

Table S1. Leukocytes recruited by tumor derived CXCL1/2, Related to Figure 2.

Surface markers	sh RNA control	sh Cxcl1/2
F4/80 ⁺	31.8	35.6
CD4 ⁺	1.08	0.651
CD8 ⁺	0.157	0.062
CD3 ⁺ CD25 ⁺	0.0536	0.0481
CD3 ⁺ gdTCR ⁺	0.268	0.353
CD3 ⁻ CD49 ⁺	0.926	2.08
B220 ⁺	4.88	7.09

Table S2. Immunophenotyping of tumor derived granulocytic-MDSC, Related to Figure 2.

Surface markers	% positive cells
CD80	5.8
CD86	2.11
F4/80	12.3
CD117	2.94
IL4R α	1.22
VEGFR1	0.175
CD34	0.309
Sca1	24.7

Table S3. CXCL1-associated genes in primary breast cancers, Related to Figure 3.

No.	Probe	Gene symbol	Gene title	MeanCXCL1 Correlation	Protein type
1	204470_at	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)	1	Chemokine
2	209774_x_at	CXCL2	chemokine (C-X-C motif) ligand 2	0.58420139	Chemokine
3	205476_at	CCL20	chemokine (C-C motif) ligand 20	0.507142691	Chemokine
4	214974_x_at	CXCL5	chemokine (C-X-C motif) ligand 5	0.503264274	Chemokine
5	207850_at	CXCL3	chemokine (C-X-C motif) ligand 3	0.442087948	Chemokine
6	202917_s_at	S100A8	S100 calcium binding protein A8	0.436591522	Chemokine
7	219454_at	EGFL6	EGF-like-domain, multiple 6	0.430470932	Growth factor
8	203535_at	S100A9	S100 calcium binding protein A9	0.421452025	Chemokine
9	214370_at	S100A8	S100 calcium binding protein A8	0.416780713	Chemokine
10	201984_s_at	EGFR	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	0.414932963	Receptor
11	216598_s_at	CCL2	chemokine (C-C motif) ligand 2	0.406927087	Chemokine
12	32128_at	CCL18	chemokine (C-C motif) ligand 18 (pulmonary and activation-regulated)	0.404640555	Chemokine
13	206336_at	CXCL6	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)	0.398592045	Chemokine
14	209924_at	CCL18	chemokine (C-C	0.397682961	Chemokine

			motif) ligand 18 (pulmonary and activation- regulated)		
15	204259_at	MMP7	matrix metallopeptidase 7 (matrilysin, uterine)	0.392437116	Enzyme
16	204475_at	MMP1	matrix metallopeptidase 1 (interstitial collagenase)	0.387440495	Enzyme
17	211506_s_at	IL8	interleukin 8	0.379937059	Chemokine
18	201983_s_at	EGFR	epidermal growth factor receptor (erythroblastic leukemia viral (v- erb-b) oncogene homolog, avian)	0.376102229	Growth factor receptor
19	39402_at	IL1B	interleukin 1, beta	0.3687253	Cytokine
20	205207_at	IL6	interleukin 6 (interferon, beta 2)	0.367706402	Cytokine
21	209395_at	CHI3L1	chitinase 3-like 1 (cartilage glycoprotein-39)	0.363640348	Glycoprotein
22	213060_s_at	CHI3L2	chitinase 3-like 2	0.361544619	Glycoprotein
23	204304_s_at	PROM1	prominin 1	0.356858262	Glycoprotein
24	206407_s_at	CCL13	chemokine (C-C motif) ligand 13	0.352624539	Chemokine
25	204655_at	CCL5	chemokine (C-C motif) ligand 5	0.349987181	Chemokine
26	209396_s_at	CHI3L1	chitinase 3-like 1 (cartilage glycoprotein-39)	0.348925927	Glycoprotein
27	205992_s_at	IL15	interleukin 15	0.343998585	Cytokine
28	204533_at	CXCL10	chemokine (C-X- C motif) ligand 10	0.342768882	Cytokine
29	218995_s_at	EDN1	endothelin 1	0.336944246	Peptide
30	201859_at	SRGN	serglycin	0.336477656	Proteoglycan
31	205067_at	IL1B	interleukin 1, beta	0.332933317	cytokine
32	203828_s_at	IL32	interleukin 32	0.331005112	Cytokine
33	1405_i_at	CCL5	chemokine (C-C	0.330034012	Chemokine

