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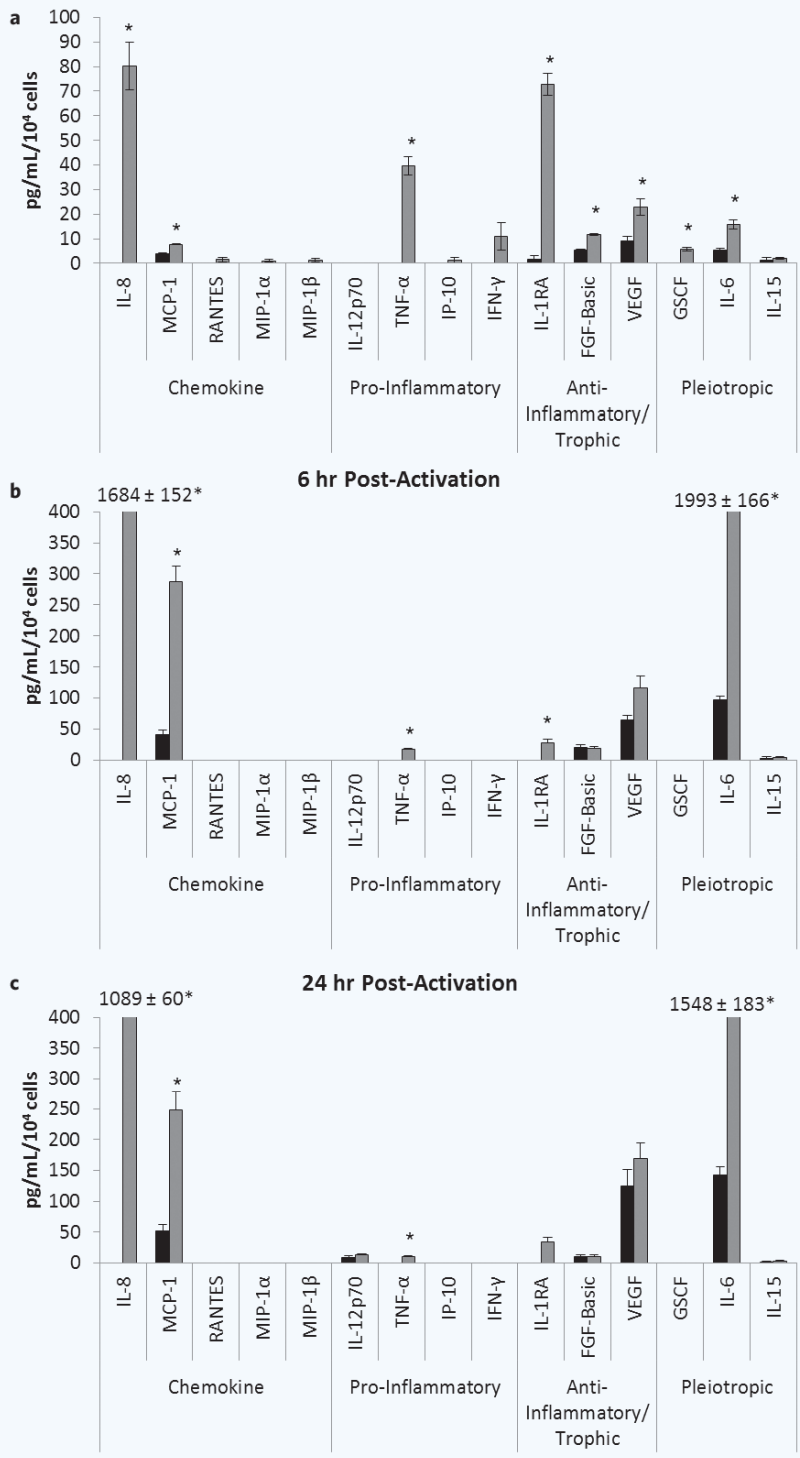
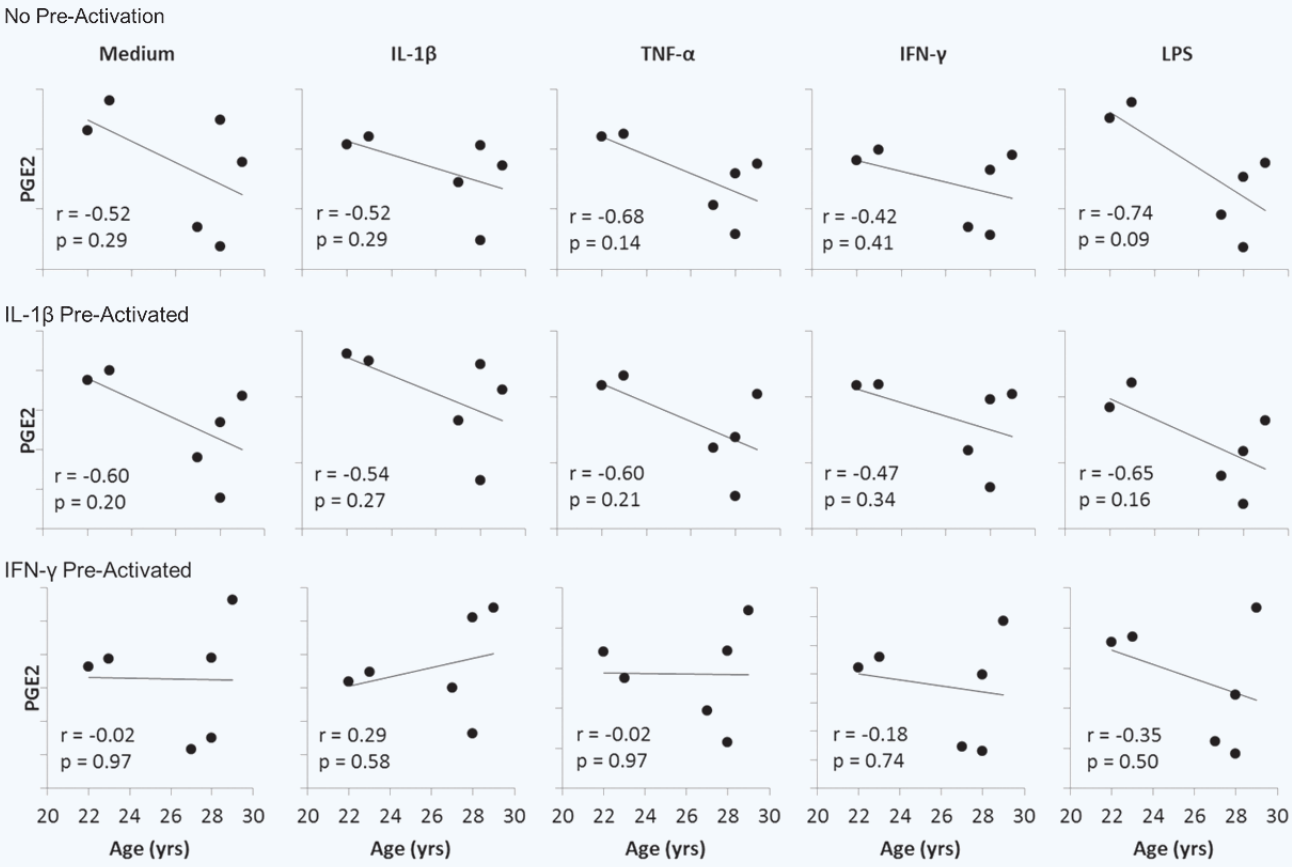
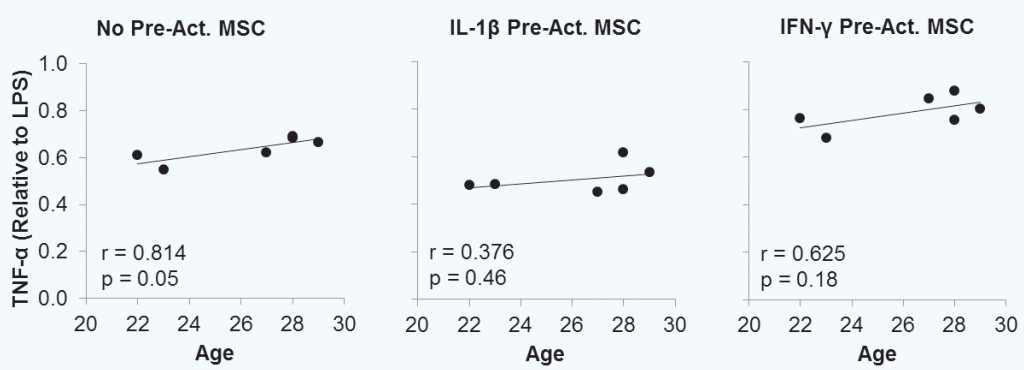
SUPPLEMENTARY INFORMATION



