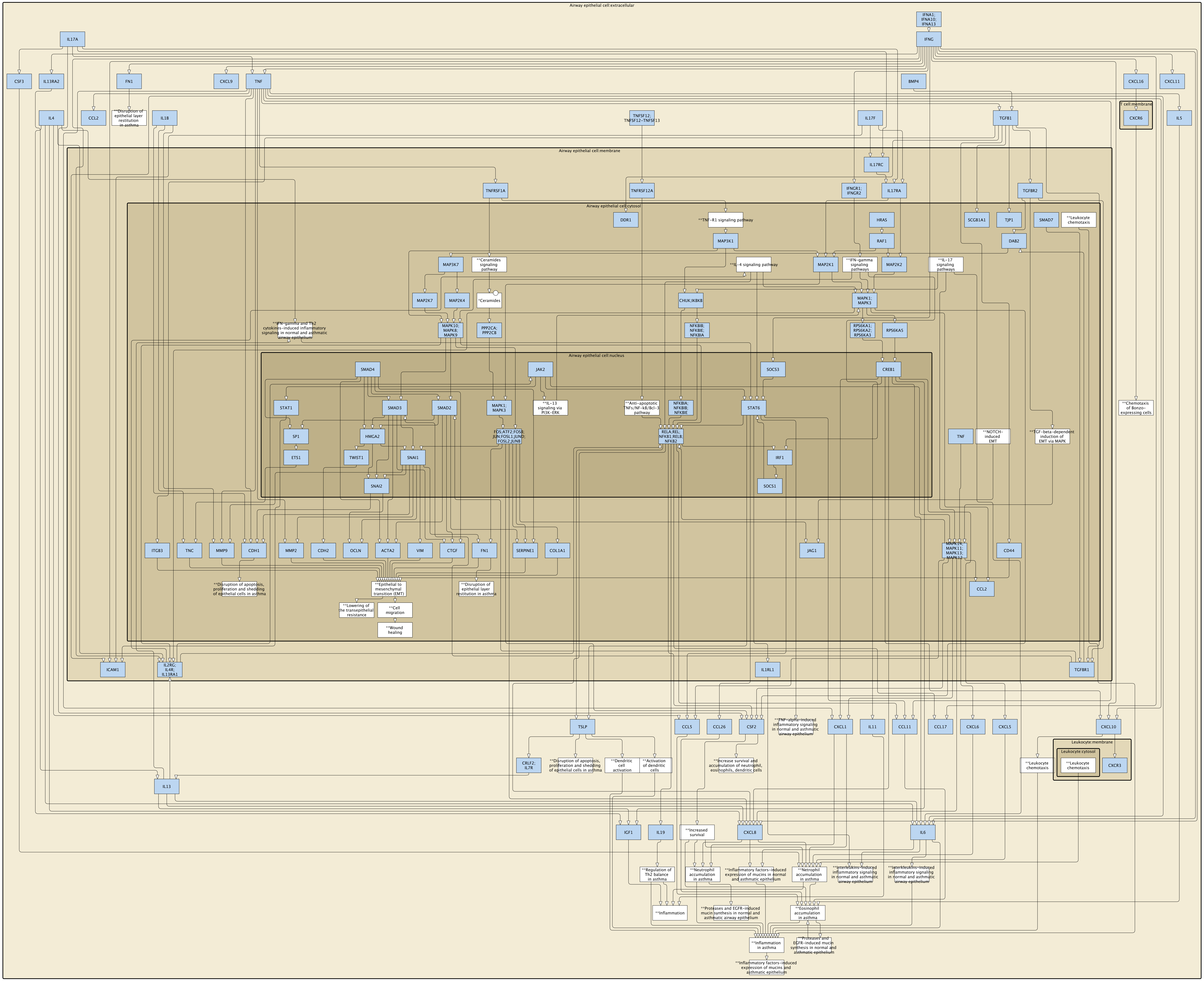
Airway epithelial cell:extracellular
IFNA1; IFNA10; IFNA13
IFNG
IL17A
CSF3
IL13RA2
FN1
CXCL9
TNF
BMP4
CXCL16
CXCL11
IL4
CCL2
**Disruption of epithelial layer restitution in asthma
IL1B
TNFSF12; TNFSF12-TNFSF13
IL17F
TGFB1
T cell:membrane
CXCR6
IL5
Airway epithelial cell:membrane
IL17RC
TNFRSF1A
TNFRSF12A
IFNGR1; IFNGR2
IL17RA
TGFBR2
Airway epithelial cell:cytosol
DDR1
**TNF-R1 signaling pathway
HRAS
SCGB1A1
TJP1
SMAD7
**Leukocyte chemotaxis
MAP3K1
RAF1
DAB2
MAP3K7
**Ceramides signaling pathway
**IL-4 signaling pathway
MAP2K1
**IFN-gamma signaling pathways
MAP2K2
**IL-17 signaling pathways
MAP2K7
MAP2K4
*Ceramides
CHUK;IKBKB
MAPK1; MAPK3
**IFN-gamma and Th2 cytokines-induced inflammatory signaling in normal and asthmatic airway epithelium
MAPK10; MAPK8; MAPK9
PPP2CA; PPP2CB
NFKBIB; NFKBIE; NFKBIA
RPS6KA1; RPS6KA2; RPS6KA3
RPS6KA5
Airway epithelial cell:nucleus
SMAD4
JAK2
SOCS3
CREB1
STAT1
SMAD3
SMAD2
MAPK1; MAPK3
**IL-13 signaling via PI3K-ERK
**Anti-apoptotic TNFs/NF-kB/Bcl-3 pathway
NFKBIA; NFKBIB; NFKBIE
STAT6
SP1
HMGA2
FOS;ATF2;FOSB; JUN;FOSL1;JUND; FOSL2;JUNB
RELA;REL; NFKB1;RELB; NFKB2
TNF
**NOTCH-induced EMT
**TGF-beta-dependent induction of EMT via MAPK
**Chemotaxis of Bonzo-expressing cells
ETS1
TWIST1
SNAI1
IRF1
SNAI2
SOCS1
ITGB3
TNC
MMP9
CDH1
MMP2
CDH2
OCLN
ACTA2
VIM
CTGF
FN1
SERPINE1
COL1A1
JAG1
MAPK14; MAPK11; MAPK13; MAPK12
CD44
