Supplementary Table 1. qRT-PCR primer sequences used in this study

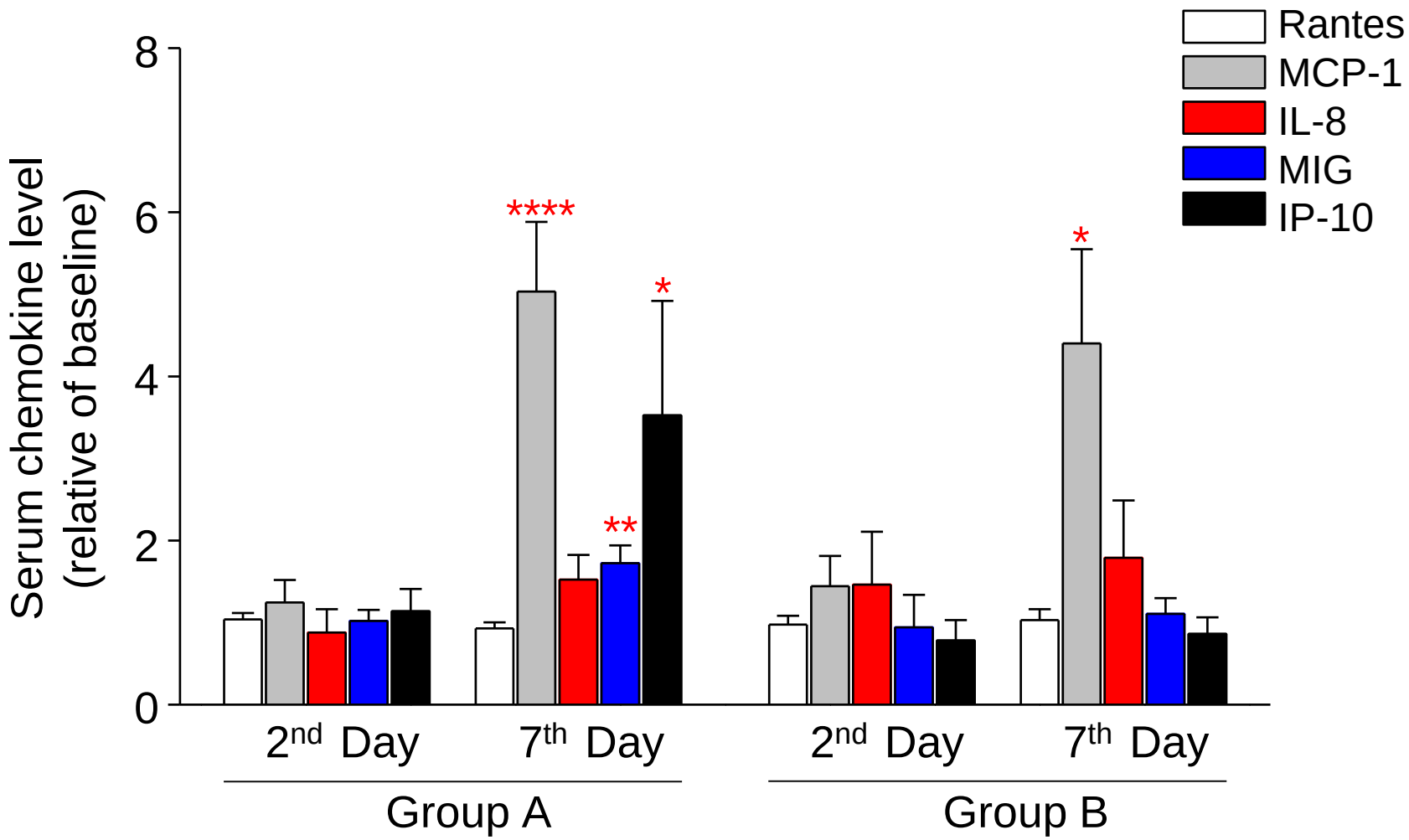
Gene	Primer sequence
mIL-20	Forward: 5′-AGGACGACTGAGTCTTTGAAA-3′ Reverse: 5′-CATTGCTTCTTCCCCACAATG-3′
mRantes	Forward: 5’-CCCTGCTGCTTTGCCTAC-3’ Reverse: 5’-TCTTCTCTGGGTTGGCACAC-3’
mMCP-1	Forward: 5′-AGGTCCCTGTCATGCTTCTG-3′ Reverse: 5′-GCTGCTGGTGATCCTCTTGT-3′
mKC	Forward: 5’-CTGTCAGTGCCTGCAGACCA-3’ Reverse: 5’-CCAAGGGAGCTTCAGGGTCA-3’
mTNF-α	Forward: 5’-AGTGACAAGCCCGTAGCCC-3’ Reverse: 5’-AGCCTTGTCCCTTGAAGAG-3’
mIL-1β	Forward: 5’-GCTGAAAGCTCTCCACCTC-3’ Reverse: 5’-GAGGTGCTGATGTACCAGTT-3’
mIL-6	Forward: 5’-CAGGAAATTTGCCTATTGAAAAT-3’ Reverse: 5’-TTGGATGGTCTTGGTCCTTAG-3’
mIL-17	Forward: 5’-TGAGCTTCCCAGATCACAGA-3’ Reverse: 5’-TCCAGAAGGCCCTCAGACTA-3’
mTGF-β1	Forward: 5′-CGGCAGCTGTACATTGACTT-3′ Reverse: 5′-TCAGCTGCACTTGCAGGAG-3′
