

Supporting Information

Transcutaneous delivery of mung bean-derived nanoparticles for amelioration of psoriasis-like skin inflammation

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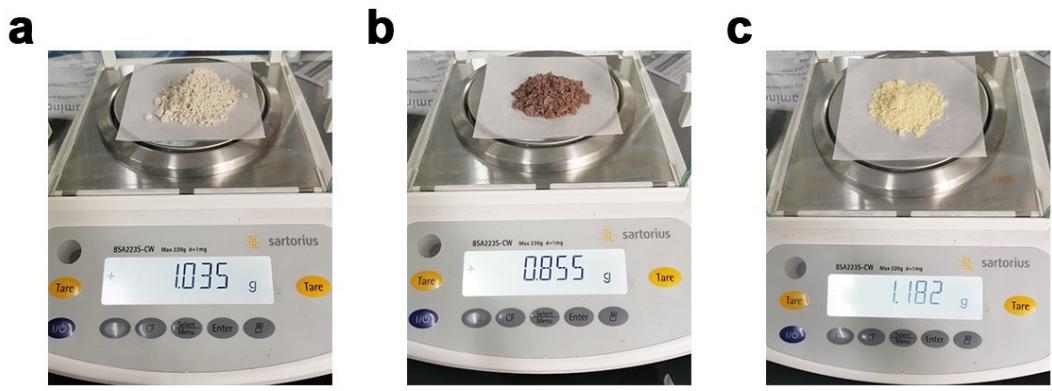


Fig. S1 a-c) Photographs of freeze-dried NPs obtained from 10 g of mung bean, black bean, and soybean, respectively.

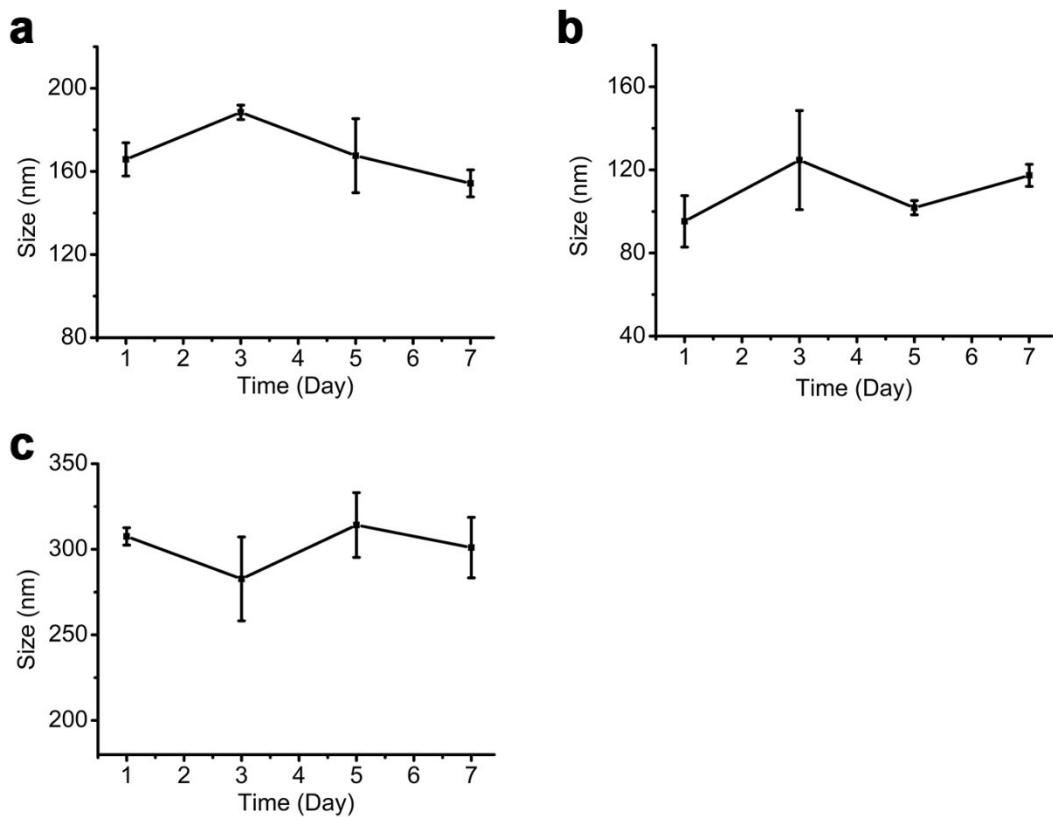


Fig. S2 Size variations of a) MBNs, b) BBNs and c) SBNs after storage in phosphate buffered saline (PBS) (pH 7.4) for 7 days (n=3).

