**Supplementary Table 1. Four components of the Parkinson’s disorder score**

|  |  |  |
| --- | --- | --- |
| Characteristic | Score | Ranking |
| Range of Movement | 0 | Walking on the floor and other substrates\* |
| 1 | Walking on the floor of the cage only |
| 2 | Movement of limbs and/or trunk, without locomotion\*\* |
| 3 | Movement of the head only, without locomotion\*\*\* |
| 4 | No movement\*\*\*\* |
| Bradykinesia score | 0 | Normal speed and initiation of the movement |
| 1 | Mild slowing of movement |
| 2 | Moderate slowing, difficulty initiating and maintaining movement, freezing |
| 3 | Marked slowing, or unable to move, with prolonged freezing episodes |
| Postural  abnormality score | 0 | Normal, upright, holds head up, normal balance |
| 1 | Hunched body, holds head up |
| 2 | Hunched body and neck, face down, may lose balance |
| Checking behavior (attention) | 0 | Present, looking around, observant |
| 1 | Absent |

\*Ceiling, walls, and perches

\*\*In this ranking, movement trumps location; therefore, in this regard, an animal sitting, with no locomotion, but only the movement of limbs in any portion of the cage space

\*\*\*In this ranking, movement trumps location; therefore, in this regard, an animal sitting, with no locomotion, only head movements in any portion of the cage space

\*\*\*\*In this ranking, movement trumps location; therefore, in this regard, an animal sitting, with no locomotion, and no movements in any portion of the cage space

**Supplementary Table 2. List of antibodies used for immunofluorescence and western blotting**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Target** | **Clone** | **Conjugate** | **Dilution ratios** | **Catalog No.** | **Company** |
| TH | Monoclonal | Unconjugated | 1:200 or  2 μg/mL | 701949 | Invitrogen |
| Clec5a | Monoclonal | Unconjugated | 1:200 or  1:1000 | MAB1639 | R&D Systems |
| p-ERK1/2 | Monoclonal | Unconjugated | 1:1000 | 4377 | Cell Signaling Technology |
| ERK1/2 | Monoclonal | Unconjugated | 1:1000 | 9107 | Cell Signaling Technology |
| p-NF-κB p65 | Monoclonal | Unconjugated | 1:1000 | 13346 | Cell Signaling Technology |
| NF-κB p65 | Monoclonal | Unconjugated | 1:1000 | 8242 | Cell Signaling Technology |
| p-JNK | Monoclonal | Unconjugated | 1:1000 | 9255 | Cell Signaling Technology |
| JNK | Polyclonal | Unconjugated | 1:1000 | 9252 | Cell Signaling Technology |
| p-p38 | Monoclonal | Unconjugated | 1:1000 | 4631 | Cell Signaling Technology |
| p38 | Monoclonal | Unconjugated | 1:1000 | 8690 | Cell Signaling Technology |
| p-STAT3 | Monoclonal | Unconjugated | 1:1000 | 9145 | Cell Signaling Technology |
| STAT3 | Monoclonal | Unconjugated | 1:1000 | 9139 | Cell Signaling Technology |
| p-Syk | Polyclonal | Unconjugated | 1:1000 | 2711 | Cell Signaling Technology |
| Syk | Polyclonal | Unconjugated | 1:1000 | 2712 | Cell Signaling Technology |
| DAP12 | Monoclonal | Unconjugated | 1:1000 | sc-166084 | Santa Cruz Biotechnology |
| GAPDH | Monoclonal | Unconjugated | 1:1000 | bsm-0978M | Bioss |
| Mouse IgG | Polyclonal | Alexa Fluor® 594 | 1:200 | 115-585-003 | Jackson ImmunoResearch |
| Mouse IgG | Polyclonal | FITC | 1:200 | 115-095-003 | Jackson ImmunoResearch |
| Mouse IgG | Monoclonal | HRP | 1:5000 | sc-2039 | Santa Cruz Biotechnology |
| Goat IgG | Monoclonal | HRP | 1:5000 | sc-2489 | Santa Cruz Biotechnology |
| Rabbit IgG | Monoclonal | HRP | 1:5000 | sc-2357 | Santa Cruz Biotechnology |