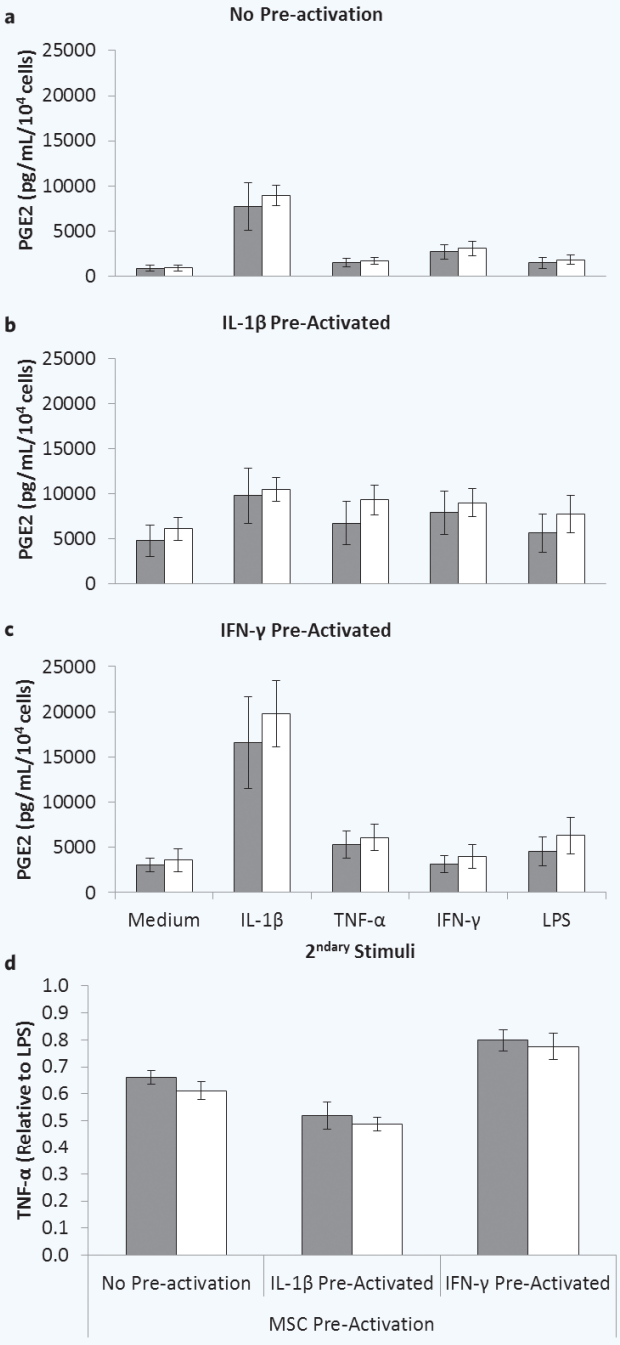
Supplementary Figure 1 MSC secretome changes at the end of the activation period and over time post-activation. (**a**) MSCs were cultured without (black bars) or with IL-1β (grey bars) for 1 hour. Out of 27 secreted factors quantified, 15 were detected in supernatants using a bead-based multiplex immunoassay. (**b**) Pre-activated cell culture supernatants were replaced by fresh medium for (**b**) 6 or (**c**) 24 hours. Secreted factors in supernatants were quantified using a bead-based multiplex immunoassay. Data are the mean ± SEM for secreted level normalized to cell number for $n = 3$ replicates. *$p < 0.05$ compared to medium by Student's t test.