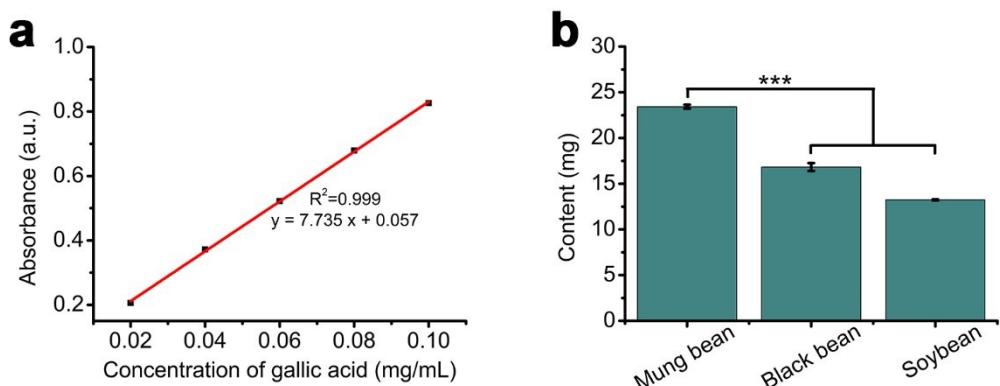


Fig. S3 a) Standard curve of polyphenols prepared by Folin-Ciocalteu method using GA as the standard reagent. b) Content of total polyphenols in 1 g of bean-derived NPs. Data are represented as means \pm SD ($n=3$; * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$).

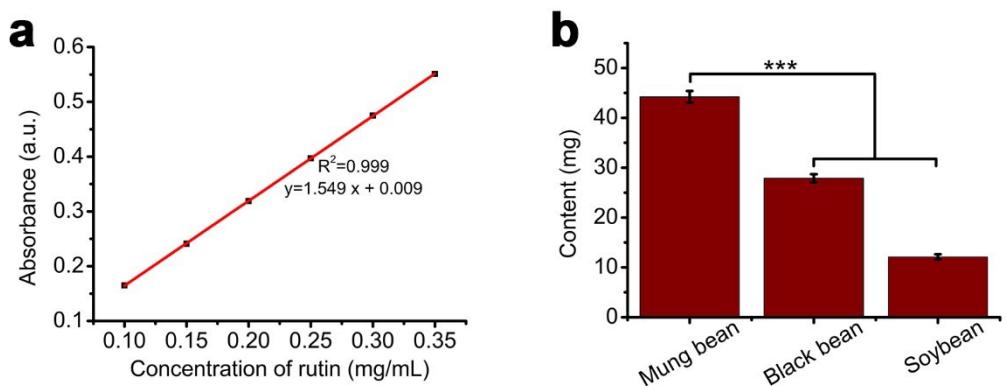


Fig. S4 a) Standard curve of flavonoids prepared by the $\text{NaNO}_2\text{-AlCl}_3\text{-NaOH}$ method using rutin as the standard reagent. b) Content of total flavonoids in 1 g of bean-derived NPs. Data are represented as means \pm SD ($n=3$; * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$).