**Supplementary Table 3. List of antibodies used for flow cytometry**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Target** | **Clone** | **Conjugate** | **Dilution ratio** | **Catalog No.** | **Company** |
| CD11c | N418 | APC | 1:400 | 117310 | BioLegend |
| CD11c | N418 | PE | 1:400 | 12-0114-83 | Invitrogen |
| CD40 | 3/23 | PE | 1:200 | 553791 | BD Biosciences |
| CD80 | 16-10A1 | PE | 1:200 | 12-0801-83 | Invitrogen |
| MHC II | 2G9 | PE | 1:800 | 558593 | BD Biosciences |
| IL-10 | JES5-16E3 | PE | 1:200 | 554467 | BD Biosciences |
| CD14 | Sal4-2 | FITC | 1:200 | 123308 | BioLegend |
| CD54 | 3E2 | FITC | 1:400 | 553252 | BD Biosciences |
| CD86 | PO3 | FITC | 1:400 | 105110 | BioLegend |
| MHC I | KH95 | FITC | 1:100 | 111506 | BioLegend |
| CD4 | RM4-5 | APC | 1:200 | 100516 | BioLegend |
| CD25 | 7D4 | FITC | 1:200 | 553072 | BD Biosciences |
| IFN-γ | XMG1.2 | PE | 1:200 | 554412 | BD Biosciences |
| IL-4 | 11B11 | Alexa Fluor® 488 | 1:200 | 53-7041-82 | Invitrogen |
| IL-17A | TC11-18H10.1 | PE | 1:200 | 506903 | BioLegend |
| Foxp3 | FJK-16s | PE | 1:200 | 12-5773-82 | Invitrogen |
| Propidium Iodide | - | - | 1:400 | 556463 | BD Biosciences |

