Supplementary data.

Table S1. Transcripts induced by SLR14 in nasal epithelial cells.

Table S2: Patients with evidence of co-infection or non-viral infection, study #1

Fig S1. Patient characteristics, mRNA biomarker study of 68 nasopharyngeal swabs (study 1)

Fig S2. ROC curves showing predictive value of individual ISG mRNA levels for detection of a respiratory virus in 68 NP swabs (study 1)

Fig S3. Patient age distribution, 151 NP swabs, study 2.

Fig S4. Relationship between concentration of CXCL10 or CXCL11 and Ct value at which RT-qPCR for rhinovirus became positive (study 2)

Fig S5. Correlation between [CXCL11] and [CXCL10], 219 NP swabs (study 1+ study 2).

Fig S6.ROC curves showing correlation between [CXCL11] or [CXCL10] (pg/ml) in NP swab transport medium and detection of respiratory virus in 219 NP swabs (study 1 + study 2; see Fig 5.)

Table S1: Top 50 transcripts induced by SLR14 in nasal epithelial cells

[#]grey shading indicates mRNA encoding secreted protein
bold type indicates biomarker assessed in this study

		Name	Log2FoldChange	p-adj
1	ENSG00000119917	IFIT3	8.611393418	8.0924E-287
2	**ENSG00000119922**	**IFIT2**	**8.590190005**	**6.6884E-275**
3	ENSG00000185745	IFIT1	8.546567665	4.4263E-270
4	**ENSG00000135114**	**OASL**	**6.572461394**	**1.3962E-193**
5	ENSG00000138646	HERC5	6.510793036	8.39773E-90
6	ENSG00000157601	MX1	6.487847248	2.3677E-174
7	**ENSG00000169245**	**CXCL10[#]**	**6.318573752**	**3.54056E-87**
8	ENSG00000173110	HSPA6	6.071703284	1.54506E-98
9	ENSG00000089127	OAS1	5.808443795	4.2228E-138
10	ENSG00000137965	IFI44	5.742808112	1.2311E-112
11	ENSG00000187608	ISG15	5.659229306	6.5815E-180
12	**ENSG00000169248**	**CXCL11**	**5.642394328**	**3.53198E-58**
13	ENSG00000111335	OAS2	5.632369276	3.0725E-143
14	ENSG00000134326	CMPK2	5.581856338	7.73411E-60
15	ENSG00000183486	MX2	5.282207919	6.94324E-54
16	ENSG00000006210	CX3CL1	5.270156491	2.45627E-75
17	ENSG00000161570	NA	5.109274183	1.30602E-62
18	ENSG00000169429	CXCL8	4.771849114	4.65035E-65
19	ENSG00000204389	HSPA1A	4.713080209	1.8264E-124
20	ENSG00000107201	DDX58	4.666164824	7.5314E-102
21	ENSG00000111331	OAS3	4.506616219	1.0547E-119
22	ENSG00000138135	CH25H	4.505207533	1.11172E-32
23	ENSG00000137959	IFI44L	4.288815032	4.09136E-31
24	ENSG00000115267	IFIH1	4.276995899	3.8088E-124
25	ENSG00000126709	IFI6	4.274630573	3.3313E-76
26	ENSG00000137628	DDX60	4.201802303	3.55189E-71
27	ENSG00000134321	RSAD2	4.18430399	2.72845E-26
28	ENSG00000204388	HSPA1B	4.15467765	1.1595E-113
29	ENSG00000182393	IFNL1	4.104481699	1.77067E-26
30	ENSG00000177409	SAMD9L	3.936210162	7.31532E-40
31	ENSG00000197279	ZNF165	3.912907427	3.65517E-77
32	ENSG00000185885	IFITM1	3.840045518	8.65309E-35
33	ENSG00000136688	IL36G	3.702192698	7.67828E-39
34	ENSG00000130589	HELZ2	3.516215066	2.3625E-68
35	ENSG00000163739	CXCL1	3.413686517	5.36081E-38

