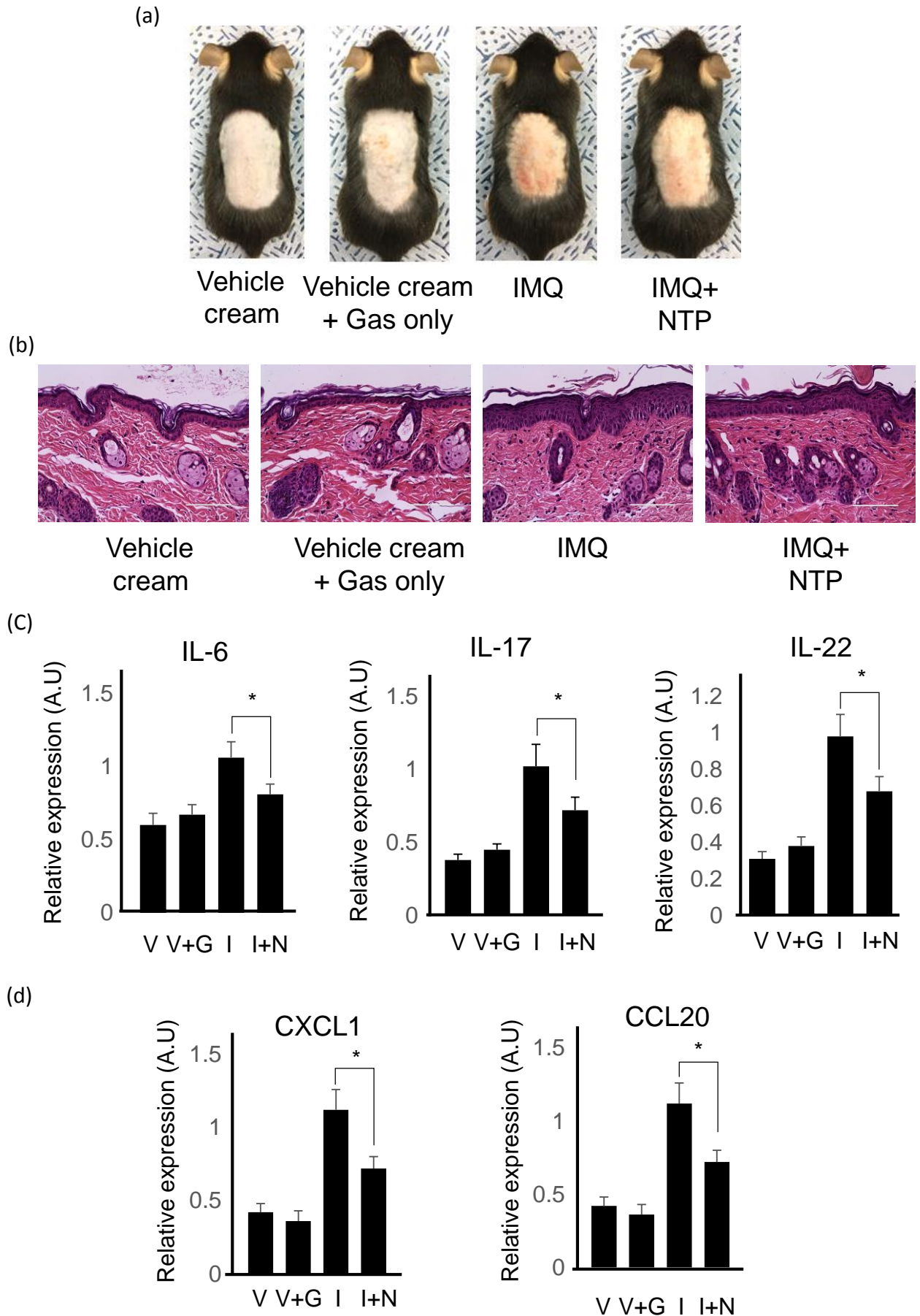


Non-thermal atmospheric plasma ameliorates imiquimod-induced psoriasis-like skin inflammation in mice through inhibition of immune responses and up-regulation of PD-L1 expression.

