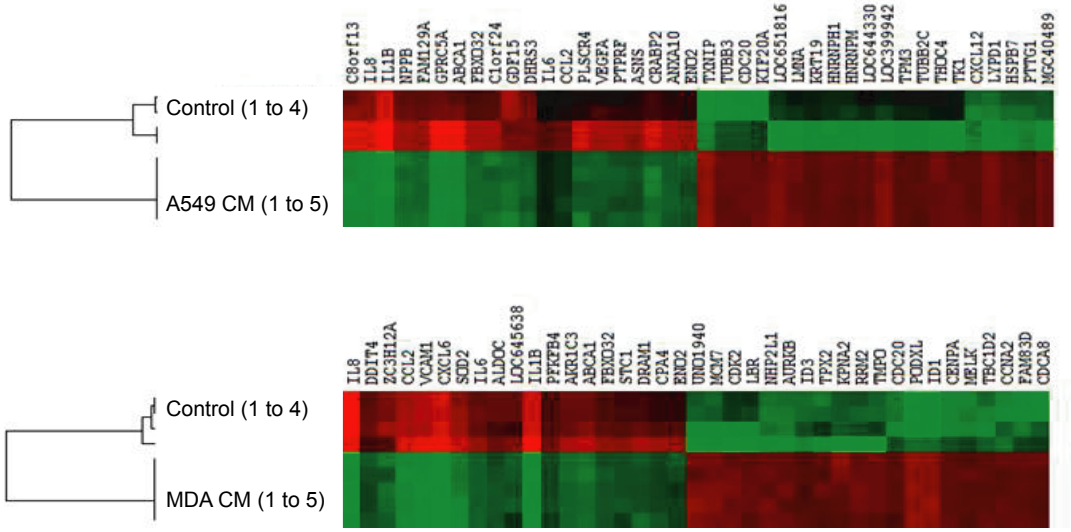
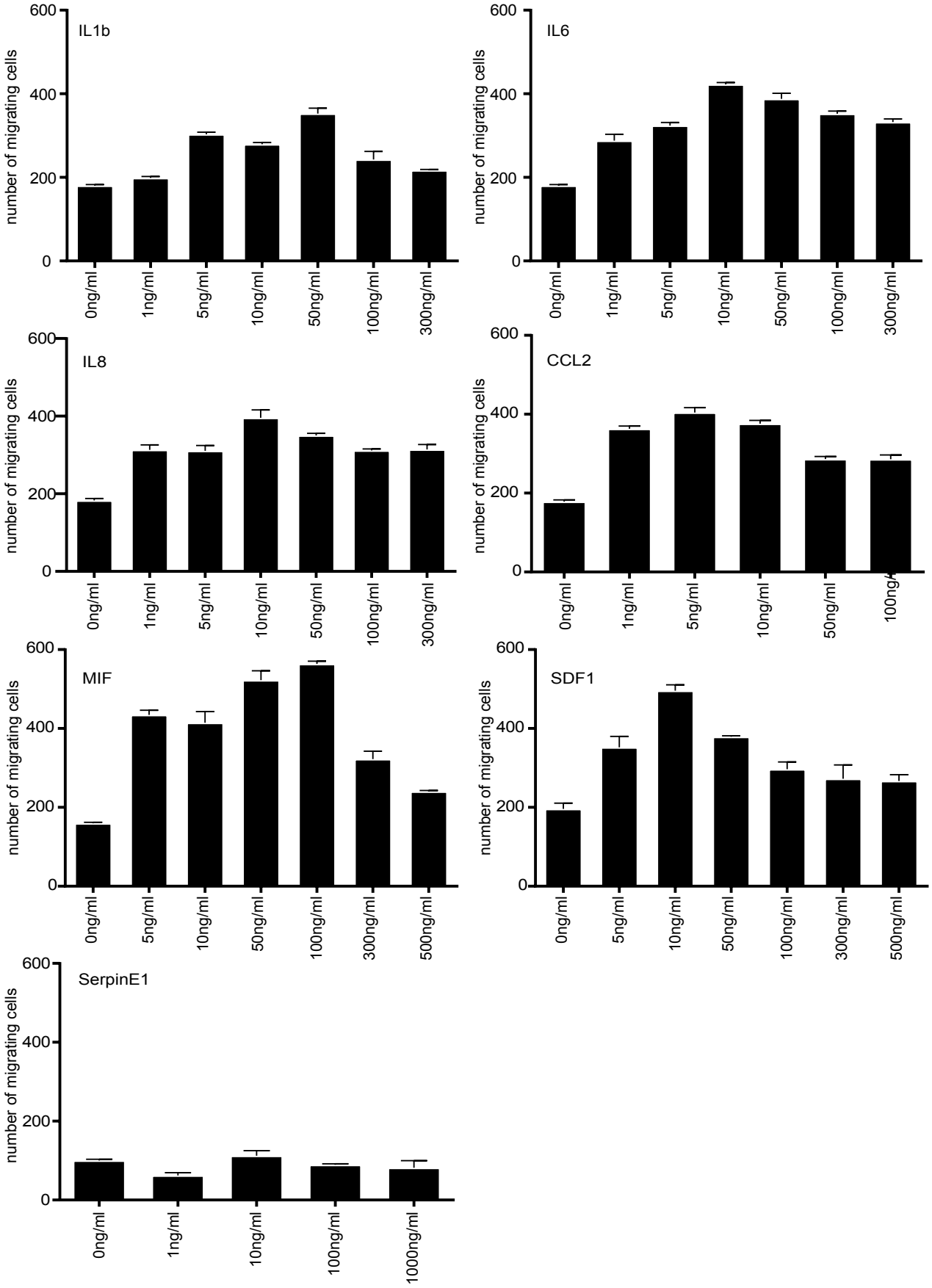
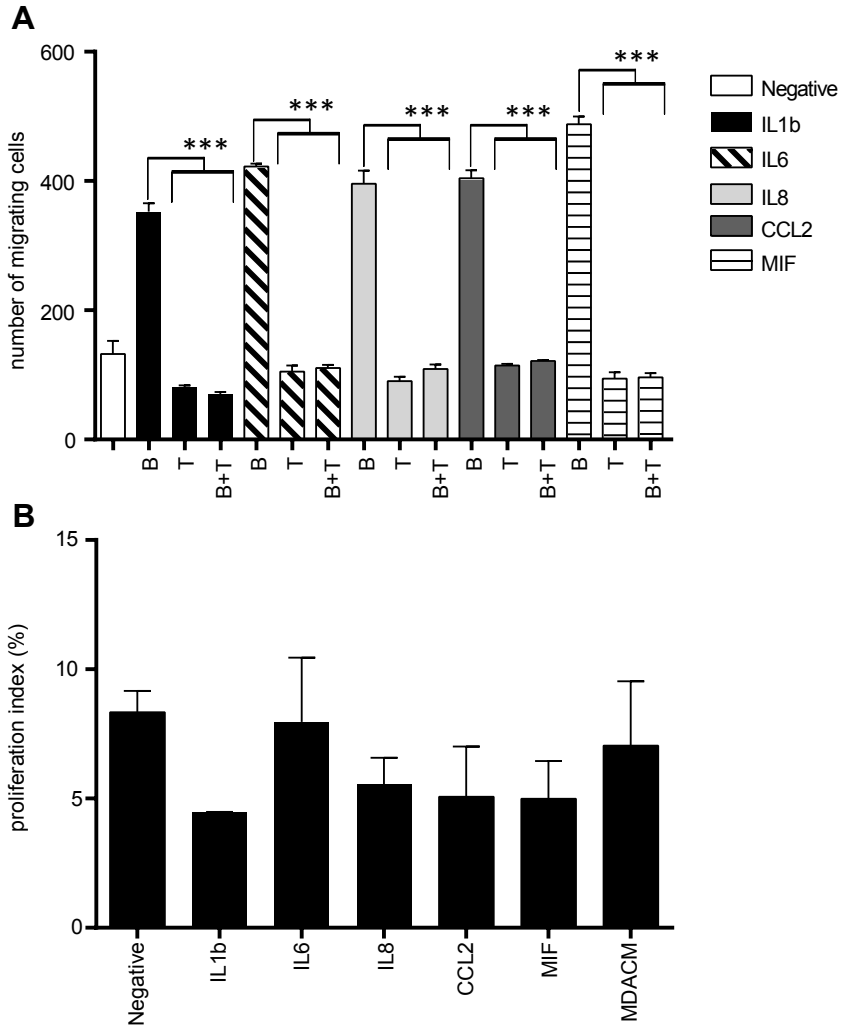


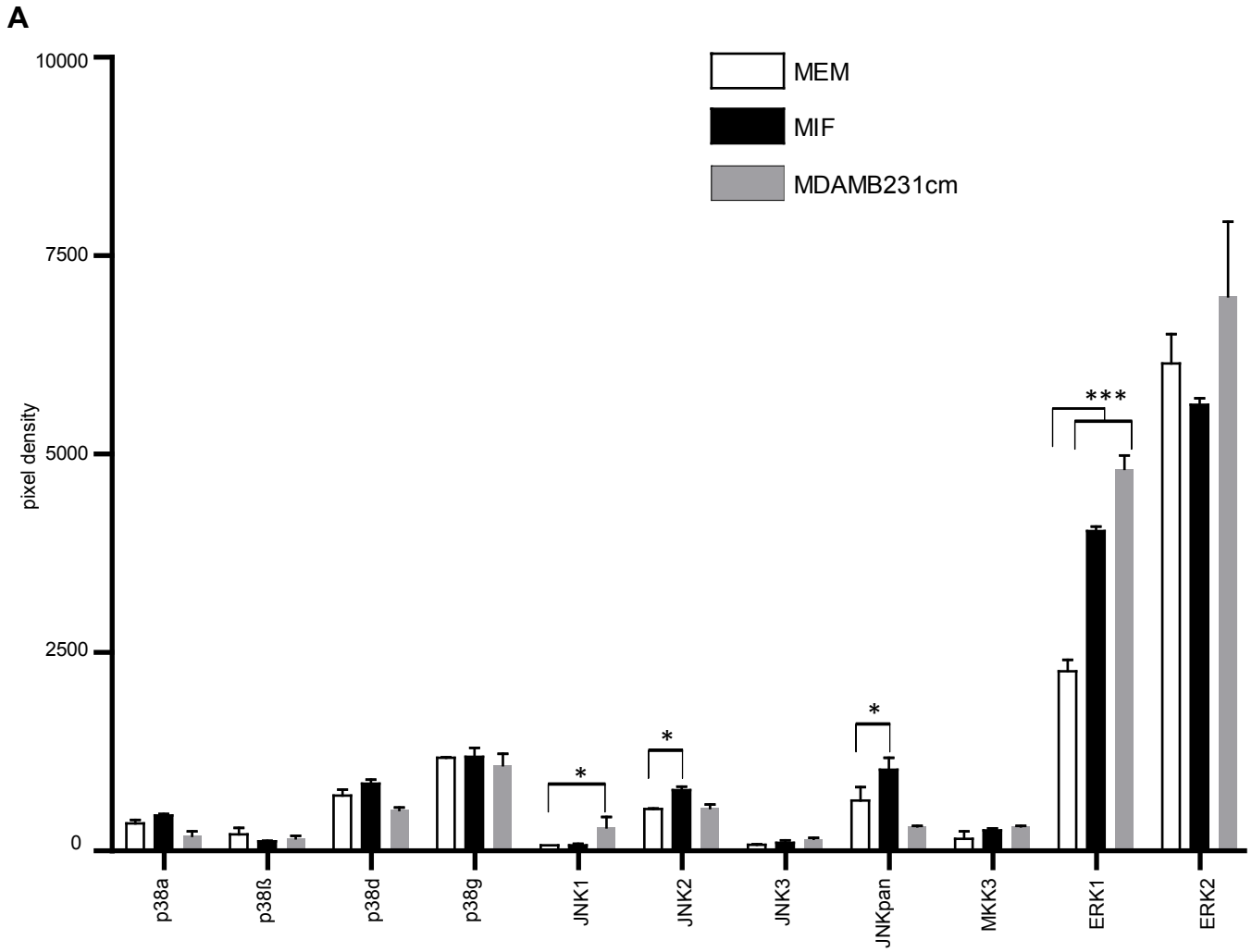
Supplementary Figure S1 – Microarray analysis of MSCs treated with A549CM or MDAMB231CM- RNA was extracted from MSCs treated either with A549 CM or MDAMB231 CM or untreated (control) for 24 h. Microarray results are shown as gene expression heat maps of the top 20 upregulated and downregulated MSC genes in the presence of A549 CM (n=5, top panel) or MDAMB231 CM (n=5, bottom panel) compared to control cells in unconditioned medium (n=4).