			motif) ligand 5		
34	202912_at	ADM	adrenomedullin	0.322009119	Preprohormone
35	213975_s_at	LYZ	lysozyme (renal amyloidosis)	0.32161241	Enzyme
36	207113_s_at	TNF	tumor necrosis factor (TNF superfamily, member 2)	0.318836447	Cytokine
37	207339_s_at	LTB	lymphotoxin beta (TNF superfamily, member 3)	0.313814703	Cytokine
38	823_at	CX3CL1	chemokine (C-X3-C motif) ligand 1	0.311766873	Chemokine
39	205290_s_at	BMP2	bone morphogenetic protein 2	0.309658146	Cytokine
40	214456_x_at	SAA1 /// SAA2	serum amyloid A1 /// serum amyloid A2	0.307759706	Apolipoprotein
41	202510_s_at	TNFAIP2	tumor necrosis factor, alpha-induced protein 2	0.307469211	TNF induced primary response gene
42	208607_s_at	SAA1 /// SAA2	serum amyloid A1 /// serum amyloid A2	0.306284948	Apolipoprotein
43	201858_s_at	SRGN	serglycin	0.304778725	Proteoglycan
44	214038_at	CCL8	chemokine (C-C motif) ligand 8	0.301369728	Chemokine

Table S4. CXCL1-Associated Genes in Breast Cancer Metastases, Related to Figure 3

No.	Probe	Gene Symbol	Gene Title	MeanCXCL1 Correlation	Protein Type
1	204470_at	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)	1	Chemokine
2	207850_at	CXCL3	chemokine (C-X-C motif) ligand 3	0.727384488	Chemokine
3	214974_x_at	CXCL5	chemokine (C-X-C motif) ligand 5	0.72156911	Chemokine
4	214456_x_at	SAA1 /// SAA2	serum amyloid A1 /// serum amyloid A2	0.692151247	Apolipoprotein
5	208607_s_at	SAA1 /// SAA2	serum amyloid A1 /// serum amyloid A2	0.62306514	Apolipoprotein
6	202859_x_at	IL8	interleukin 8	0.618285539	Chemokine
7	204304_s_at	PROM1	prominin 1	0.574115805	Glycoprotein
8	206336_at	CXCL6	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)	0.518174074	Chemokine
9	215101_s_at	CXCL5	chemokine (C-X-C motif) ligand 5	0.501422376	Chemokine
10	204259_at	MMP7	matrix metalloproteinase 7 (matrilysin, uterine)	0.479886003	Enzyme
11	209774_x_at	CXCL2	chemokine (C-X-C motif) ligand 2	0.46608999	Chemokine
12	203535_at	S100A9	S100 calcium binding protein A9	0.460754596	Chemokine
13	211506_s_at	IL8	interleukin 8	0.446340158	Chemokine
14	203687_at	CX3CL1	chemokine (C-X3-C motif) ligand 1	0.440105848	Chemokine
15	823_at	CX3CL1	chemokine (C-X3-C motif) ligand 1	0.439724863	Chemokine
16	209924_at	CCL18	chemokine (C-C motif) ligand 18 (pulmonary and activation-regulated)	0.437635648	Chemokine
17	33322_i_at	SFN	stratifin	0.436301249	DNA damage response protein
18	206407_s_at	CCL13	chemokine (C-C motif) ligand 13	0.433070003	Chemokine
19	202917_s_at	S100A8	S100 calcium binding protein A8	0.432105649	Chemokine
20	209260_at	SFN	stratifin	0.423454846	DNA damage response protein
21	205014_at	FGFBP1	fibroblast growth factor binding protein 1	0.411514624	Glycoprotein
22	204455_at	DST	dystonin	0.407415007	Cytoskeletal linker protein
23	213936_x_at	SFTPB	surfactant, pulmonary-associated protein B	0.406917077	Surfactant associated protein
24	33323_r_at	SFN	stratifin	0.406474275	DNA damage response protein
25	205476_at	CCL20	chemokine (C-C motif) ligand 20	0.396314999	Chemokine
26	214354_x_at	SFTPB	surfactant, pulmonary-associated protein B	0.393006377	Surfactant associated protein
27	32128_at	CCL18	chemokine (C-C motif) ligand 18 (pulmonary and activation-regulated)	0.392319189	Chemokine
28	1405_i_at	CCL5	chemokine (C-C motif) ligand 5	0.389002998	Chemokine
29	209396_s_at	CHI3L1	chitinase 3-like 1 (cartilage glycoprotein-39)	0.381922747	Glycoprotein
30	218995_s_at	EDN1	endothelin 1	0.380452512	Vasoconstrictor peptide

