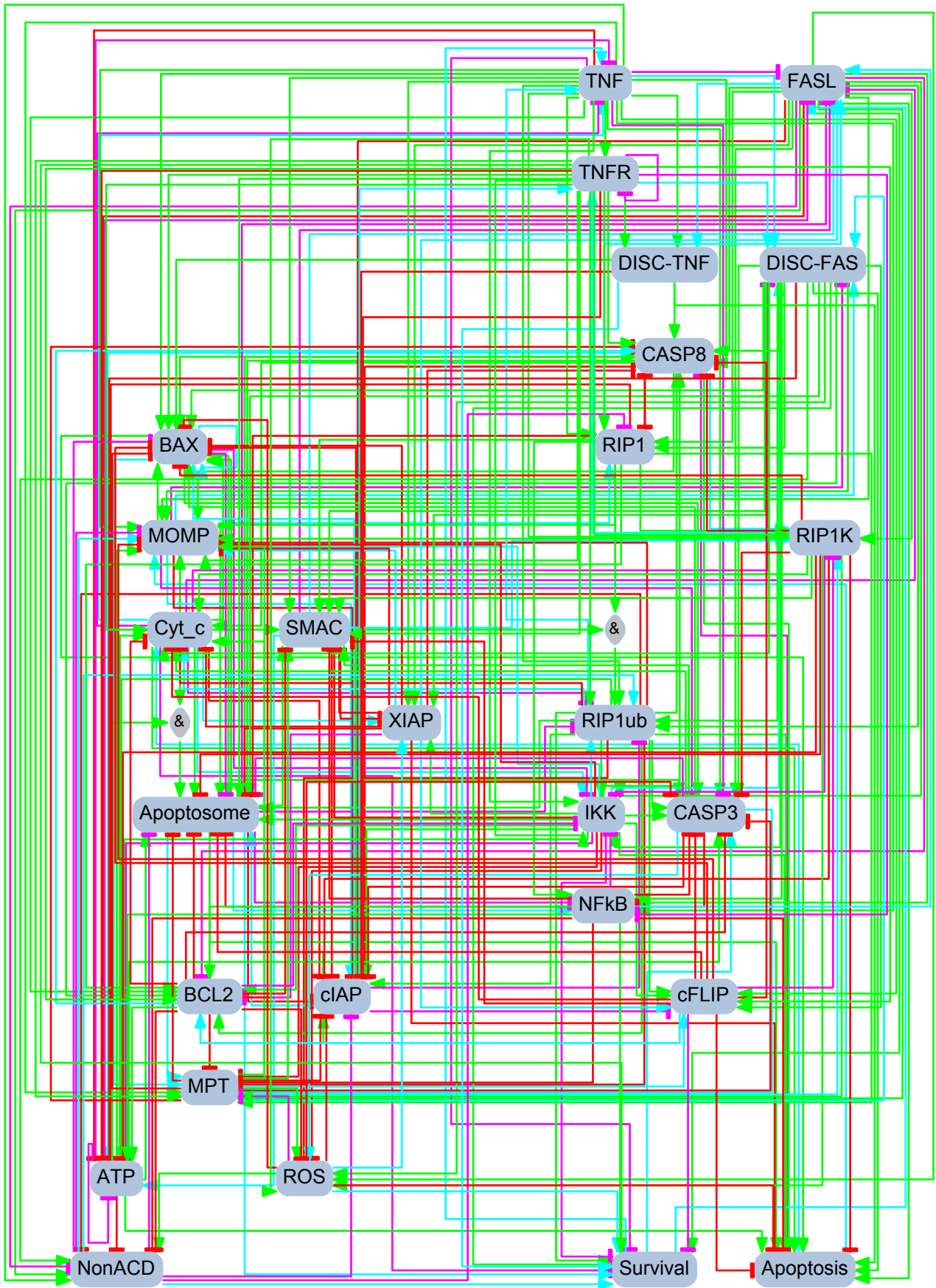
TNFR	→	BAX
XIAP	⊥	BAX
cFLIP	⊥	BAX
NonACD	⊥	BAX
cIAP	→	BAX
DISC-FAS	→	BCL2
FASL	→	BCL2
IKK	→	BCL2
NFκB	→	BCL2
RIP1	→	BCL2
RIP1ub	→	BCL2
TNF	→	BCL2
TNFR	→	BCL2
FASL	⊥	BCL2
XIAP	⊥	BCL2
cFLIP	→	BCL2
ATP	→	CASP3
Apoptosome	→	CASP3
BAX	→	CASP3
BCL2	⊥	CASP3
Cyt_c	→	CASP3
DISC-FAS	→	CASP3
FASL	→	CASP3
IKK	→	CASP3
MPT	⊥	CASP3
NFκB	⊥	CASP3
RIP1K	⊥	CASP3
RIP1ub	→	CASP3
ROS	⊥	CASP3
TNF	→	CASP3
cFLIP	⊥	CASP3
MOMP	⊥	CASP3
Survival	→	CASP3
TNF	⊥	CASP3
ATP	→	CASP8
Apoptosome	→	CASP8
CASP3	→	CASP8
DISC-FAS	→	CASP8
DISC-TNF	→	CASP8
FASL	→	CASP8
IKK	→	CASP8
MPT	⊥	CASP8
RIP1	⊥	CASP8
RIP1K	⊥	CASP8
RIP1ub	→	CASP8
TNF	→	CASP8
TNFR	→	CASP8
XIAP	⊥	CASP8
cFLIP	⊥	CASP8
Apoptosis	⊥	CASP8
BCL2	→	CASP8
ATP	→	Cyt_c
BCL2	⊥	Cyt_c
CASP3	→	Cyt_c
CASP8	→	Cyt_c
DISC-FAS	→	Cyt_c
DISC-TNF	→	Cyt_c
MOMP	→	Cyt_c
MPT	→	Cyt_c
RIP1	→	Cyt_c
RIP1K	→	Cyt_c
RIP1ub	⊥	Cyt_c
TNFR	→	Cyt_c
XIAP	⊥	Cyt_c
cFLIP	⊥	Cyt_c
Apoptosis	→	Cyt_c