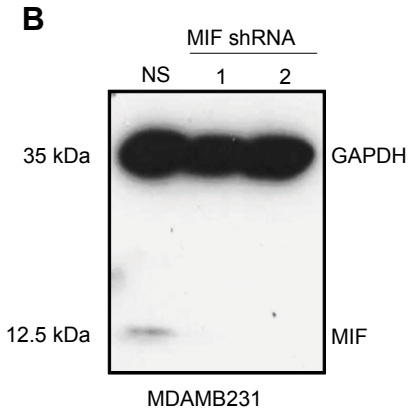


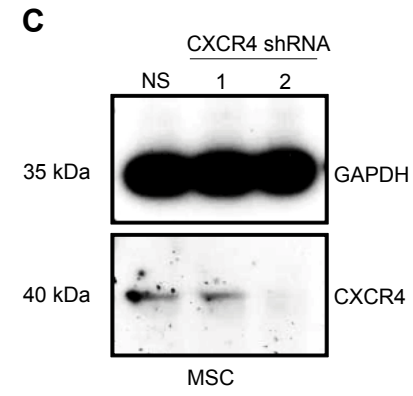
Supplementary Figure S2 – Dose response curves for tested cytokines. Doses ranging from 1 to 1000ng/ml were tested for IL1b, IL6, IL8, CCL2, MIF, SDF1 and serpinE1, as described in the corresponding graphs.



Supplementary Figure S3 – Chemokinesis, and proliferation assays. A) Chemokinesis assay: a transwell migration assay was performed to validate a chemotactic effect of IL1b, IL6, IL8, CCL2 and MIF. If migration is due to chemokinesis, the migration occurs in the absence of a gradient, such as when the cytokine is added in the top chamber (where MSCs are seeded) or when added in both top and bottom chambers. B: the corresponding cytokine was added to the bottom of the transwell, T: the corresponding cytokine was added to the top of the transwell, B+T: the corresponding cytokine was added to both bottom and top of the transwell). n=3 ***$p<0.005$. B) Proliferation assay: BrdU staining was performed (counterstaining with DAPI) on MSCs in presence of the different cytokines tested. BrdU positive cells and the total number of cells were counted and expressed as a ratio, n=3.







Supplementary Figure S4 – Phosphoarrays – A: Quantification of MAPK phosphoarray in the presence of MEM (negative control), MIF (100ng/ml) and MDAMB231 CM for 5 min. n=3, *p<0.05, ***p<0.005. **Validation of MIF and CXCR4 knock downs.** B) Western blots of MIF from MDAMB231 cells transduced with non silencing or MIF shRNAs. NS: non silencing shRNA , 1: MIF shRNA clone 1, 2: MIF shRNA clone 2. GAPDH loading control. C) Western blots for CXCR4 of MSCs cells transduced with non silencing or CXCR4 shRNAs. NS: non silencing shRNA, 1: CXCR4 shRNA clone 1, 2: CXCR4 shRNA clone 2. CXCR4 shRNA clone 2 was used for further experiments. GAPDH loading control.