**Supplementary Table 4. Products information**

|  |  |  |  |
| --- | --- | --- | --- |
| **Product name** | **Cat No.** | **Manufacturer** | **Location** |
| Lipofectamine™ 3000 Transfection Reagent | L3000075 | Invitrogen | Waltham, MA, USA |
| GlutaMAX™ | 35050061 | Gibco | NY, USA |
| Sodium Pyruvate | 11360-070 | Gibco | NY, USA |
| RPMI 1640 | SH30255.01 | Cytiva, Hyclone Laboratories | Logan, UT, USA |
| Fetal bovine serum | 35-015-CV | Corning | NY, USA |
| Antibiotic-Antimycotic | 15240-062 | Gibco | NY, USA |
| 2-mercaptoethanol | 21985-023 | Gibco | NY, USA |
| rm GM-CSF | JW-M001-0500 | JWCreaGene | Gwacheon, Gyeonggi-do, Republic of Korea |
| rm IL-4 | JW-M002-0125 | JWCreaGene | Gwacheon, Gyeonggi-do, Republic of Korea |
| Polybrene | sc-134220A | Santa Cruz Biotechnology | Dallas, TX, USA |
| rm TNF-α | 554589 | BD Biosciences | San Jose, CA, USA |
| KLH | H8283 | Sigma-Aldrich | St. Louis, MO, USA |
| LPS | L6143 | Sigma-Aldrich | St. Louis, MO, USA |
| rm α-syn | S-1010-2 | rPeptide | Watkinsville, GA, USA |
| MPTP-HCl | M0896 | Sigma-Aldrich | St. Louis, MO, USA |
| 4% paraformaldehyde | BP090a | Biosolution | Seoul, Republic of Korea |
| Triton™ X-100 | T8787 | MilliporeSigma | Burlington, MA, USA |
| Poly-L-lysine | P8920 | Sigma-Aldrich | St. Louis, MO, USA |
| Tween 20 | 8571-1405 | Daejung Chemical & Metals | Santa Clara, CA, USA |
| Antibody diluent | S3022 | Dako, Agilent Technologies | Siheung, Gyeonggi-do, Republic of Korea |
| DAPI | D9542 | Sigma-Aldrich | St. Louis, MO, USA |
| PRO-PREP™ protein extraction kit | 17081 | iNtRON Biotechnology | Seongnam, Gyeonggi-do, Republic of Korea |
| Pierce™ Bradford Plus Protein Assay Kits | 23236 | Thermo Fisher Scientific | NY, USA |
| IL-1β ELISA kit | 432604 | BioLegend | San Diego, CA, USA |
| IL-4 ELISA kit | 431104 | BioLegend | San Diego, CA, USA |
| IL-6 ELISA kit | 431304 | BioLegend | San Diego, CA, USA |
| TNF-α ELISA kit | 430904 | BioLegend | San Diego, CA, USA |
| IL-10 ELISA kit | 555252 | BD Biosciences | San Jose, CA, USA |
| IL-12p40 ELISA kit | 555165 | BD Biosciences | San Jose, CA, USA |
| IFN-γ ELISA kit | 551866 | BD Biosciences | San Jose, CA, USA |
| TGF-β ELISA kit | DY1679-05 | R&D Systems | Minneapolis, MN, USA |
| Nylon wool fiber | 18369-10 | Polysciences, Inc. | Warrington, PA, USA |
| CFSE labeling kit | 65-0850-84 | Invitrogen | Waltham, MA, USA |
| BD Intracellular Staining Kit | 554722/554723 | BD Biosciences | San Jose, CA, USA |
| Foxp3/Transcription Factor Staining Buffer Set | 00-5523-00 | Invitrogen | Waltham, MA, USA |
| Labozol | CMRZ001 | Cosmogenetech | Seoul, Republic of Korea |
| LaboPass cDNA synthesis kit | CMRTK002 | Cosmogenetech | Seoul, Republic of Korea |
| SensiFast™ SYBR® Hi-Rox Mix | BIO-92020 | Bioline | Memphis, TN, USA |
| PVDF membrane | IPVH00010 | Thermo Fisher Scientific | NY, USA |
| SuperSignal™ Chemiluminescence Substrate | 34095 | Thermo Fisher Scientific | NY, USA |
| Percoll® | P1644 | P1644 | St. Louis, MO, USA |

텍스트, 도표, 흑백, 평면도이(가) 표시된 사진

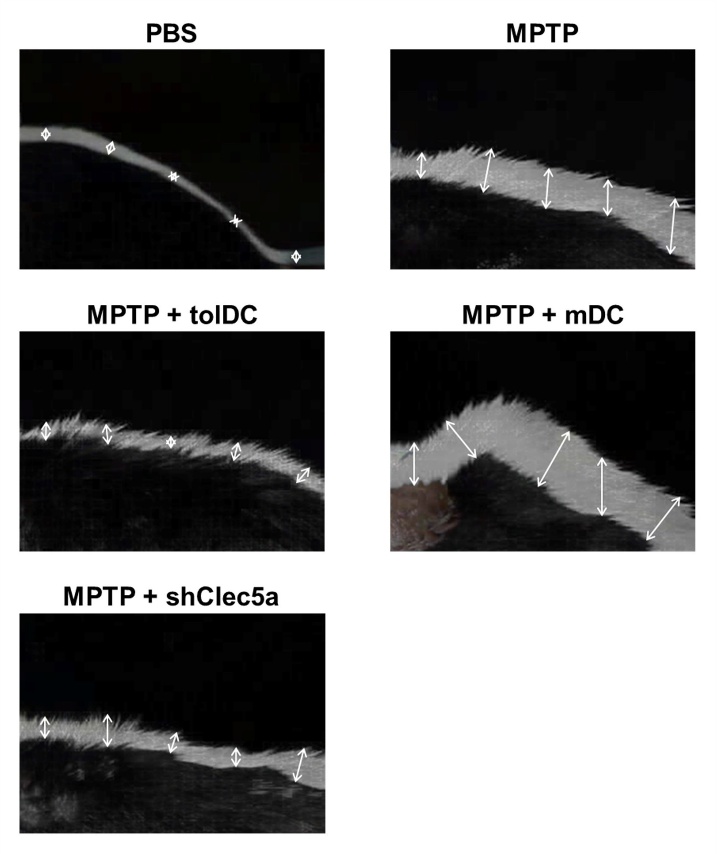
AI 생성 콘텐츠는 정확하지 않을 수 있습니다.