RIP1ub	→	Cyt_c
Cyt_c	⊥	DISC-FAS
IKK	→	DISC-FAS
MOMP	→	DISC-FAS
TNFR	→	DISC-FAS
TNF	→	DISC-TNF
TNFR	→	DISC-TNF
FASL	→	DISC-TNF
Apoptosome	⊥	FASL
Cyt_c	⊥	FASL
RIP1	→	FASL
SMAC	→	FASL
TNF	⊥	FASL
XIAP	→	FASL
DISC-FAS	→	IKK
FASL	→	IKK
RIP1	→	IKK
RIP1ub	→	IKK
TNF	→	IKK
TNFR	→	IKK
BAX	⊥	IKK
BCL2	⊥	IKK
Cyt_c	→	IKK
NFkB	⊥	IKK
ATP	→	MOMP
CASP8	→	MOMP
Cyt_c	→	MOMP
DISC-FAS	→	MOMP
DISC-TNF	→	MOMP
FASL	→	MOMP
IKK	⊥	MOMP
MPT	→	MOMP
NFkB	⊥	MOMP
RIP1	→	MOMP
RIP1K	→	MOMP
RIP1ub	⊥	MOMP
ROS	→	MOMP
TNF	→	MOMP
TNFR	→	MOMP
XIAP	⊥	MOMP
cFLIP	⊥	MOMP
IKK	→	MOMP
NonACD	⊥	MOMP
XIAP	→	MOMP
BCL2	⊥	MPT
FASL	→	MPT
IKK	⊥	MPT
NFkB	⊥	MPT
RIP1	→	MPT
RIP1K	→	MPT
RIP1ub	⊥	MPT
ROS	→	MPT
TNF	→	MPT
TNFR	→	MPT
Apoptosome	→	MPT
BAX	→	MPT
CASP3	⊥	NFkB
DISC-FAS	→	NFkB
FASL	→	NFkB
IKK	→	NFkB
RIP1	→	NFkB
RIP1ub	→	NFkB
TNF	→	NFkB
Apoptosome	→	NFkB
Apoptosome	⊥	NFkB
TNFR	⊥	NFkB

ATP	⊥	NonACD
BCL2	⊥	NonACD
DISC-FAS	→	NonACD
FASL	→	NonACD
NFkB	⊥	NonACD
RIP1	→	NonACD
RIP1K	→	NonACD
RIP1ub	⊥	NonACD
ROS	→	NonACD
TNF	→	NonACD
TNFR	→	NonACD
FASL	⊥	NonACD
CASP8	⊥	RIP1
DISC-FAS	→	RIP1
FASL	→	RIP1
TNF	→	RIP1
TNFR	→	RIP1
NonACD	⊥	RIP1
DISC-FAS	→	RIP1K
FASL	→	RIP1K
RIP1	→	RIP1K
TNF	→	RIP1K
TNFR	→	RIP1K
CASP8	→	RIP1K
MPT	→	RIP1K
cFLIP	⊥	RIP1K
DISC-FAS	→	RIP1ub
FASL	→	RIP1ub
TNF	→	RIP1ub
TNFR	→	RIP1ub
cIAP&RIP1	→	RIP1ub
Apoptosome	⊥	RIP1ub
Cyt_c	⊥	RIP1ub
IKK	→	RIP1ub
cIAP	⊥	RIP1ub
BCL2	⊥	ROS
DISC-FAS	→	ROS
FASL	→	ROS
IKK	⊥	ROS
MPT	→	ROS
RIP1K	→	ROS
RIP1ub	⊥	ROS
TNFR	→	ROS
CASP3	→	ROS
Apoptosome	→	SMAC
BAX	→	SMAC
BCL2	⊥	SMAC
CASP3	→	SMAC
Cyt_c	→	SMAC
DISC-FAS	→	SMAC
FASL	→	SMAC
IKK	⊥	SMAC
MPT	→	SMAC
NFkB	⊥	SMAC
RIP1	→	SMAC
RIP1K	→	SMAC
RIP1ub	⊥	SMAC
TNF	→	SMAC
TNFR	→	SMAC
XIAP	⊥	SMAC
cFLIP	⊥	SMAC
DISC-FAS	→	Survival
FASL	→	Survival
IKK	→	Survival
NFkB	→	Survival
RIP1ub	→	Survival

TNFR	→	Survival
DISC-TNF	→	Survival
IKK	+	Survival
ROS	→	Survival
ATP	+	TNF
Cyt_c	→	TNF
Cyt_c	+	TNF
Survival	→	TNF
TNF	→	TNFR
RIP1K	→	TNFR
TNFR	+	TNFR
DISC-FAS	→	XIAP
FASL	→	XIAP
IKK	→	XIAP
SMAC	+	XIAP
TNF	→	XIAP
TNFR	→	XIAP
Cyt_c	→	XIAP
DISC-FAS	→	cFLIP
IKK	→	cFLIP
RIP1	→	cFLIP
RIP1ub	→	cFLIP
TNF	→	cFLIP
TNFR	→	cFLIP
MPT	→	cFLIP
Apoptosome	+	clAP
BAX	+	clAP
CASP3	+	clAP
CASP8	+	clAP
Cyt_c	+	clAP
DISC-TNF	+	clAP
FASL	+	clAP
IKK	→	clAP
MOMP	+	clAP
MPT	+	clAP
RIP1K	+	clAP
RIP1ub	→	clAP
ROS	+	clAP
SMAC	+	clAP
TNFR	+	clAP
clAP	→	clAP
NonACD	+	clAP

Cell-fate decision model: in-silico PKN 4 (30% noise)