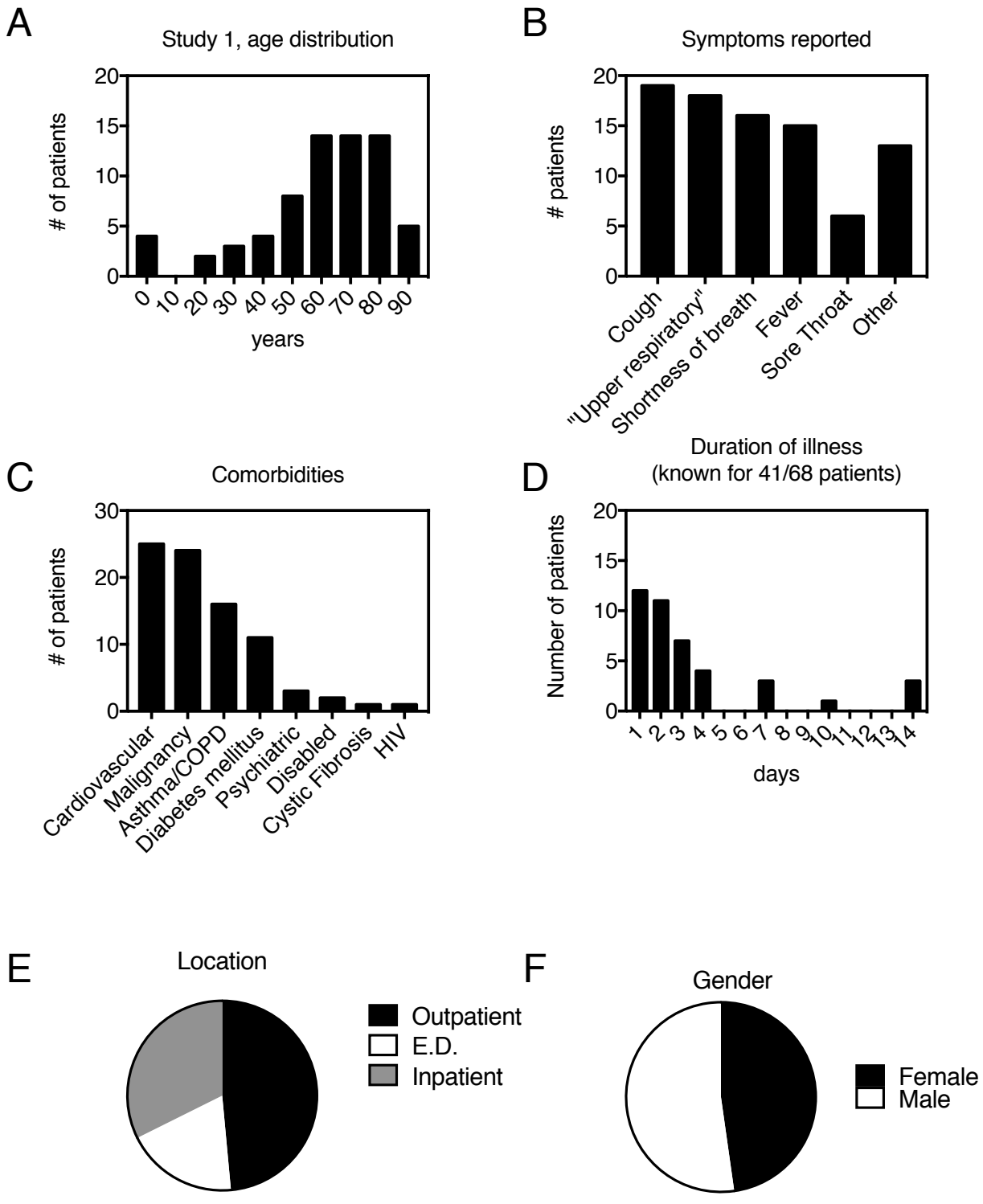
36	ENSG00000132530	XAF1	3.40555388	4.13208E-21
37	ENSG00000011422	PLAUR	3.391937461	5.47207E-64
38	ENSG00000184979	USP18	3.387705708	6.78695E-28
39	ENSG00000219891	ZSCAN12P1	3.303030038	6.82501E-31
40	ENSG00000100342	APOL1	3.238506383	2.62835E-36
41	ENSG00000187479	C11orf96	3.221151972	7.87187E-16
42	ENSG00000112972	HMGCS1	3.192285269	1.93618E-92
43	ENSG00000225886		3.117579963	1.76263E-13
44	ENSG00000167772	ANGPTL4	3.053803007	1.05491E-48
45	ENSG00000130775	THEMIS2	3.045362221	2.97613E-40
46	ENSG00000171658		3.038243171	1.9582E-37
47	ENSG00000138755	CXCL9	2.946997696	6.69733E-12
48	ENSG00000128335	APOL2	2.941400567	1.17379E-38
49	ENSG00000181381	DDX60L	2.936461875	3.03477E-32
50	ENSG00000105939	ZC3HAV1	2.934710141	8.96635E-76