**Disruption of apoptosis, proliferation and shedding of epithelial cells in asthma
**Epithelial to mesenchymal transition (EMT)
**Disruption of epithelial layer restitution in asthma
CCL2
**Lowering of the transepithelial resistance
**Cell migration
**Wound healing
ICAM1
IL2RG; IL4R; IL13RA1
IL1RL1
TGFBR1
TSLP
CCL5
CCL26
CSF2
**TNF-alpha-induced inflammatory signaling in normal and asthmatic airway epithelium
CXCL1
IL11
CCL11
CCL17
CXCL6
CXCL5
CXCL10
Leukocyte:membrane
Leukocyte:cytosol
CRLF2; IL7R
**Disruption of apoptosis, proliferation and shedding of epithelial cells in asthma
**Dendritic cell activation
**Activation of dendritic cells
**Increase survival and accumulation of neutrophil, eosinophils, dendritic cells
**Leukocyte chemotaxis
**Leukocyte chemotaxis
CXCR3
IL13
IGF1
IL19
**Increased survival
CXCL8
IL6
**Regulation of Th2 balance in asthma
**Neutrophil accumulation in asthma
**Inflammatory factors-induced expression of mucins in normal and asthmatic epithelium
**Netrophil accumulation in asthma
**Interleukins-induced inflammatory signaling in normal and asthmatic airway epithelium
**Interkleukins-induced inflammatory signaling in normal and asthmatic airway epithelium
**Inflammation
**Proteases and EGFR-induced mucin synthesis in normal and asthmatic airway epithelium
**Eosinophil accumulation in asthma
**Inflammation in asthma
**Proteases and EGFR-induced mucin synthesis in normal and asthmatic epithelium
**Inflammatory factors-induced expression of mucins and asthmatic epithelium