BCL2	→	ATP
DISC-FAS	⊥	ATP
FASL	⊥	ATP
IKK	→	ATP
NFkB	→	ATP
RIP1	⊥	ATP
RIP1K	⊥	ATP
RIP1ub	→	ATP
TNF	⊥	ATP
TNFR	⊥	ATP
ATP	⊥	ATP
CASP8	→	ATP
IKK	⊥	ATP
SMAC	→	ATP
ATP	→	Apoptosis
Apoptosome	→	Apoptosis
BAX	→	Apoptosis
CASP8	→	Apoptosis
Cyt_c	→	Apoptosis
DISC-FAS	→	Apoptosis
DISC-TNF	→	Apoptosis
FASL	→	Apoptosis
IKK	→	Apoptosis
NFkB	⊥	Apoptosis
RIP1K	⊥	Apoptosis
RIP1ub	→	Apoptosis
ROS	⊥	Apoptosis
XIAP	⊥	Apoptosis
cFLIP	⊥	Apoptosis
ATP	→	Apoptosome
BAX	→	Apoptosome
BCL2	⊥	Apoptosome
CASP8	→	Apoptosome
Cyt_c	→	Apoptosome
Cyt_c&ATP	→	Apoptosome
DISC-FAS	→	Apoptosome
IKK	→	Apoptosome
MOMP	→	Apoptosome
MPT	⊥	Apoptosome
NFkB	⊥	Apoptosome
RIP1	⊥	Apoptosome
RIP1K	⊥	Apoptosome
RIP1ub	→	Apoptosome
TNFR	→	Apoptosome
XIAP	⊥	Apoptosome
cFLIP	⊥	Apoptosome
BAX	⊥	Apoptosome
CASP3	⊥	Apoptosome
NonACD	⊥	Apoptosome
cIAP	→	Apoptosome
Apoptosome	→	BAX
BCL2	⊥	BAX
CASP3	→	BAX
CASP8	→	BAX
Cyt_c	→	BAX
DISC-FAS	→	BAX
DISC-TNF	→	BAX
MOMP	→	BAX
MPT	⊥	BAX
RIP1K	⊥	BAX
ROS	⊥	BAX
TNF	→	BAX
TNFR	→	BAX
XIAP	⊥	BAX
cFLIP	⊥	BAX
BAX	→	BAX

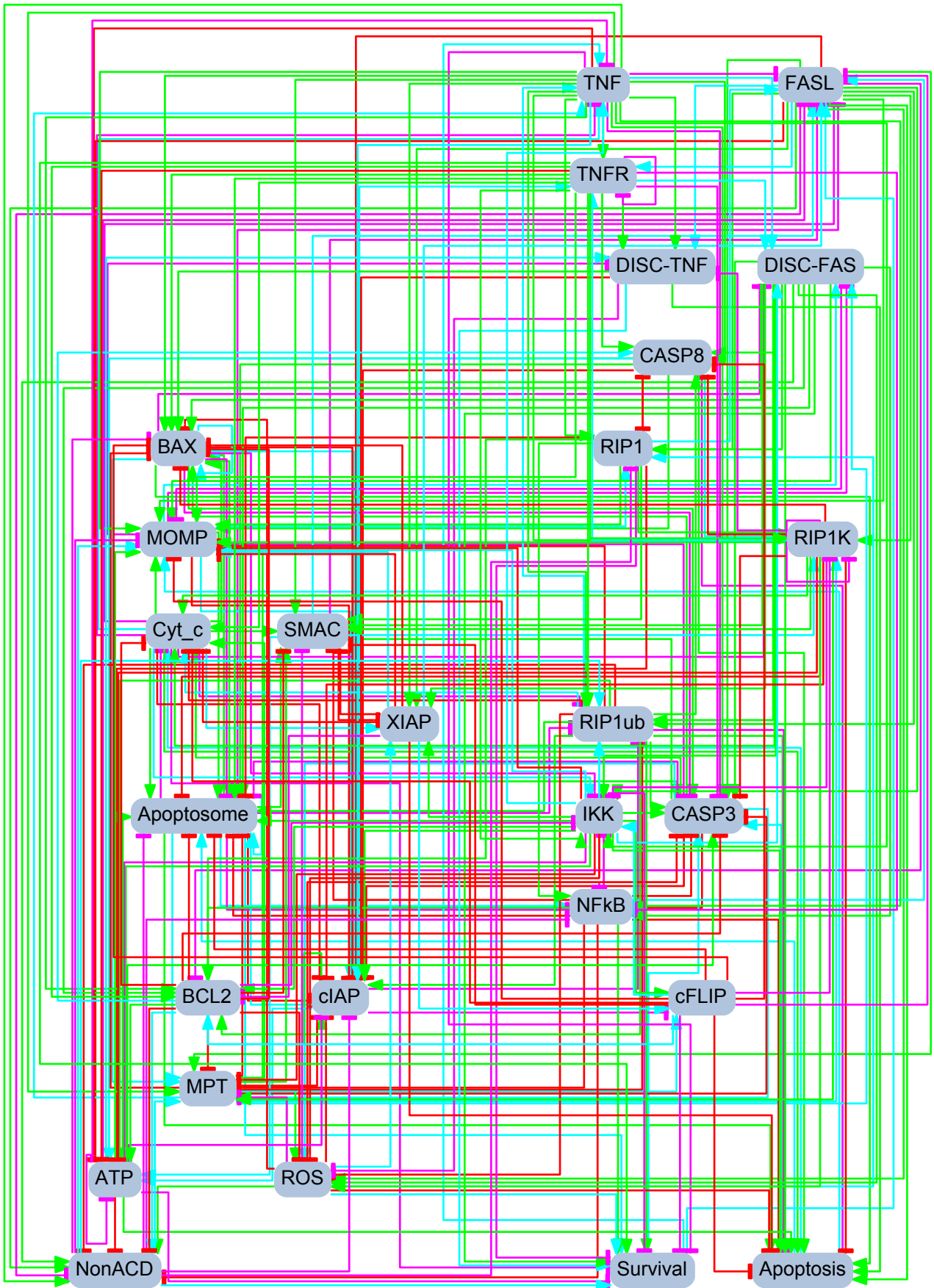
NonACD	⊥	BAX
cIAP	→	BAX
DISC-FAS	→	BCL2
IKK	→	BCL2
NFκB	→	BCL2
RIP1	→	BCL2
RIP1ub	→	BCL2
TNF	→	BCL2
TNFR	→	BCL2
FASL	⊥	BCL2
XIAP	⊥	BCL2
cFLIP	→	BCL2
ATP	→	CASP3
Apoptosome	→	CASP3
BAX	→	CASP3
BCL2	⊥	CASP3
DISC-FAS	→	CASP3
FASL	→	CASP3
IKK	→	CASP3
MPT	⊥	CASP3
NFκB	⊥	CASP3
RIP1K	⊥	CASP3
RIP1ub	→	CASP3
ROS	⊥	CASP3
TNF	→	CASP3
cFLIP	⊥	CASP3
MOMP	⊥	CASP3
Survival	→	CASP3
TNF	⊥	CASP3
Apoptosome	→	CASP8
DISC-FAS	→	CASP8
DISC-TNF	→	CASP8
FASL	→	CASP8
IKK	→	CASP8
MPT	⊥	CASP8
RIP1	⊥	CASP8
RIP1K	⊥	CASP8
RIP1ub	→	CASP8
TNF	→	CASP8
TNFR	→	CASP8
XIAP	⊥	CASP8
cFLIP	⊥	CASP8
Apoptosis	⊥	CASP8
BCL2	→	CASP8
ATP	→	Cyt_c
BCL2	⊥	Cyt_c
CASP3	→	Cyt_c
CASP8	→	Cyt_c
DISC-FAS	→	Cyt_c
MPT	→	Cyt_c
RIP1K	→	Cyt_c
RIP1ub	⊥	Cyt_c
TNFR	→	Cyt_c
XIAP	⊥	Cyt_c
cFLIP	⊥	Cyt_c
Apoptosis	→	Cyt_c
RIP1ub	→	Cyt_c
Cyt_c	⊥	DISC-FAS
IKK	→	DISC-FAS
MOMP	→	DISC-FAS
MOMP	⊥	DISC-FAS
MPT	→	DISC-FAS
TNF	→	DISC-FAS
TNFR	→	DISC-FAS
TNF	→	DISC-TNF
TNFR	→	DISC-TNF