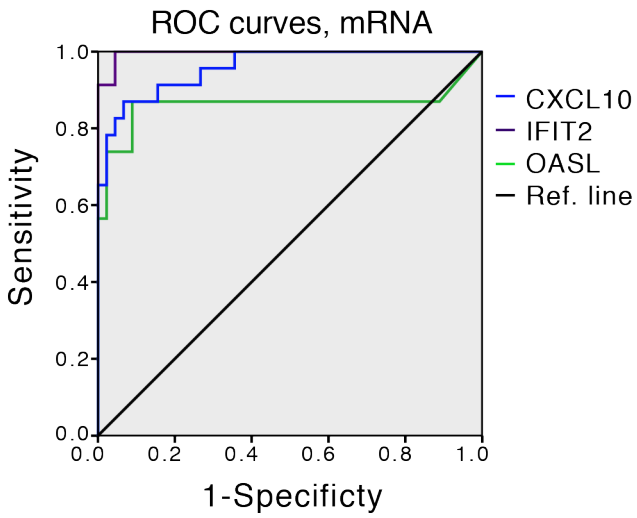
Table S2: Patients with evidence of co-infection or non-viral infection, study #1

Virus detected	Host mRNA signature of viral infection (Fig 2)	Organism(s) detected or clinical/radiological evidence of non-viral respiratory infection
YES (CoV)	YES	COPD, fever, infected bullae on CXR. Sputum culture positive for *Pseudomonas aeruginosa.*
NO	NO	Neutropenia and fever, new bilateral infiltrates on CXR. Sputum culture positive for MRSA.
NO	NO	Left basilar infiltrate on CXR. Sepsis and respiratory failure. No sputum obtained.
NO	NO	COPD, RUL infiltrate on CXR. No sputum obtained.
NO	NO	Lung transplant recipient, increased cough. Sputum culture positive for Aspergillus. BAL cytology revealed *Pneumocystis jirovecii.*
NO	NO	Left lower lobe infiltrate on CXR. History consistent with aspiration. No sputum obtained.
NO	NO	Cystic fibrosis, increased SOB. Sputum culture positive for *Pseudomonas aeruginosa.*
NO	NO	Disabled elderly patient, basilar infiltrate on CXR, presumed aspiration pneumonia. No sputum obtained.

CoV, coronavirus
COPD, chronic obstructive pulmonary disease
CXR, chest x-ray
MRSA, methicillin resistant *Staphylococcus aureus*
BAL, bronchoalveolar lavage
SOB, shortness of breath

Fig S1. Patient characteristics, mRNA biomarker study of 68 nasopharyngeal swabs (study 1)