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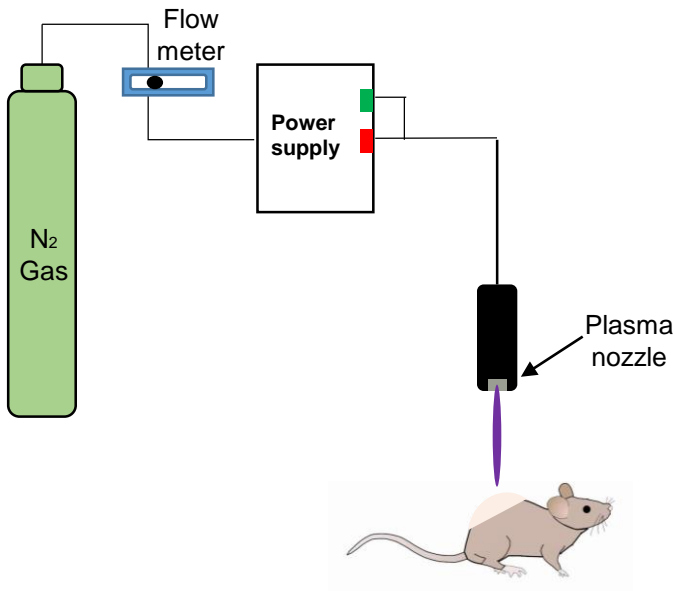
<sup>1</sup>Department of Otolaryngology, School of Medicine, Ajou University, Suwon, Republic of Korea, <sup>2</sup>Department of Molecular Science and Technology, Ajou University, Suwon, Republic of Korea



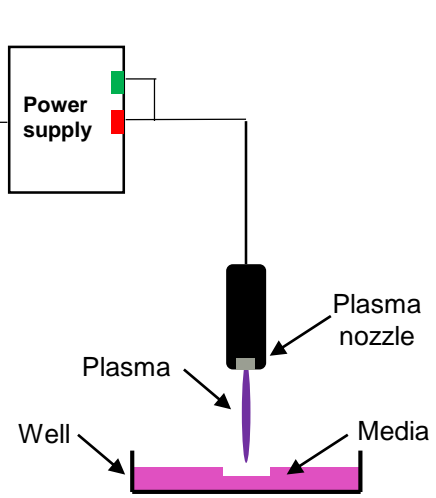
Supplementary figure 1. (a) Vehicle cream (Vaseline Lanette cream) and vehicle cream + gas only-treatment did not affect skin inflammation. (b) H&E staining (c) cytokine (d) chemokine gene expression was not effected by vehicle cream and N2 gas.

## Supplementary Figure 2

(a)

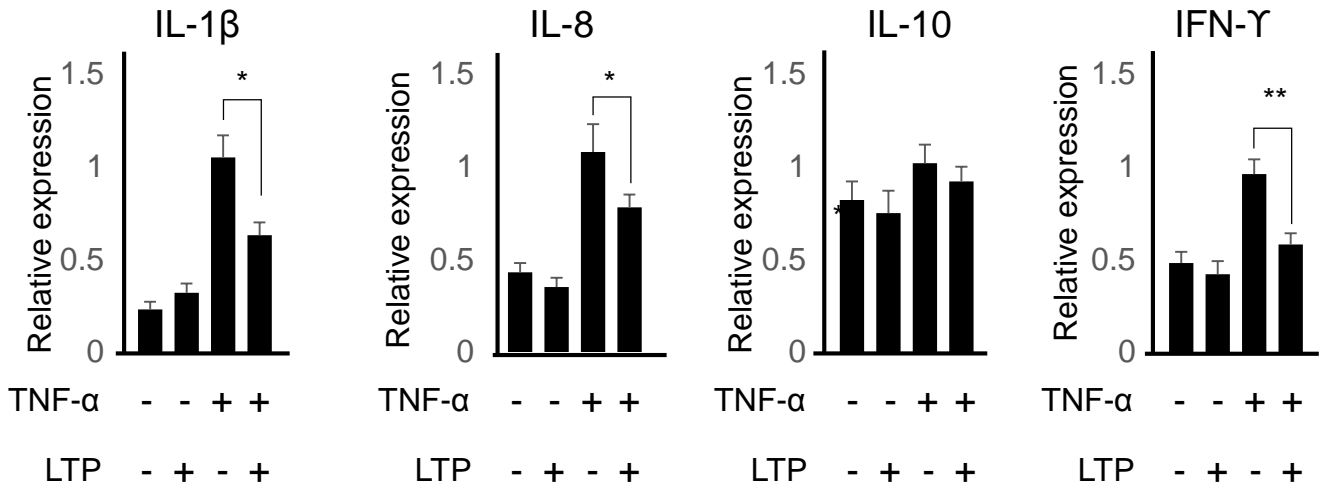


(b)