FASL	→	DISC-TNF
ATP	⊥	FASL
Apoptosome	⊥	FASL
Cyt_c	⊥	FASL
NFkB	→	FASL
RIP1	→	FASL
SMAC	→	FASL
SMAC	⊥	FASL
Survival	→	FASL
TNF	⊥	FASL
XIAP	→	FASL
DISC-FAS	→	IKK
FASL	→	IKK
RIP1ub	→	IKK
TNF	→	IKK
TNFR	→	IKK
BAX	⊥	IKK
BCL2	⊥	IKK
Cyt_c	→	IKK
NFkB	⊥	IKK
RIP1K	⊥	IKK
ATP	→	MOMP
CASP8	→	MOMP
Cyt_c	→	MOMP
DISC-FAS	→	MOMP
FASL	→	MOMP
IKK	⊥	MOMP
MPT	→	MOMP
RIP1	→	MOMP
RIP1K	→	MOMP
RIP1ub	⊥	MOMP
TNF	→	MOMP
TNFR	→	MOMP
XIAP	⊥	MOMP
cFLIP	⊥	MOMP
Apoptosis	→	MOMP
IKK	→	MOMP
NonACD	→	MOMP
NonACD	⊥	MOMP
XIAP	→	MOMP
BCL2	⊥	MPT
FASL	→	MPT
IKK	⊥	MPT
NFkB	⊥	MPT
RIP1	→	MPT
RIP1K	→	MPT
RIP1ub	⊥	MPT
ROS	→	MPT
TNF	→	MPT
TNFR	→	MPT
Apoptosome	→	MPT
BAX	→	MPT
CASP3	→	MPT
ROS	⊥	MPT
CASP3	⊥	NFkB
DISC-FAS	→	NFkB
FASL	→	NFkB
RIP1	→	NFkB
TNF	→	NFkB
Apoptosome	→	NFkB
Apoptosome	⊥	NFkB
TNFR	⊥	NFkB
ATP	⊥	NonACD
BCL2	⊥	NonACD
DISC-FAS	→	NonACD
FASL	→	NonACD

NFkB	⊥	NonACD
RIP1ub	⊥	NonACD
ROS	→	NonACD
TNF	→	NonACD
FASL	⊥	NonACD
CASP8	⊥	RIP1
DISC-FAS	→	RIP1
FASL	→	RIP1
TNF	→	RIP1
TNFR	→	RIP1
MOMP	→	RIP1
NonACD	⊥	RIP1
FASL	→	RIP1K
RIP1	→	RIP1K
TNF	→	RIP1K
TNFR	→	RIP1K
CASP8	→	RIP1K
MPT	→	RIP1K
SMAC	→	RIP1K
cFLIP	⊥	RIP1K
DISC-FAS	→	RIP1ub
FASL	→	RIP1ub
TNF	→	RIP1ub
TNFR	→	RIP1ub
cIAP&RIP1	→	RIP1ub
Apoptosome	⊥	RIP1ub
Cyt_c	⊥	RIP1ub
IKK	→	RIP1ub
NonACD	→	RIP1ub
cIAP	⊥	RIP1ub
BCL2	⊥	ROS
DISC-FAS	→	ROS
FASL	→	ROS
IKK	⊥	ROS
MPT	→	ROS
RIP1K	→	ROS
RIP1ub	⊥	ROS
TNFR	→	ROS
CASP3	→	ROS
Apoptosome	→	SMAC
BCL2	⊥	SMAC
CASP3	→	SMAC
Cyt_c	→	SMAC
DISC-FAS	→	SMAC
IKK	⊥	SMAC
MPT	→	SMAC
NFkB	⊥	SMAC
RIP1	→	SMAC
RIP1K	→	SMAC
TNF	→	SMAC
TNFR	→	SMAC
XIAP	⊥	SMAC
cFLIP	⊥	SMAC
DISC-FAS	→	Survival
FASL	→	Survival
NFkB	→	Survival
RIP1ub	→	Survival
TNFR	→	Survival
Apoptosome	→	Survival
Cyt_c	⊥	Survival
DISC-TNF	→	Survival
IKK	⊥	Survival
NonACD	→	Survival
ROS	→	Survival
TNF	⊥	Survival
cFLIP	⊥	Survival