31	205266_at	LIF	leukemia inhibitory factor (cholinergic differentiation factor)	0.379145451	Cytokine
32	201983_s_at	EGFR	epidermal growth factor receptor	0.377765594	Receptor
33	201984_s_at	EGFR	epidermal growth factor receptor	0.37549647	Receptor
34	209395_at	CHI3L1	chitinase 3-like 1 (cartilage glycoprotein-39)	0.367313688	Glycoprotein
35	202018_s_at	LTF	lactotransferrin	0.363344816	Glycoprotein
36	209810_at	SFTPB	surfactant, pulmonary-associated protein B	0.362288432	Surfactant associated protein
37	204153_s_at	MFNG	MFNG O-fucosylpeptide 3-beta-N-acetylglucosaminyltransferase	0.360062212	Glycoprotein
38	204655_at	CCL5	chemokine (C-C motif) ligand 5	0.355893728	Chemokine
39	214461_at	LBP	lipopolysaccharide binding protein	0.350076877	Acute phase protein
40	206560_s_at	MIA	melanoma inhibitory activity	0.349846506	Growth factor
41	37004_at	SFTPB	surfactant, pulmonary-associated protein B	0.349391767	Surfactant associated protein
42	203828_s_at	IL32	interleukin 32	0.345291084	Cytokine
43	212662_at	PVR	poliovirus receptor	0.339601184	Ig like family of proteins
44	205654_at	C4BPA	complement component 4 binding protein, alpha	0.335596848	Complement activation protein
45	207861_at	CCL22	chemokine (C-C motif) ligand 22	0.332404796	Chemokine
46	207816_at	LALBA	lactalbumin, alpha-	0.330824407	Protein in lactose synthesis
47	205016_at	TGFA	transforming growth factor, alpha	0.31799294	Growth factor
48	214370_at	S100A8	S100 calcium binding protein A8	0.313752555	Chemokine
49	219454_at	EGFL6	EGF-like-domain, multiple 6	0.310355128	Growth factor
50	204858_s_at	TYMP	thymidine phosphorylase	0.30100493	Enzyme

Table S5. Deidentified Clinical Information of Breast Cancer Patients Treated with Neoadjuvant Chemotherapy, Related to Figure 5

Case No.	ER Status	PR Status	HER2 Status	Grade	Chemo	Pathologic Response to Chemo	Survival Status
1001	Positive	Positive	Negative	3	AC-T	PR	NED
1002	Negative	Negative	Negative	3	EC-T	PR	AWD
1003	Positive	Positive	Negative	3	AC-T	MR	NED
1004	Negative	Negative	Negative	3	AC-T	CR	NED
1005	Positive	Positive	Negative	3	AC-T	MR	AWD
1006	Negative	Negative	Negative	3	AC-T	PR	NED
1007	Negative	Negative	Positive	3	AC-TH	CR	NED
1008	Positive	Positive	Negative	3	AC-T	MR	NED
1009	Positive	Positive	Negative	2	AC-T	MR	NED
1010	Negative	Negative	Negative	2	AC-T	PR	NED
1011	Positive	Positive	Negative	3	AC-T	PR	NED
1012	Positive	Positive	Negative	2	AC-T	PR	NED
1013	Positive	Positive	Negative	3	AC-T	MR	NED
1014	Negative	Negative	Negative	3	AC-T	PR	NED
1015	Positive	Negative	Positive	3	AC-TH	MR	NED
1016	Positive	Positive	Negative	1	AC-T	MR	NED
1017	Positive	Negative	Negative	3	AC-T	PR	Died - other
1018	Positive	Positive	Negative	2	AC-T*	PR	NED
1019	Negative	Negative	Positive	3	TH	CR	NED
1020	Negative	Negative	Positive	3	AC-TH	CR	NED
1021	Negative	Negative	Positive	3	AC-T	PR	Died - of disease
1022	Positive	Positive	Negative	3	AC-T	MR	NED
1023	Positive	Negative	Positive	3	AC-T	MR	NED
1024	Positive	Positive	Negative	3	AC-T	PR	NED
1025	Negative	Neg	Positive	3	EC-T	PR	AWD
1026	Positive	Negative	Negative	3	AC-T	CR	NED
1027	Positive	Positive	Positive	3	AC-TH	PR	NED
1028	Positive	Positive	Negative	3	AC-T	PR	NED
1029	Positive	Positive	Negative	3	AC-T	PR	NED
1031	Negative	Negative	Negative	3	Carboplatin, T,B,AC+B	PR	NED
1032	Positive	Positive	Positive	3	AC-TH	CR	NED
1033	Positive	Positive	Negative	3	AC-T	PR	NED

1034	Positive	Positive	Negative	2	EC-T	PR	NED
1035	Positive	Negative	Negative	3	AC-T	PR	NED
1036	Positive	Positive	Negative	Unkno wn	EC-T	PR	NED
1037	Positive	Positive	Negative	3	D+C	PR	NED
1038	Positive	Negative	Negative	3	T+L	PR	NED
1039	Negative	Negative	Negative	3	AC-T	CR	NED
1040	Positive	Positive	Positive	3	AC-TH	CR	NED
1041	Positive	Positive	Negative	3	AC-T	CR	NED