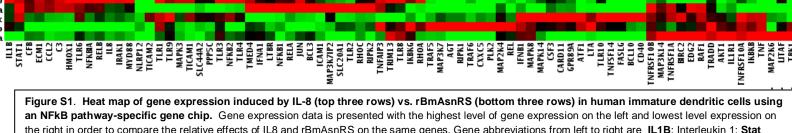
## **Supplemental Material**

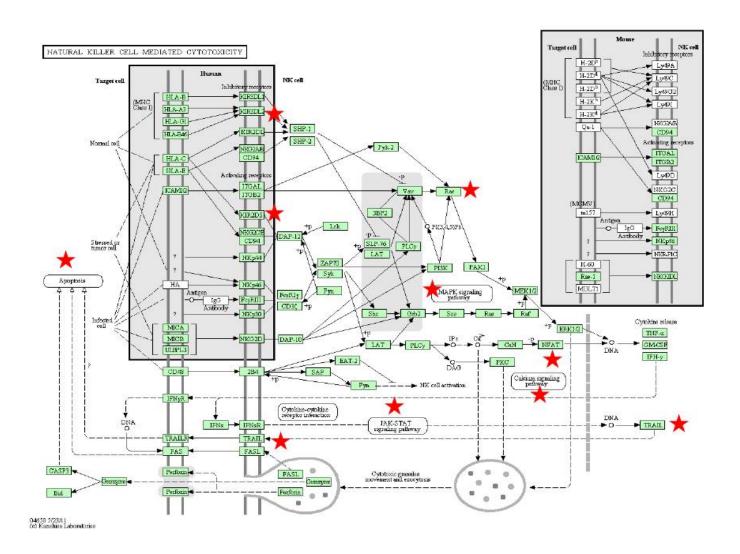
Complete gene expression data using Affymetrix 3PRIME IVT ID Chip™ (54,614 genes) and human immature dendritic cells stimulated with rBmAsnRS, IL-8 and control (media) has been deposited with the National Center for Biotechnology Information Gene Expression Omnibus (GEO, (<a href="http://www.ncbi.nlm.nih.gov/geo/info/linking.html">http://www.ncbi.nlm.nih.gov/geo/info/linking.html</a>) with the accession number of GSE39999.

- Figure S1. Heat map showing differential gene expression in human immature dendritic cells stimulated with rBmAsnRS vs IL8 by using an NFkB specific mini-microarray.
- **Figure S2**. K.E.G.G.\* Pathway: NK cell mediated cytotoxicity signal transduction pathway with key rBmAsnRS- regulated genes indicated by red stars.
- Figure S3. K.E.G.G. Pathway: Toll-like receptor signal transduction pathway with key rBmAsnRS-regulated genes indicated by red stars.
- Figure S4. K.E.G.G. Pathway: Chemokine signal transduction pathway with key rBmAsnRS-regulated genes indicated by red stars.
- Figure S5. K.E.G.G. pathway: MAPK Signaling Pathway with key rBmAsnRS -regulated genes indicated by red stars.
- \* Kyoto Encyclopedia of Genes and Genomes.