ATP	+	TNF
Cyt_c	→	TNF
Cyt_c	+	TNF
RIP1ub	→	TNF
Survival	→	TNF
TNF	→	TNFR
RIP1K	→	TNFR
TNFR	+	TNFR
cIAP	→	TNFR
DISC-FAS	→	XIAP
FASL	→	XIAP
IKK	→	XIAP
SMAC	+	XIAP
TNF	→	XIAP
Cyt_c	→	XIAP
ROS	→	XIAP
DISC-FAS	→	cFLIP
IKK	→	cFLIP
RIP1ub	→	cFLIP
TNF	→	cFLIP
TNFR	→	cFLIP
MPT	→	cFLIP
XIAP	→	cFLIP
cIAP	+	cFLIP
Apoptosome	+	cIAP
BAX	+	cIAP
CASP3	+	cIAP
CASP8	+	cIAP
Cyt_c	+	cIAP
DISC-TNF	+	cIAP
FASL	+	cIAP
IKK	→	cIAP
MOMP	+	cIAP
MPT	+	cIAP
RIP1K	+	cIAP
RIP1ub	→	cIAP
ROS	+	cIAP
SMAC	+	cIAP
TNFR	+	cIAP
cIAP	→	cIAP
MOMP	→	cIAP
NonACD	+	cIAP

Cell-fate decision model: in-silico PKN 5 (40% noise)



BCL2	→	ATP
FASL	⊥	ATP
IKK	→	ATP
RIP1	⊥	ATP
RIP1K	⊥	ATP
RIP1ub	→	ATP
TNF	⊥	ATP
TNFR	⊥	ATP
ATP	⊥	ATP
CASP8	→	ATP
IKK	⊥	ATP
SMAC	→	ATP
cIAP	→	ATP
ATP	→	Apoptosis
Apoptosome	→	Apoptosis
BAX	→	Apoptosis
CASP8	→	Apoptosis
Cyt_c	→	Apoptosis
DISC-FAS	→	Apoptosis
DISC-TNF	→	Apoptosis
FASL	→	Apoptosis
IKK	→	Apoptosis
NFkB	⊥	Apoptosis
RIP1K	⊥	Apoptosis
RIP1ub	→	Apoptosis
ROS	⊥	Apoptosis
XIAP	⊥	Apoptosis
cFLIP	⊥	Apoptosis
RIP1ub	⊥	Apoptosis
ATP	→	Apoptosome
BAX	→	Apoptosome
BCL2	⊥	Apoptosome
CASP8	→	Apoptosome
Cyt_c	→	Apoptosome
DISC-FAS	→	Apoptosome
IKK	→	Apoptosome
MOMP	→	Apoptosome
MPT	⊥	Apoptosome
NFkB	⊥	Apoptosome
RIP1	⊥	Apoptosome
RIP1K	⊥	Apoptosome
RIP1ub	→	Apoptosome
TNFR	→	Apoptosome
cFLIP	⊥	Apoptosome
Apoptosis	→	Apoptosome
Apoptosome	→	Apoptosome
BAX	⊥	Apoptosome
CASP3	⊥	Apoptosome
NonACD	⊥	Apoptosome
cIAP	→	Apoptosome
Apoptosome	→	BAX
BCL2	⊥	BAX
CASP3	→	BAX
CASP8	→	BAX
Cyt_c	→	BAX
DISC-FAS	→	BAX
DISC-TNF	→	BAX
MPT	⊥	BAX
RIP1K	⊥	BAX
ROS	⊥	BAX
TNF	→	BAX
TNFR	→	BAX
XIAP	⊥	BAX
cFLIP	⊥	BAX
BAX	→	BAX
NonACD	⊥	BAX