**Supplementary Fig. 1. Characterization of BMDCs.** (A) Immunophenotypes of DCs. The histograms are representative of independent DC preparations from five mice (upper). Bar graphs showing the MFI (lower; Student’s t-test; n = 5 independent DC preparations; \*\*\**p* < 0.001 vs. tolDC). (B) Cytokine profile of DCs (Student’s t-test; n = 5 independent DC preparations; \*\**p* < 0.01 and \*\*\**p* < 0.001 vs. tolDC). (C) The percentage of CD11c+IL-10+ cells. The percentage of CD11c+IL-10+ cells are indicated on the plots. Bar graphs showing the MFI (Student’s t-test; n = 5 independent DC preparations; \*\**p* < 0.01 vs. tolDC). (D) T cell proliferation capacity of DCs (Student’s t-test; n = 10 independent DC preparations; \*\*\**p* < 0.001 vs. tolDC). (E) DC-mediated T cell polarization. The percentages of Th1 (CD4+IFN-γ+), Th2 (CD4+IL-4+) and Th17 (CD4+IL-17A+) cells are indicated on the plots. (F) DC-mediated Treg cell polarization. The percentages of Tregs (CD4+CD25+Foxp3+) are indicated on the plots (Mann–Whitney U test; n ≥ 4 independent DC preparations; \**p* < 0.05, \*\**p* < 0.01 and \*\*\**p* < 0.001 vs. tolDC). (G) DC-mediated T cell cytokine profile (Student’s t-test; n = 5 independent DC preparations; \*\*\**p* < 0.001 vs. tolDC). All data are expressed as the mean ± SD.