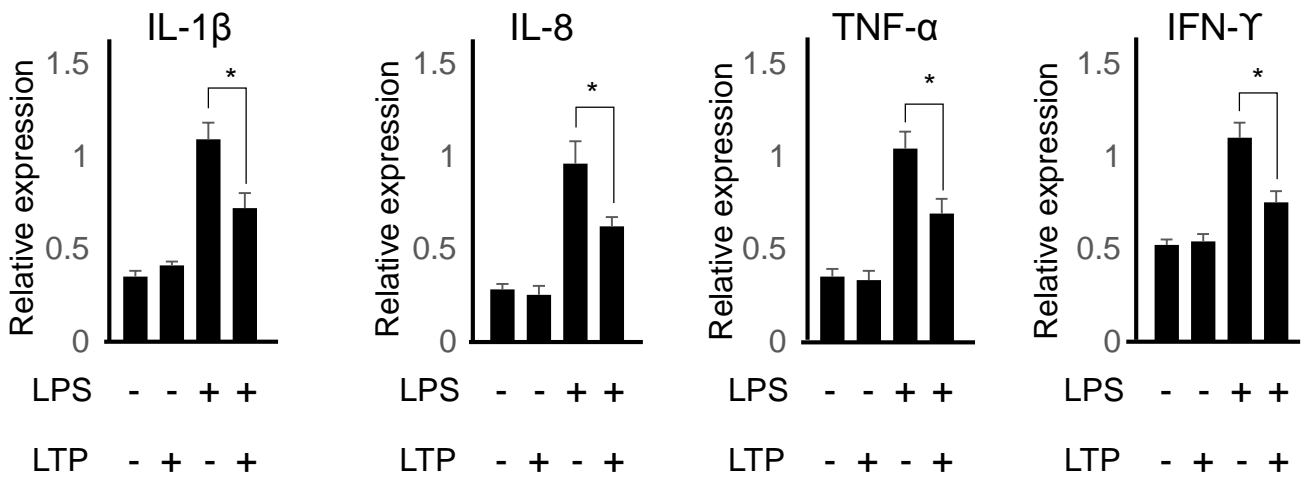
Supplementary figure 2. A schematic diagram describing treatment of mouse with the NTP producing machine (left figure) and the method of making LTP (right figure). Non-thermal plasma was treated for 30 or 60 seconds per ml and used for in the vitro experiments.

Supplementary Figure 3



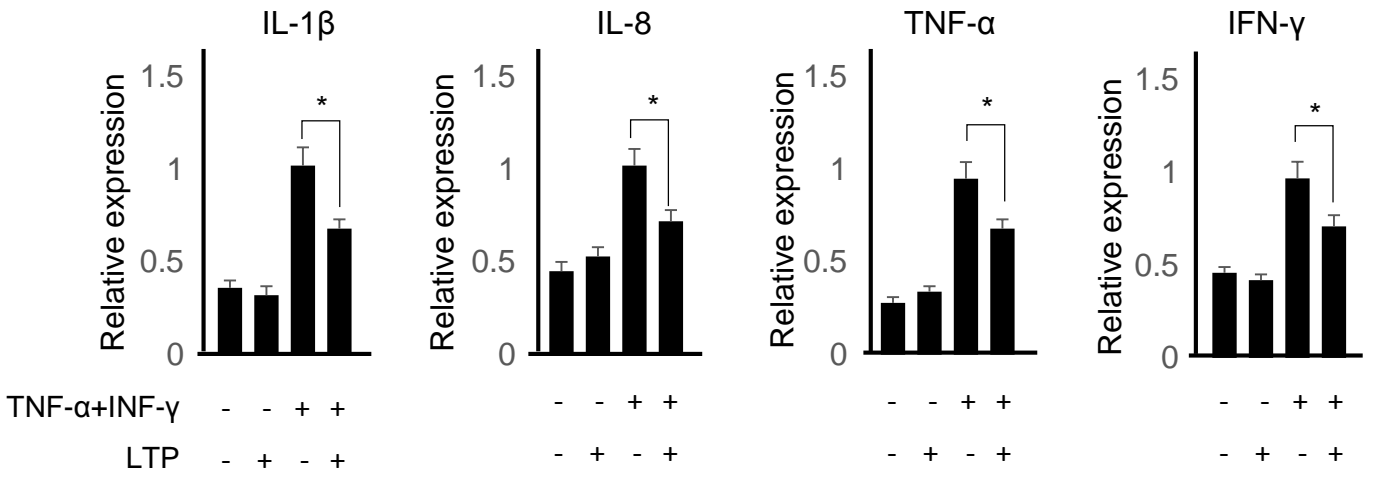
Supplementary Figure 3. LTP treatment inhibited TNF- $\alpha$ -induced proinflammatory cytokine expression in BMDC