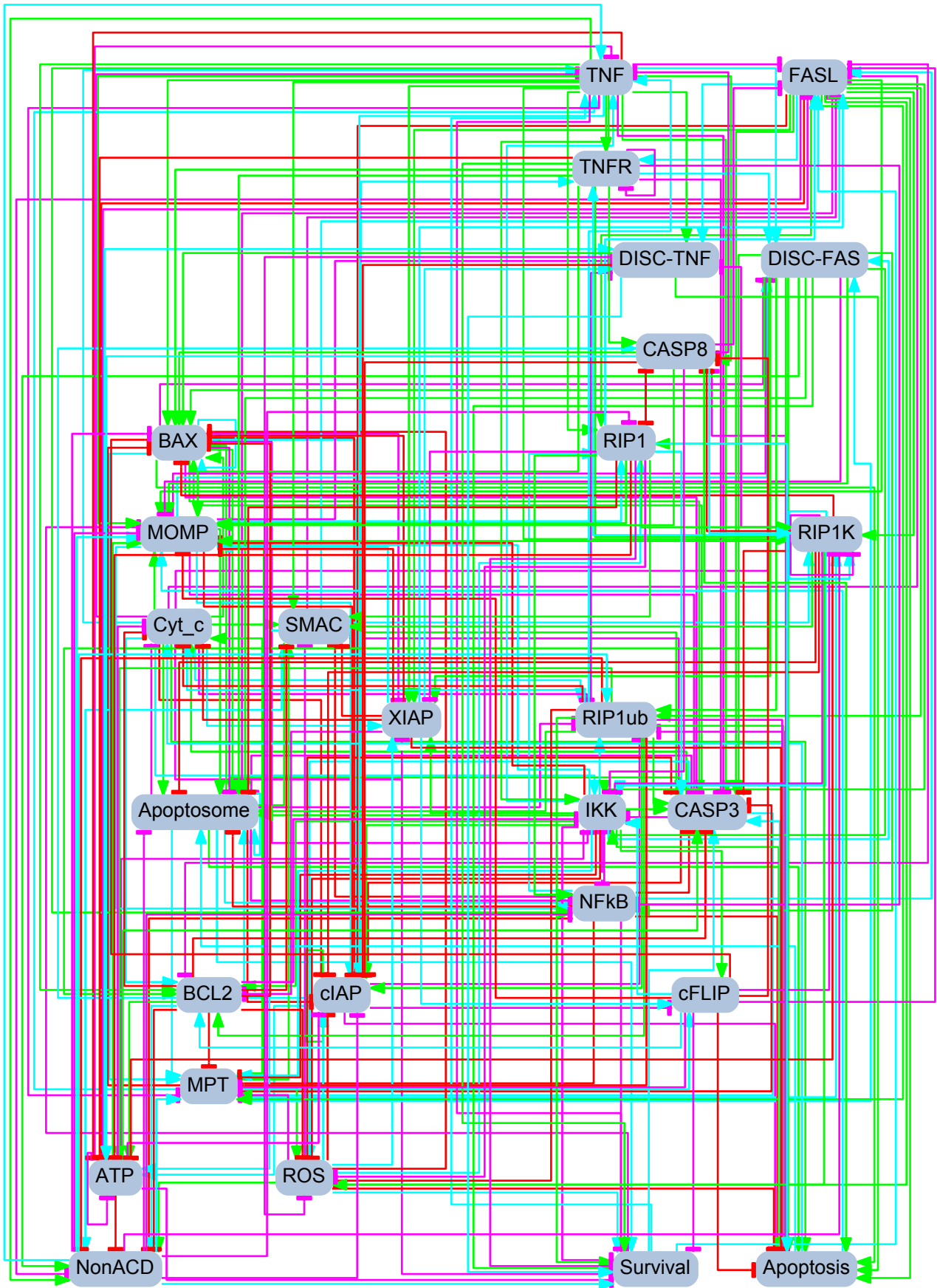
cIAP	→	BAX
DISC-FAS	→	BCL2
IKK	→	BCL2
NFkB	→	BCL2
RIP1	→	BCL2
RIP1ub	→	BCL2
TNF	→	BCL2
TNFR	→	BCL2
FASL	†	BCL2
XIAP	†	BCL2
cFLIP	→	BCL2
ATP	→	CASP3
Apoptosome	→	CASP3
BAX	→	CASP3
BCL2	†	CASP3
DISC-FAS	→	CASP3
FASL	→	CASP3
IKK	→	CASP3
MPT	†	CASP3
NFkB	†	CASP3
RIP1K	†	CASP3
RIP1ub	→	CASP3
ROS	†	CASP3
TNF	→	CASP3
Apoptosis	→	CASP3
BAX	†	CASP3
MOMP	†	CASP3
Survival	→	CASP3
TNF	†	CASP3
TNFR	†	CASP3
DISC-FAS	→	CASP8
RIP1	†	CASP8
RIP1K	†	CASP8
RIP1ub	→	CASP8
TNF	→	CASP8
TNFR	→	CASP8
cFLIP	†	CASP8
Apoptosis	†	CASP8
BCL2	→	CASP8
BCL2	†	Cyt_c
CASP3	→	Cyt_c
DISC-FAS	→	Cyt_c
MPT	→	Cyt_c
RIP1K	→	Cyt_c
RIP1ub	†	Cyt_c
TNFR	→	Cyt_c
XIAP	†	Cyt_c
cFLIP	†	Cyt_c
Apoptosis	→	Cyt_c
Apoptosome	†	Cyt_c
RIP1ub	→	Cyt_c
BAX	†	DISC-FAS
Cyt_c	†	DISC-FAS
IKK	→	DISC-FAS
MOMP	→	DISC-FAS
MOMP	†	DISC-FAS
MPT	→	DISC-FAS
TNF	→	DISC-FAS
TNFR	→	DISC-FAS
TNF	→	DISC-TNF
TNFR	→	DISC-TNF
ATP	→	DISC-TNF
FASL	→	DISC-TNF
MOMP	†	DISC-TNF
RIP1K	†	DISC-TNF
ATP	†	FASL

Apoptosome	⊥	FASL
Cyt_c	⊥	FASL
NFkB	→	FASL
RIP1	→	FASL
SMAC	→	FASL
SMAC	⊥	FASL
Survival	→	FASL
TNF	⊥	FASL
XIAP	→	FASL
cFLIP	⊥	FASL
DISC-FAS	→	IKK
FASL	→	IKK
TNF	→	IKK
TNFR	→	IKK
BAX	⊥	IKK
BCL2	⊥	IKK
Cyt_c	→	IKK
NFkB	⊥	IKK
RIP1K	⊥	IKK
cFLIP	→	IKK
ATP	→	MOMP
CASP8	→	MOMP
Cyt_c	→	MOMP
DISC-FAS	→	MOMP
FASL	→	MOMP
IKK	⊥	MOMP
MPT	→	MOMP
RIP1	→	MOMP
RIP1K	→	MOMP
RIP1ub	⊥	MOMP
TNF	→	MOMP
TNFR	→	MOMP
XIAP	⊥	MOMP
cFLIP	⊥	MOMP
Apoptosis	→	MOMP
DISC-FAS	⊥	MOMP
IKK	→	MOMP
NonACD	→	MOMP
NonACD	⊥	MOMP
XIAP	→	MOMP
BCL2	⊥	MPT
FASL	→	MPT
IKK	⊥	MPT
NFkB	⊥	MPT
RIP1K	→	MPT
RIP1ub	⊥	MPT
ROS	→	MPT
TNF	→	MPT
Apoptosome	→	MPT
BAX	→	MPT
CASP3	→	MPT
NonACD	→	MPT
ROS	⊥	MPT
CASP3	⊥	NFkB
DISC-FAS	→	NFkB
RIP1	→	NFkB
TNF	→	NFkB
Apoptosome	→	NFkB
Apoptosome	⊥	NFkB
IKK	⊥	NFkB
NonACD	⊥	NFkB
TNFR	⊥	NFkB
ATP	⊥	NonACD
BCL2	⊥	NonACD
DISC-FAS	→	NonACD
FASL	→	NonACD