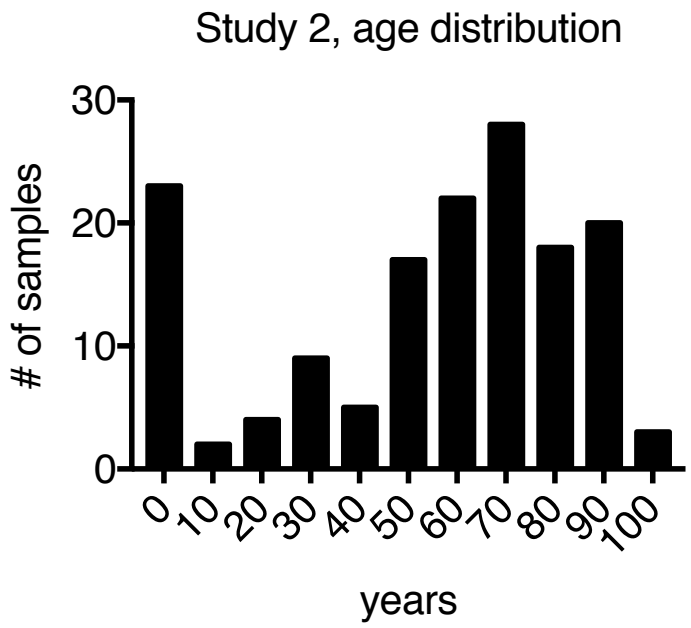




Test Result Variable(s)	Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
				Lower Bound	Upper Bound
IFIT2	.996	.004	.000	.988	1.000
OASL	.861	.066	.000	.732	.991
CXCL10	.958	.022	.000	.915	1.000

Fig S2. ROC curves showing predictive value of individual ISG mRNA levels for detection of a respiratory virus in 68 NP swabs (study 1; see Fig 1). Relationship between mRNA level and presence of virus was calculated using IBM SPSS statistics. Table shows AUC with 95% confidence interval for each mRNA biomarker.

Fig S3. Patient age distribution, 151 NP swabs, study 2.



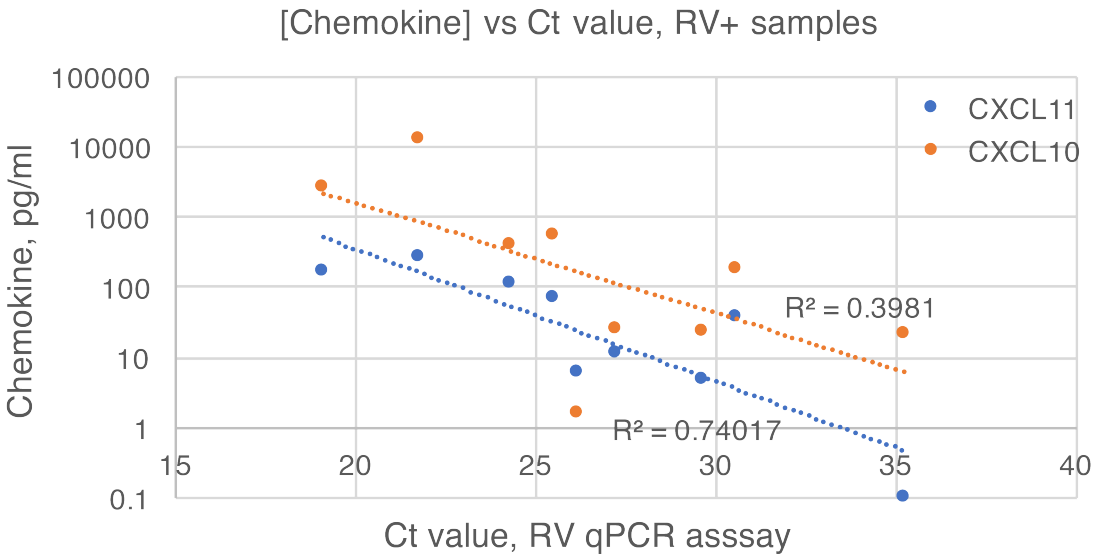


Fig S4. Relationship between concentration of CXCL10 or CXCL11 and Ct value at which RT-qPCR for rhinovirus became positive (see Fig 4). X-axis shows chemokine concentration and y-axis shown cycle at which RT-qPCR became positive for the 9 RV-positive samples in study 2 in which no other virus was detected. Exponential curve fit shows correlation between low Ct value (high level of virus) and high chemokine concentration. Calculations performed using Microsoft Excel.