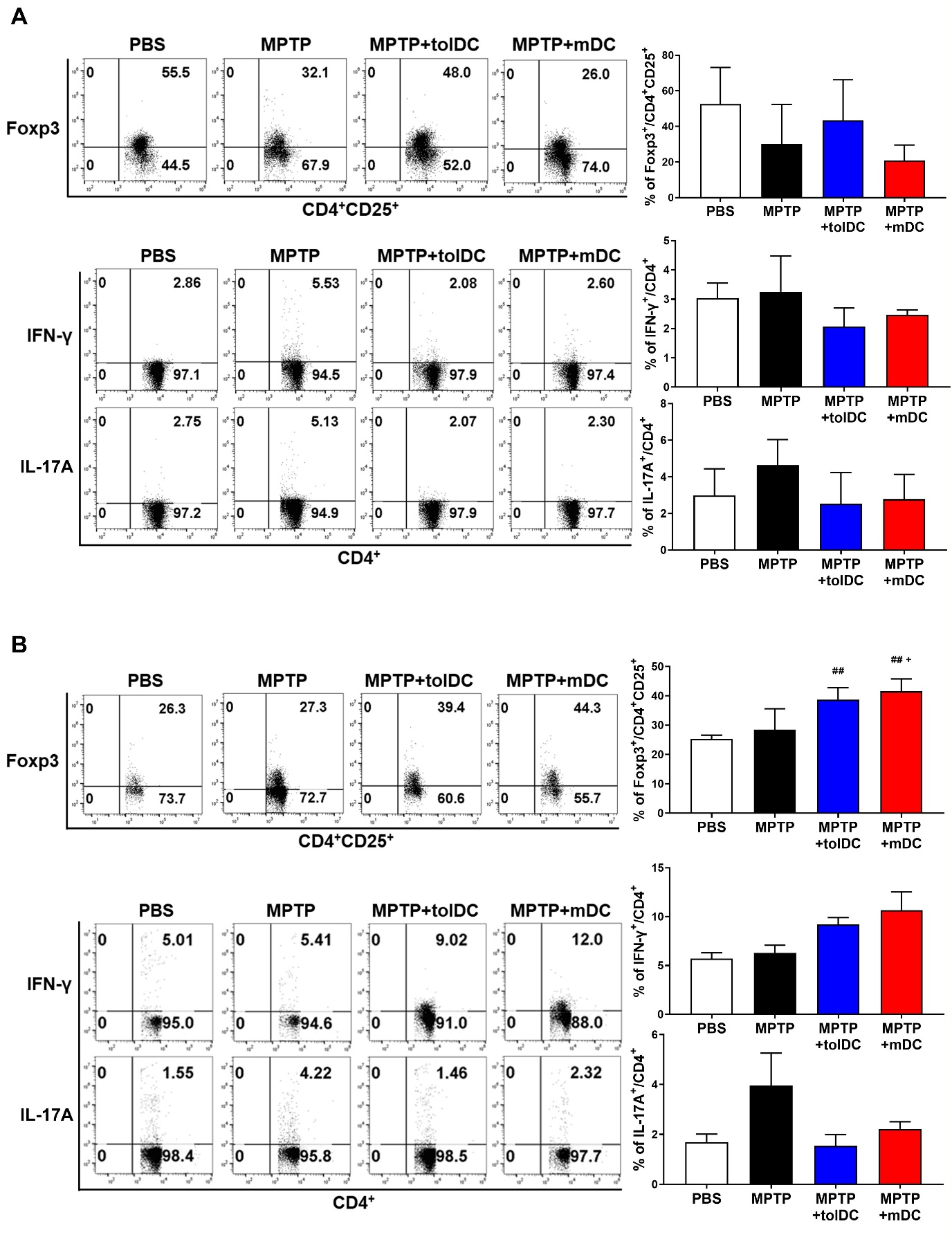
도표, 텍스트, 스케치, 기술 도면이(가) 표시된 사진

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**Supplementary Fig. 2. Clec5a expression in shRNA-treated tolDCs.** (A) Immunophenotype of shClec5a. Representative histograms of five independent DC preparations are shown. The bar graphs show the MFI (Mann–Whitney U test; n = 5 independent DC preparations). (B) Cytokine profile of shClec5a (Mann–Whitney U test; n = 5 independent DC preparations; ††*p* < 0.01 vs. shCon). (C) The percentages of CD11c+IL-10+ cells. The percentages of CD11c+IL-10+ cells are indicated in the plots. Bar graphs showing the MFI (Student’s t-test; n = 5 independent DC preparations; †††*p* < 0.001 vs. shCon). All data are expressed as mean ± SD.



**Supplementary Fig. 3. Behavioral test image.** Behavioral test: Tremor test representative image.



**Supplementary Fig. 4. tolDC increased Treg population in the LNs.** (A) The percentage of Treg (CD4+CD25+Foxp3+), Th1 (CD4+IFN-γ+), and Th17 (CD4+IL-17A+) populations in the MPTP-intoxicated mouse spleen (Kruskal–Wallis ANOVA;n ≥ 3). (B) The percentage of Treg (CD4+CD25+Foxp3+), Th1 (CD4+IFN-γ+), and Th17 (CD4+IL-17A+) populations in MPTP-intoxicated mouse LNs (Submandibular lymph nodes) (Kruskal–Wallis ANOVA;n ≥ 3; ##*p* < 0.01 vs. PBS; +*p* < 0.05 vs. MPTP). All data are expressed as the mean ± SD.