NFkB	†	NonACD
RIP1ub	†	NonACD
ROS	→	NonACD
TNF	→	NonACD
BCL2	→	NonACD
FASL	†	NonACD
CASP8	†	RIP1
DISC-FAS	→	RIP1
FASL	→	RIP1
TNF	→	RIP1
MOMP	→	RIP1
NonACD	†	RIP1
ROS	→	RIP1
FASL	→	RIP1K
RIP1	→	RIP1K
TNF	→	RIP1K
TNFR	→	RIP1K
CASP8	→	RIP1K
MPT	→	RIP1K
RIP1K	†	RIP1K
SMAC	→	RIP1K
cFLIP	†	RIP1K
DISC-FAS	→	RIP1ub
FASL	→	RIP1ub
TNF	→	RIP1ub
TNFR	→	RIP1ub
Apoptosome	†	RIP1ub
Cyt_c	†	RIP1ub
IKK	→	RIP1ub
NonACD	→	RIP1ub
cIAP	†	RIP1ub
BCL2	†	ROS
DISC-FAS	→	ROS
FASL	→	ROS
IKK	†	ROS
MPT	→	ROS
RIP1K	→	ROS
RIP1ub	†	ROS
CASP3	→	ROS
DISC-TNF	†	ROS
Apoptosome	→	SMAC
BCL2	†	SMAC
CASP3	→	SMAC
Cyt_c	→	SMAC
DISC-FAS	→	SMAC
MPT	→	SMAC
NFkB	†	SMAC
RIP1	→	SMAC
RIP1K	→	SMAC
TNF	→	SMAC
XIAP	†	SMAC
cFLIP	†	SMAC
ROS	†	SMAC
DISC-FAS	→	Survival
NFkB	→	Survival
RIP1ub	→	Survival
TNFR	→	Survival
ATP	†	Survival
Apoptosome	→	Survival
Cyt_c	†	Survival
DISC-TNF	→	Survival
IKK	†	Survival
NonACD	→	Survival
RIP1	†	Survival
ROS	→	Survival
TNF	†	Survival

cFLIP	+	Survival
ATP	+	TNF
Cyt_c	→	TNF
Cyt_c	+	TNF
IKK	→	TNF
MPT	→	TNF
RIP1ub	→	TNF
Survival	→	TNF
TNF	→	TNFR
FASL	→	TNFR
RIP1K	→	TNFR
TNFR	+	TNFR
cIAP	→	TNFR
DISC-FAS	→	XIAP
FASL	→	XIAP
IKK	→	XIAP
SMAC	+	XIAP
TNF	→	XIAP
Cyt_c	→	XIAP
ROS	→	XIAP
IKK	→	cFLIP
MPT	→	cFLIP
XIAP	→	cFLIP
cIAP	+	cFLIP
Apoptosome	+	cIAP
BAX	+	cIAP
CASP3	+	cIAP
CASP8	+	cIAP
Cyt_c	+	cIAP
DISC-TNF	+	cIAP
FASL	+	cIAP
IKK	→	cIAP
MOMP	+	cIAP
MPT	+	cIAP
RIP1K	+	cIAP
RIP1ub	→	cIAP
ROS	+	cIAP
cIAP	→	cIAP
ATP	+	cIAP
MOMP	→	cIAP
NonACD	+	cIAP
TNF	→	cIAP

Cell-fate decision model: in-silico PKN 6 (50% noise)



BCL2	→	ATP
FASL	⊥	ATP
RIP1	⊥	ATP
RIP1K	⊥	ATP
RIP1ub	→	ATP
TNF	⊥	ATP
TNFR	⊥	ATP
ATP	⊥	ATP
CASP8	→	ATP
IKK	⊥	ATP
SMAC	→	ATP
cIAP	→	ATP
Apoptosome	→	Apoptosis
BAX	→	Apoptosis
CASP8	→	Apoptosis
Cyt_c	→	Apoptosis
DISC-FAS	→	Apoptosis
DISC-TNF	→	Apoptosis
FASL	→	Apoptosis
IKK	→	Apoptosis
NFκB	⊥	Apoptosis
RIP1ub	→	Apoptosis
ROS	⊥	Apoptosis
XIAP	⊥	Apoptosis
cFLIP	⊥	Apoptosis
RIP1	→	Apoptosis
RIP1ub	⊥	Apoptosis
cIAP	⊥	Apoptosis
BAX	→	Apoptosome
Cyt_c	→	Apoptosome
DISC-FAS	→	Apoptosome
IKK	→	Apoptosome
MOMP	→	Apoptosome
NFκB	⊥	Apoptosome
RIP1	⊥	Apoptosome
RIP1K	⊥	Apoptosome
RIP1ub	→	Apoptosome
TNFR	→	Apoptosome
Apoptosis	→	Apoptosome
Apoptosome	→	Apoptosome
BAX	⊥	Apoptosome
CASP3	⊥	Apoptosome
NonACD	⊥	Apoptosome
cIAP	→	Apoptosome
Apoptosome	→	BAX
BCL2	⊥	BAX
CASP3	→	BAX
CASP8	→	BAX
Cyt_c	→	BAX
DISC-FAS	→	BAX
DISC-TNF	→	BAX
MPT	⊥	BAX
RIP1K	⊥	BAX
ROS	⊥	BAX
TNF	→	BAX
TNFR	→	BAX
XIAP	⊥	BAX
cFLIP	⊥	BAX
BAX	→	BAX
NonACD	⊥	BAX
cIAP	→	BAX
DISC-FAS	→	BCL2
IKK	→	BCL2
RIP1ub	→	BCL2
TNF	→	BCL2
Cyt_c	→	BCL2

FASL	+	BCL2
XIAP	+	BCL2
cFLIP	→	BCL2
ATP	→	CASP3
Apoptosome	→	CASP3
BAX	→	CASP3
BCL2	+	CASP3
DISC-FAS	→	CASP3
FASL	→	CASP3
IKK	→	CASP3
MPT	+	CASP3
NFkB	+	CASP3
RIP1K	+	CASP3
RIP1ub	→	CASP3
ROS	+	CASP3
TNF	→	CASP3
Apoptosis	→	CASP3
BAX	+	CASP3
MOMP	+	CASP3
RIP1	→	CASP3
Survival	→	CASP3
TNF	+	CASP3
TNFR	+	CASP3
RIP1	+	CASP8
RIP1K	+	CASP8
TNF	→	CASP8
TNFR	→	CASP8
cFLIP	+	CASP8
Apoptosis	+	CASP8
BCL2	→	CASP8
BCL2	+	Cyt_c
CASP3	→	Cyt_c
MPT	→	Cyt_c
RIP1ub	+	Cyt_c
XIAP	+	Cyt_c
ATP	+	Cyt_c
Apoptosis	→	Cyt_c
Apoptosome	+	Cyt_c
RIP1ub	→	Cyt_c
BAX	+	DISC-FAS
Cyt_c	+	DISC-FAS
IKK	→	DISC-FAS
MOMP	→	DISC-FAS
MOMP	+	DISC-FAS
MPT	→	DISC-FAS
TNF	→	DISC-FAS
TNFR	→	DISC-FAS
TNF	→	DISC-TNF
ATP	→	DISC-TNF
FASL	→	DISC-TNF
MOMP	+	DISC-TNF
RIP1K	+	DISC-TNF
RIP1ub	+	DISC-TNF
XIAP	→	DISC-TNF
ATP	+	FASL
Apoptosome	+	FASL
CASP8	+	FASL
Cyt_c	+	FASL
NFkB	→	FASL
RIP1	→	FASL
SMAC	→	FASL
SMAC	+	FASL
Survival	→	FASL
TNF	+	FASL
XIAP	→	FASL
cFLIP	+	FASL