Supplementary Figure 4



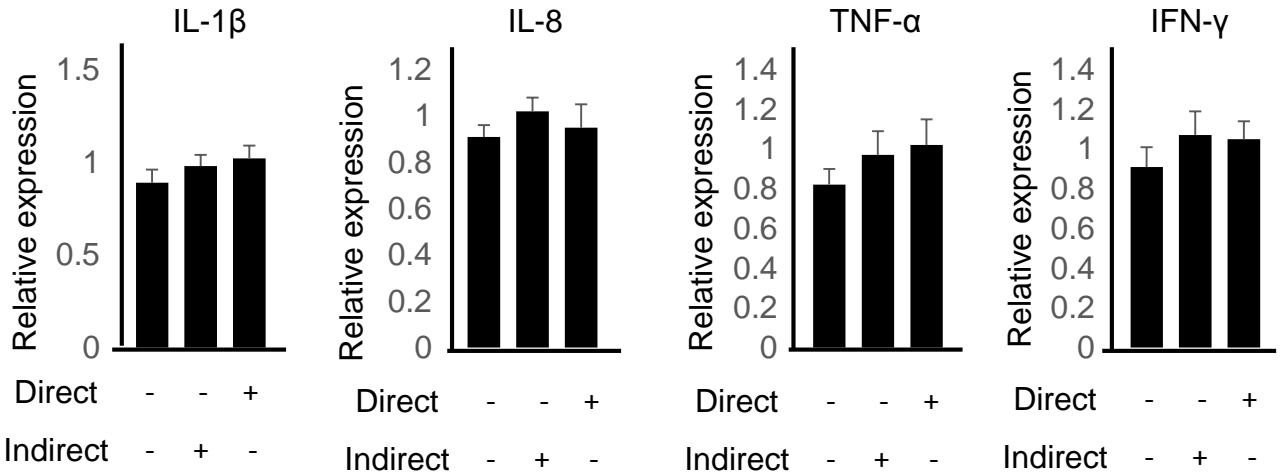
Supplementary Figure 4. LTP treatment inhibited LPS-induced proinflammatory cytokine expression in BMDC

Supplementary Figure 5



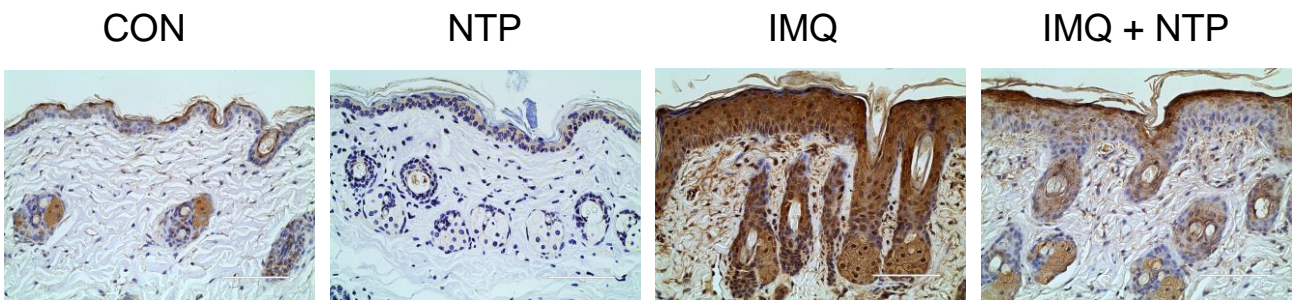
Supplementary Figure 5. LTP treatment inhibited TNF-  $\alpha$ /IFN-  $\gamma$  induced proinflammatory cytokine expression in HaCaT cells

Supplementary Figure 6



Supplementary Figure 6. Direct and indirect plasma treatment did not affect gene expression in unstimulated normal HaCaT cells

Supplementary Figure 7



Supplementary Figure 7. Treatment with NTP inhibited IMQ-induced NOX3 expression in mouse

Supplementary table 1

Primer sequences for real time PCR

hIL-1 $\beta$ : forward 5'ACAGATGAAGTGCTCCTTCCA3'

reverse 5'GTCGGAGATTCGTAGCTGGAT3'

hIL-8: forward 5'ATGACTTCCAAGCTGGCCGTGGCT3'

reverse 5'TCTCAGCCCTCTTCAAAAACCTTCT3'

hIL-10: forward 5'CATCGATTTCTTCCCTGTGAA3'

reverse 5'TCTTGGAGCTTATTAAAGGCATTC3'

hIFN- $\gamma$ : forward 5'CTAATTATTCGGTAACTGACTTGA3'

reverse 5'ACAGTTCAGCCATCACTTGGGA3'

hTGF- $\beta$ 1: forward 5'CCCAGCATCTGCAAAGCTC3'

reverse 5'GTCAATGTACAGCTGCCGCA3'