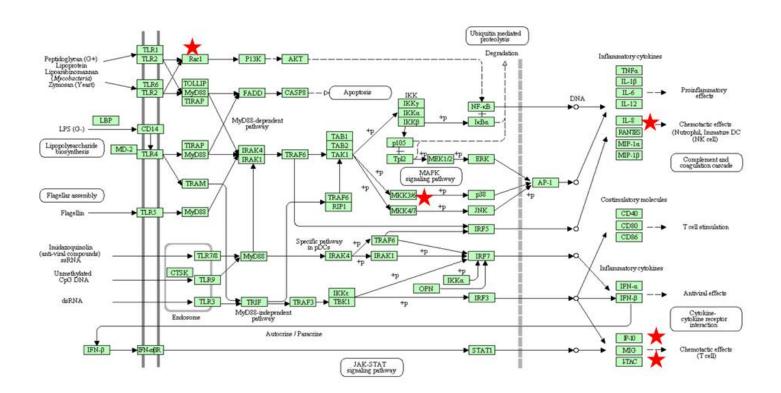


the right in order to compare the relative effects of IL8 and rBmAsnRS on the same genes. Gene abbreviations from left to right are IL1B: Interleukin 1; Stat 1:Signal transducer and activator of transcription 1; CFB: Complement factor B; ECM1: Extra Cellular Matrix protein 1; CCL2: Chemokine ligand 2; C3: Complement component 3: HMOX1: Heme oxygenase 1: TLR6: Toll-like receptor 6: NFKBA: nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha: IL8: Interleukin 8: IRAK1: Interleukin 1 receptor associated kinase 1: MYD88: myeloid differentiation primary response gene 88: NLRP12: NACHT, LRR and PYD domains-containing protein 12; TICAM2:Toll-like receptor adaptor molecule 2; TLR1:Toll-like receptor 1; TLR9:Toll-like receptor 9; MAPK3: Mitogen activated protein kinase 3: TICAM1:Toll-like receptor adaptor molecule 1: SLC44A2: solute carrier family 44, member 2: PPPSC: plipastatin synthetase: TLF3: Toll like receptor 3: NFKB2: nuclear factor of kappa light polypeptide gene enhancer in B-cells 2: TLR4:Toll- like receptor 4: TMED4: Putative NF-kappa-B-activating protein 156; IFNA1: Interferon-alpha/beta receptor alpha chain; LTBR: lymphotoxin beta receptor (TNFR superfamily, member 3); NFKB1: nuclear factor of kappa light polypeptide gene enhancer in B-cells 1: RELA; reticuloendotheliosis viral oncogene homolog A: JUN: Jun oncogene: BCL3: B cell leukemia/lymphoma protein 3: ICAM1:intercellular adhesion molecule 1: MAP3K7iP2: mitogen-activated protein kinase kinase kinase 7interacting protein 2; SLC20A1: solute carrier family member 20: TLR2: Toll-like receptor 2; RHOC: ras homologue family member C: RIPK2: receptorinteracting serine-threonine kinase 2; TNFAIP3: TNF alpha induced protein 3; TRIM13: tripartite motif containing 13; TLR8: Toll-like receptor 8; IKBKG: inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma: RHOA; ras homologue family A; TRAF5; TNF receptor associated factor 5; MAP3K7: mitogen-activated protein kinase kinase kinase 7: AGT: angiotensinogen: RIPK1: receptor-interacting serine threonine kinase 1: TRAF6: TNF receptor-associated factor 6: CXXC5: CXXC finger protein 5: PLK2: polo-like kinase 2: MAP2K4: mitogen-activated protein kinase kinase 4: REL: reticuloendotheliosis viral oncogene; IFNB1: infB1 hypothetical protein; MAPK8: mitogen activated protein kinase 8; MAPK14: mitogen activated protein kinase 14; CSF3: colony stimulating factor 3; CARD11: caspase recruitment domain family, member 11; GPR89A: G protein-coupled receptor 89A; ATF1: activating transcription factor 1; LTA: lymphotoxin alpha; TBK1: TANK binding kinase 1; LTAF: lipopo-lysaccharide-induced TNF factor; MAP2K6: Mitogen activated protein kinase 6; TNF: tumor necrosis factor; IKBKB: nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha b; RNFRSF10A: tumor necrosis factor receptor superfamily, member 10a: IL1R1:Interleukin 1 receptor 1: AKT1: v-akt murine thymoma viral oncogene homolog 1:TRADD: TNFRSF1A-associated via death domain; RAF1: v-raf-1 murine leukemia viral oncogene homolog 1; EDG2: endothelial differentiation gene 2; MIRC2: microRNA cluster 2; TNFRSF1A: tumor necrosis factor receptor superfamily, member 1A; MAP3K14: mitogen-activated protein kinase kinase kinase 14; TNFRSF10B: tumor necrosis factor receptor superfamily, member 10b; CD40: TNF receptor superfamily member; BCL10: B-cell CLL/lymphoma 10: FASLG: Fas ligand member 6; TNFSF14:Tumor necrosis factor ligand superfamily member 14; TLR10:Toll-like receptor 10.

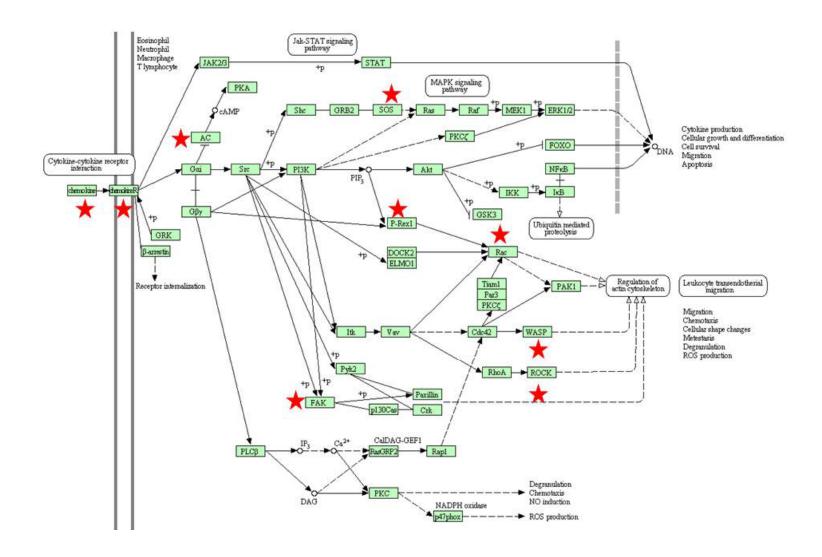
**FIGURE S2**. K.E.G.G. Pathway of Natural Killer Cell Mediated Cytotoxicity stimulated by rBmAsnRS in human immature dendritic cells. Key rBmAsnRS regulated genes are indicated by a red star.



**FIGURE S3**. K.E.G.G. Pathway of Toll-like receptor mediated signal transduction stimulated by rBmAsnRS in human immature dendritic cells. Key rBmAsnRS-regulated genes are indicated by a red star.



**FIGURE S4**. K.E.G.G. Pathway of Chemokine receptor signal transduction stimulated by rBmAsnRS in human immature dendritic cells. Key rBmAsnRS-regulated genes are indicated by a red star.



**Figure S5.** K.E.G.G. Pathway of MAPK signal transduction stimulated by rBmAsnRS in human immature dendritic cells. Key rBmAsnRS-regulated genes are indicated by a red star.