DISC-FAS	→	IKK
FASL	→	IKK
TNF	→	IKK
BAX	†	IKK
BCL2	†	IKK
CASP3	†	IKK
CASP8	†	IKK
Cyt_c	→	IKK
NFkB	†	IKK
RIP1K	→	IKK
RIP1K	†	IKK
cFLIP	→	IKK
ATP	→	MOMP
CASP8	→	MOMP
Cyt_c	→	MOMP
DISC-FAS	→	MOMP
FASL	→	MOMP
IKK	†	MOMP
MPT	→	MOMP
RIP1	→	MOMP
RIP1K	→	MOMP
TNF	→	MOMP
TNFR	→	MOMP
XIAP	†	MOMP
cFLIP	†	MOMP
Apoptosis	→	MOMP
DISC-FAS	†	MOMP
IKK	→	MOMP
NonACD	→	MOMP
NonACD	†	MOMP
Survival	†	MOMP
XIAP	→	MOMP
BCL2	†	MPT
FASL	→	MPT
IKK	†	MPT
NFkB	†	MPT
RIP1ub	†	MPT
ROS	→	MPT
Apoptosome	→	MPT
BAX	→	MPT
CASP3	→	MPT
IKK	→	MPT
NonACD	→	MPT
ROS	†	MPT
TNF	†	MPT
cFLIP	†	MPT
CASP3	†	NFkB
DISC-FAS	→	NFkB
RIP1	→	NFkB
TNF	→	NFkB
Apoptosome	→	NFkB
Apoptosome	†	NFkB
IKK	†	NFkB
MOMP	→	NFkB
NonACD	†	NFkB
TNFR	†	NFkB
ATP	†	NonACD
BCL2	†	NonACD
DISC-FAS	→	NonACD
NFkB	†	NonACD
RIP1ub	†	NonACD
ROS	→	NonACD
TNF	→	NonACD
BCL2	→	NonACD
FASL	†	NonACD
SMAC	→	NonACD

CASP8	+	RIP1
DISC-FAS	→	RIP1
FASL	→	RIP1
TNF	→	RIP1
MOMP	→	RIP1
NFkB	→	RIP1
NonACD	+	RIP1
ROS	→	RIP1
FASL	→	RIP1K
RIP1	→	RIP1K
TNF	→	RIP1K
TNFR	→	RIP1K
CASP8	→	RIP1K
MPT	→	RIP1K
NonACD	+	RIP1K
RIP1K	→	RIP1K
RIP1K	+	RIP1K
SMAC	→	RIP1K
cFLIP	+	RIP1K
DISC-FAS	→	RIP1ub
FASL	→	RIP1ub
Apoptosis	+	RIP1ub
Apoptosome	+	RIP1ub
Cyt_c	→	RIP1ub
Cyt_c	+	RIP1ub
IKK	→	RIP1ub
NonACD	→	RIP1ub
cIAP	+	RIP1ub
BCL2	+	ROS
FASL	→	ROS
IKK	+	ROS
MPT	→	ROS
RIP1K	→	ROS
RIP1ub	+	ROS
CASP3	→	ROS
DISC-TNF	+	ROS
RIP1	+	ROS
Apoptosome	→	SMAC
BCL2	+	SMAC
CASP3	→	SMAC
Cyt_c	→	SMAC
MPT	→	SMAC
NFkB	+	SMAC
RIP1	→	SMAC
RIP1K	→	SMAC
TNF	→	SMAC
XIAP	+	SMAC
CASP3	+	SMAC
ROS	+	SMAC
DISC-FAS	→	Survival
RIP1ub	→	Survival
TNFR	→	Survival
ATP	+	Survival
Apoptosome	→	Survival
Cyt_c	+	Survival
DISC-TNF	→	Survival
IKK	+	Survival
NFkB	+	Survival
NonACD	→	Survival
RIP1	+	Survival
ROS	→	Survival
TNF	+	Survival
cFLIP	+	Survival
ATP	+	TNF
CASP8	+	TNF
Cyt_c	→	TNF

Cyt_c	⊥	TNF
IKK	→	TNF
MPT	→	TNF
NonACD	→	TNF
RIP1ub	→	TNF
Survival	→	TNF
TNF	→	TNFR
FASL	→	TNFR
RIP1K	→	TNFR
TNFR	⊥	TNFR
cIAP	→	TNFR
DISC-FAS	→	XIAP
FASL	→	XIAP
IKK	→	XIAP
TNF	→	XIAP
BAX	⊥	XIAP
Cyt_c	→	XIAP
NFkB	⊥	XIAP
RIP1	⊥	XIAP
ROS	→	XIAP
IKK	→	cFLIP
MPT	→	cFLIP
XIAP	→	cFLIP
cIAP	⊥	cFLIP
Apoptosome	⊥	cIAP
BAX	⊥	cIAP
CASP3	⊥	cIAP
CASP8	⊥	cIAP
Cyt_c	⊥	cIAP
DISC-TNF	⊥	cIAP
FASL	⊥	cIAP
IKK	→	cIAP
MOMP	⊥	cIAP
RIP1K	⊥	cIAP
RIP1ub	→	cIAP
ROS	⊥	cIAP
cIAP	→	cIAP
ATP	⊥	cIAP
MOMP	→	cIAP
NonACD	⊥	cIAP
ROS	→	cIAP
TNF	→	cIAP