Supplementary Figure 2 Correlation of donor age and PGE2 secretion in response to pro-inflammatory stimuli after pre-activation. PGE2 levels (black circles) were plotted against the age of the corresponding donor with a linear regression line (black line). Pearson's correlation coefficients (*r*) were calculated and their statistical significances (*p*) were determined using Student's *t* test. Each data point represents the average PGE2 secretion for a single donor.



Supplementary Figure 3 Correlation of donor age and relative TNF-α level in MSC/macrophage co-cultures. Relative TNF-α levels (black circles) were plotted against the age of the corresponding donor with a linear regression line (black line). Pearson's correlation coefficients (*r*) were calculated and their statistical significances (*p*) were determined using Student's *t* test. Each data point represents the average TNF-α level for a single donor.



Supplementary Figure 4 Comparison of PGE2 secretion in response to pro-inflammatory stimuli between male and female MSC donors (grey bars and white bars, respectively) after (**a**) no pre-activation, (**b**) IL-1β pre-activation, or (**c**) IFN-γ pre-activation. (**d**) Comparison of relative TNF-α level in MSC/macrophage co-cultures between male and female MSC donors (grey bars and white bars, respectively). Data are the mean ± SEM for PGE2 normalized to cell number or relative TNF-α level for equal numbers of male and female biological replicates (n = 3 each).

Supplementary Table 1 Power analysis for PGE2 secretion in response to secondary stimuli after pre-activation with IL-1β for 6 biological replicates (MSC donors).

Effect	Mean of difference	St. dev. of difference	Effect size	Power (1-β)
TNF-α-induced PGE2 levels	6471	2880	2.247	0.9903
IFN-γ-induced PGE2 levels	5615	2003	2.803	0.9996
LPS-induced PGE2 levels	5071	2546	1.992	0.9695

Supplementary Table 2 Power analysis for the relative TNF-α level in macrophage co-cultures with MSCs for 6 biological replicates (MSC donors).

Effect	Mean 1	Mean 2	St. dev. 1	St. dev. 2	Correlation	Effect size	Power (1-β)
No pre-activation vs. IL-1β pre-activation	0.636	0.504	0.054	0.063	0.435	2.107	0.9814

Supplementary Table 3 Power analysis for the PGE2 level in macrophage co-cultures with MSCs for 6 biological replicates (MSC donors).

Effect	Mean of difference	St. dev. of difference	Effect size	Power (1-β)
No pre-activation vs. IL-1β pre-activation	38780	28440	1.364	0.7606