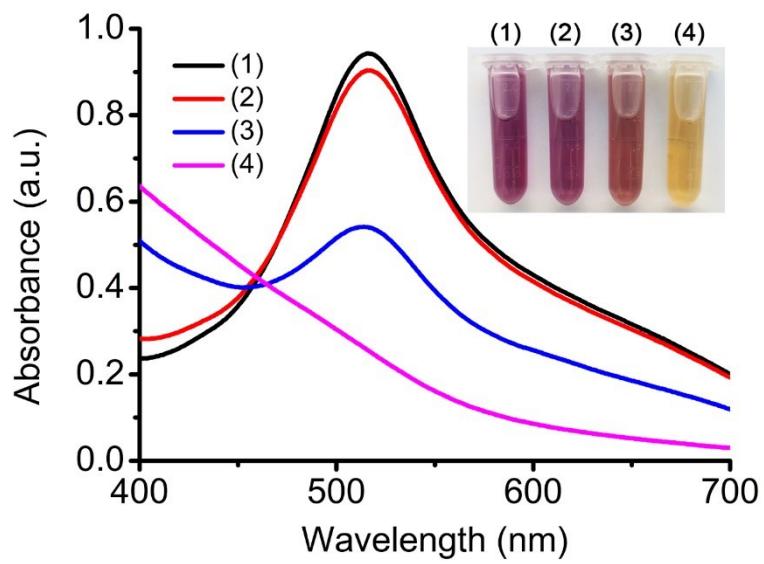


Fig. S5 UV-vis spectra of the DPPH ethanol solution incubated with NPs for 30 min. The inset shows the photographs of the final solutions of (1) DPPH, (2) DPPH + SBNs, (3) DPPH + BBNs, (4) DPPH + MBNs.

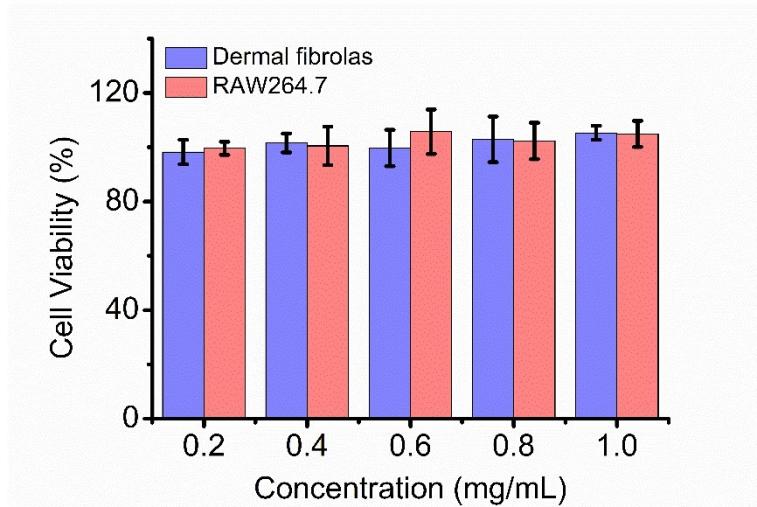


Fig. S6 Viability of dermal fibroblast and RAW264.7 cells after incubation with MBNs for 24 h (n=3).

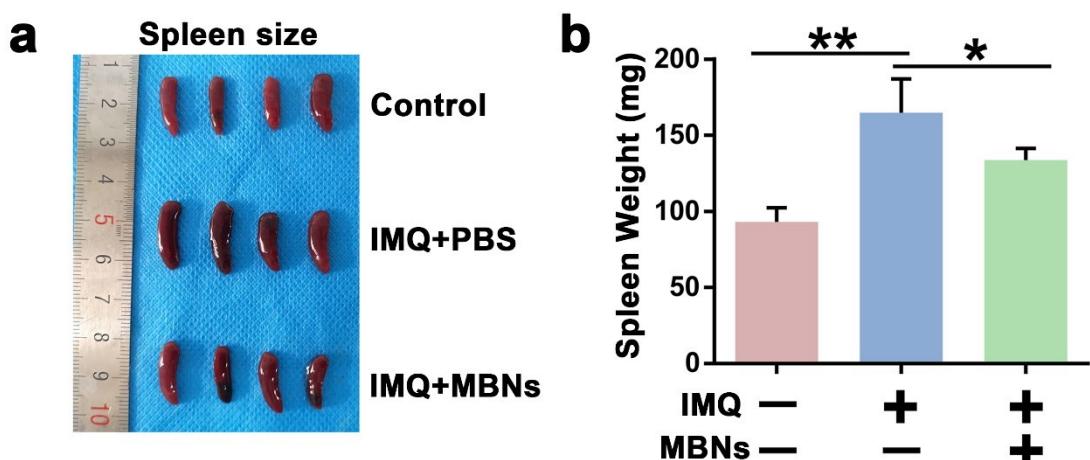


Fig. S7 a) Representative optical photograph and b) the weight of spleens of the psoriasis model mice after treatment. Data are represented as means \pm SD ($n=4$; $*P < 0.05$, $**P < 0.01$, $***P < 0.001$).

