

Table S3: Classification of the interactions in the optimized network

Interactions	References
IAV→IAV	[1, 2]
IAV→COX2	[3, 4, 5, 6]
COX2→NGF	[6, 7]
COX2→SAA1	[6, 7]
COX2→TLR3	[5, 6, 7]
COX2→IL32	[3,6]
COX2→IL27	[3,6]
COX2→IL22RA1	[6, 7]
COX2→IL22RA2	[6, 7]
COX2→TNF	[3,4]
COX2→CXCR4	[6, 7]
COX2→CCL2	[6, 7]
COX2→TNFSF12	[6, 7]
IL27— IAV	[8]
NGF→NFκB	[9]
TLR3→TLR3	[10]
TLR3→IL29	[10, 11]
TLR3→IFNβ1	[10, 11]
TLR3→IL27	[10, 11, 12]
IL32— COX-2	[3]
IL32→NOS2	[13]
IL22RA1—IL22	[14]
TNF→CXCL10	[15, 16]
TNF→CCL2	[17]
TNF→TNF	[15, 18]
CXCR4→CXCR4	[19]
NOS2— IL32	[13]
IL22—IL22RA2	[14]
IL12→IFN-γ	[20]
CCL2→IL6	[21]
NFκB→NFκB	[22]
NFκB→IFN-β	[22, 23, 24]
IL1B→IL1B	[25, 26]
IL29→IL29	[14]
IL10→IL10	[14]
MHC Class II →MHC Class II	[27]
CD14→IL6	[28]
CD40→CD40	[29]
CD40→IL10	[29, 30]
TNFSF13B→TNFSF13B	[31]
IFN-α→IFN-α	[32]
IFN-α — IAV	[33, 34]

P38MAPK→IFN- α	[35]
P38MAPK→IFNB1	[35]
IL12B→IL12B	[36]
NGF→IL1B	predicted
SAA1→NF κ B	predicted
SAA1→TLR3	predicted
IL32→IL1B	predicted
IL1B→IL32	predicted
TNF→CXCR3	predicted
TNF→MHC Class II	predicted
TNF→IL12	predicted
TNF→CD14	predicted
CXCR4→CCL2	predicted
CXCR4→CCL5	predicted
IFN- γ →TNF	predicted
NF κ B→IL15RA	predicted
TNFSF12→CCL2	predicted
TNFSF12→IL6	predicted
IL27→IL1B	predicted
CCL2→CCL5	predicted
CCL5→MMP19	predicted
CCL5→TNF	predicted
CCL5→IL6	predicted
IL1B→SAA1	predicted
CXCL10→TNF	predicted
IL29→IL10	predicted
IL6→TNF	predicted
IL10→CCL16	predicted
IL10→HRG	predicted
IL10→MHC Class II	predicted
IL22→IL10	predicted
IFNB1→P38MAPK	predicted
CD14→CCL2	predicted
CD40→MHC Class II	predicted
CD40→CD27	predicted
CD40→TNFSF13B	predicted
IFN- α →P38MAPK	predicted
P38MAPK→IL29	predicted
P38MAPK→FADD	predicted
P38MAPK→IL12B	predicted
TLR3→IFN- β	false positive interaction
TLR3→P38MAPK	false positive interaction
IL1B→TLR3	false positive interaction
IL1B→NF κ B	false positive interaction

TNF→CCL5	false positive interaction
TNF→IL6	false positive interaction
TNFSF12→TNF	false positive interaction
TNFSF12→CCL5	false positive interaction

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