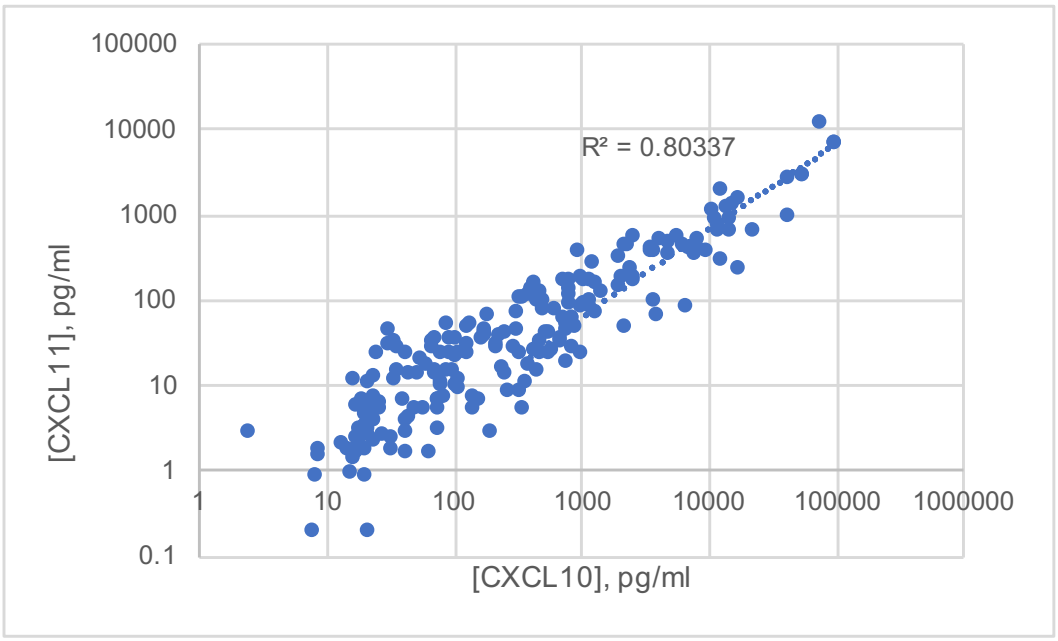
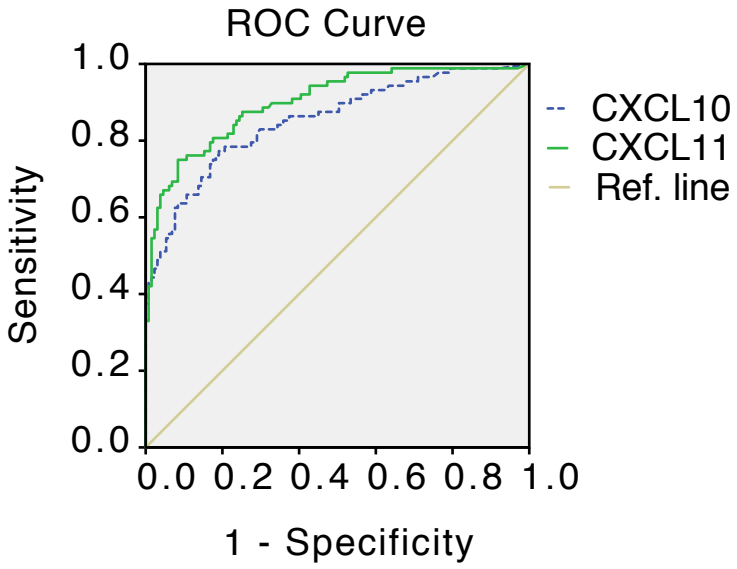


Fig S5. Correlation between [CXCL11] and [CXCL10], 219 NP swabs. Correlation coefficient for linear curve fit was calculated using Microsoft Excel. Axes show chemokine concentration in pg/ml; each dot represents one NP sample.



CXCL10 AUC=0.853 (95% C.I,. 0.800-0.906)
CXCL11 AUC=0.901 (95% C.I., 0.859-0.943)

Fig S6. ROC curves showing correlation between [CXCL11] or [CXCL10] (pg/ml) in NP swab transport medium and detection of respiratory virus in 219 NP swabs (study 1 + study 2; see Fig 5.) Relationship between chemokine protein level and presence of virus was calculated using SPSS statistics. Table shows AUC with 95% C.I. for each protein.