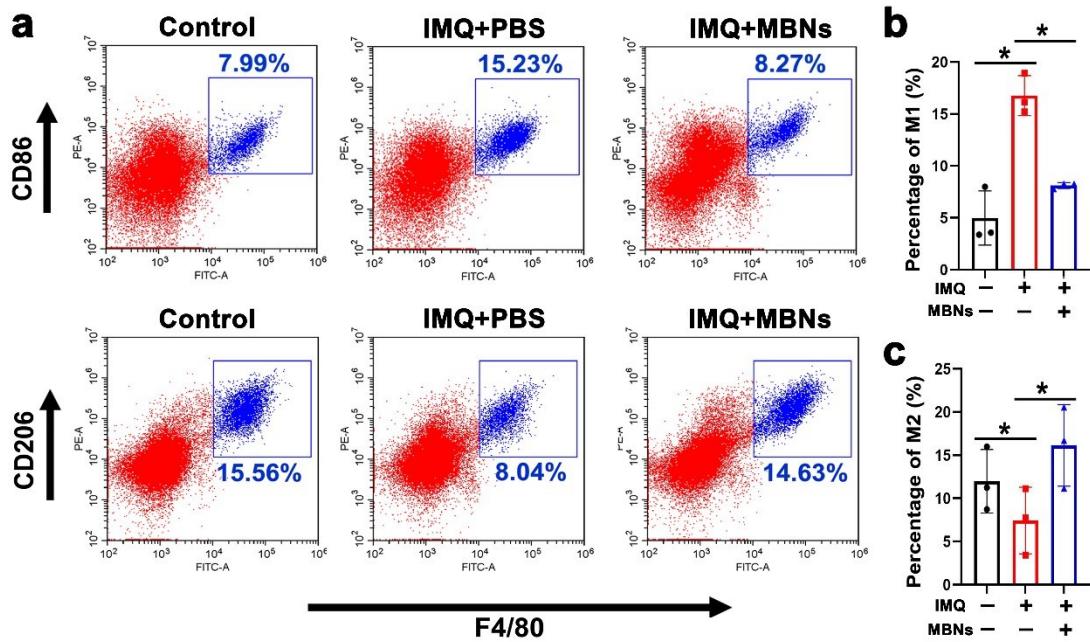


Fig. S8 a) Polarization of spleen macrophage determined by flow cytometry. b, c) The percentage of polarized macrophages in the spleens of the indicated treatment groups. Data are represented as means \pm SD ($n=3$; * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$).

Table S1 Sequence-specific primers for real-time PCR.

Gene	Primer sequences
IL-1 β	5'-AATCTCACAGCAGCACATCA-3'; 5'-AAGGTGCTCATGTCCTCATC-3'
IL-6	5'-CCTCCTACCCAATTCCAAT-3'; 5'-GCCACTCCTCTGTGACTCCAG-3'
iNOS	5'-ACAGGAGGGTAAAGCTGC-3'; 5'-TTGTCTCCAAGGGACCAGG-3'
NF- κ B2	5'-TACAAGCTGGCTGGTGGGA-3'; 5'-GTCGCGGTCTCAGGACCTT-3'
GAPDH	5'-AGAACATCATCCCTGCATCC-3'; 5'-AGTTGCTGTTGAAGTCGC-3'
COX-2	5'-AACATCTCAGACGCTCAGGAAATAG-3'; 5'-GCCGTAGTCGGTGTACTCGTAG-3'
TNF- α	5'-AGGGTCTGGGCCATAGAACT-3'; 5'-CCACCACGCTCTCTGTCTAC-3'
Ptgs2	5'-TGCACATGGTTACAAAAGCTGG-3'; 5'-TCAGGAAGCTCCTTATTCCCTT-3
Chil3	5'-CTGAATGAAGGAGCCACTGA-3'; 5'-AGCCACTGAGCCTTCAACTT-3
Retnla	5'-CCAATCCAGCTAACTATCCCTCC-3'; 5'-ACCCAGTAGCAGTCATCCCA-3
Arg1	5'-TGTCCCTAATGACAGCTCCTT-3'; 5'-GCATCCACCAAATGACACAT-3
IL-10	5'-TTGTCGCGTTGCTCCCATT-3'; 5'-GAAGGGCTTGGCAGTTCTG-3
IFN- γ	5'-TCCTGCCAGACTCGTTTC-3'; 5'-ACGGCTCCAAGTTAGAATCT-3