mIL-10	Forward: 5′-GCTCTTACTGACTGGCATGAG-3′ Reverse: 5′-CGCAGCTCTAGGAGCATGTG-3′
mGAPDH	Forward: 5′-GATGGGTGTGAACCACGAGA-3′ Reverse: 5′-CAGATCCACGACGGACACAT-3′

Supplementary Table 2. Antibodies used in this study

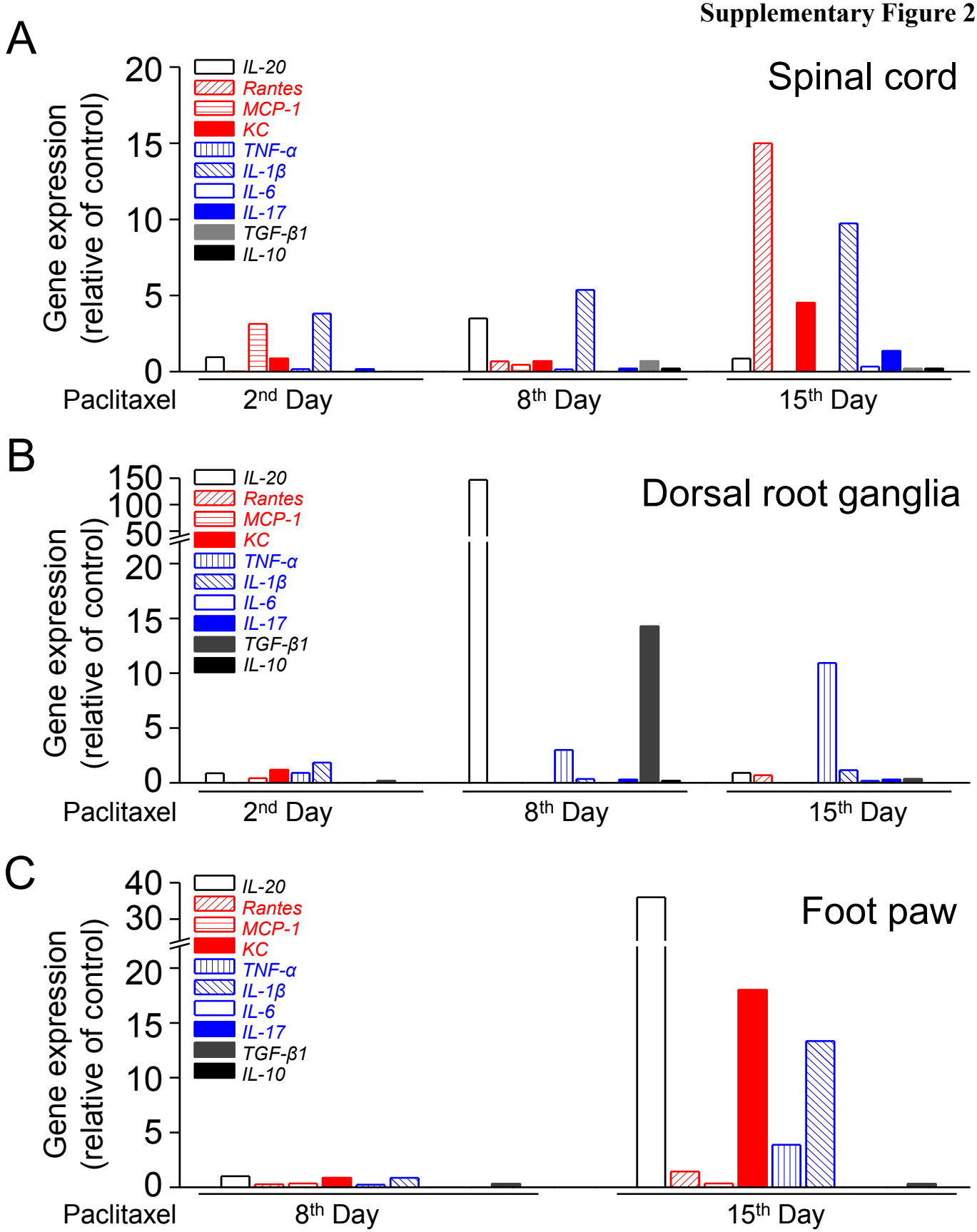
Antibody	Working Concentration	Source
Primary antibody		
chicken anti-MAP2	1:100	Mybiosource, MBS502140
mouse anti-IL-20 antibody	1:100	7E from Dr. Chang's Lab
mouse anti-IL-20R1 antibody	1:100	5D from Dr. Chang's Lab
mouse anti-NeuN	1:100	Millipore, Clone A60, MAB377
mouse anti-NOS2	1:100	Santa Cruz, sc-7271
mouse anti-TRPC1 antibody	1:100	Santa Cruz, sc-133076
mouse anti-Orai1 antibody	1:100	Santa Cruz, sc-68895
goat anti-Collagens IV antibody	1:100	Chemicon, AB769
rat anti-CD68 antibody	1:100	Novus, NB100-683
rabbit anti-βIII tubulin antibody	1:100	Cell signaling, Clone D71G9
rabbit anti-Arginase I antibody	1:100	Santa Cruz, sc-20150
rabbit anti-STIM1 antibody	1:100	Cell signaling, #5668
rabbit anti-PGP9.5 antibody	1:100	Abcam, ab108986
rabbit anti-TRPA1 antibody	1:100	Novus, NB110-40763
rabbit anti-TRPV1 antibody	1:100	Novus, NB100-1617
rabbit anti-TRPV4 antibody	1:100	Alomone labs, ACC-034
rabbit anti-TRPM8 antibody	1:100	Novus, NB200-145
Secondary antibody		
anti-mouse Alexa 488	1:200	Invitrogen, A-21202
anti-mouse Alexa 594	1:200	Invitrogen, A-21203
anti-rat Alexa 488	1:200	Invitrogen, A-21208
anti-goat Alexa 594	1:200	Invitrogen, A-11058
anti-chicken Alexa 594	1:200	Invitrogen, A-11039
anti-rabbit Alexa 488	1:200	Invitrogen, A-21206
anti-rabbit Alexa 594	1:200	Invitrogen, A-21207
Nuclear counterstain		
Hoechst 33258	2 mg/ml	Molecular Probes

Supplementary Table 3. Demographic and baseline characteristics of the subjects

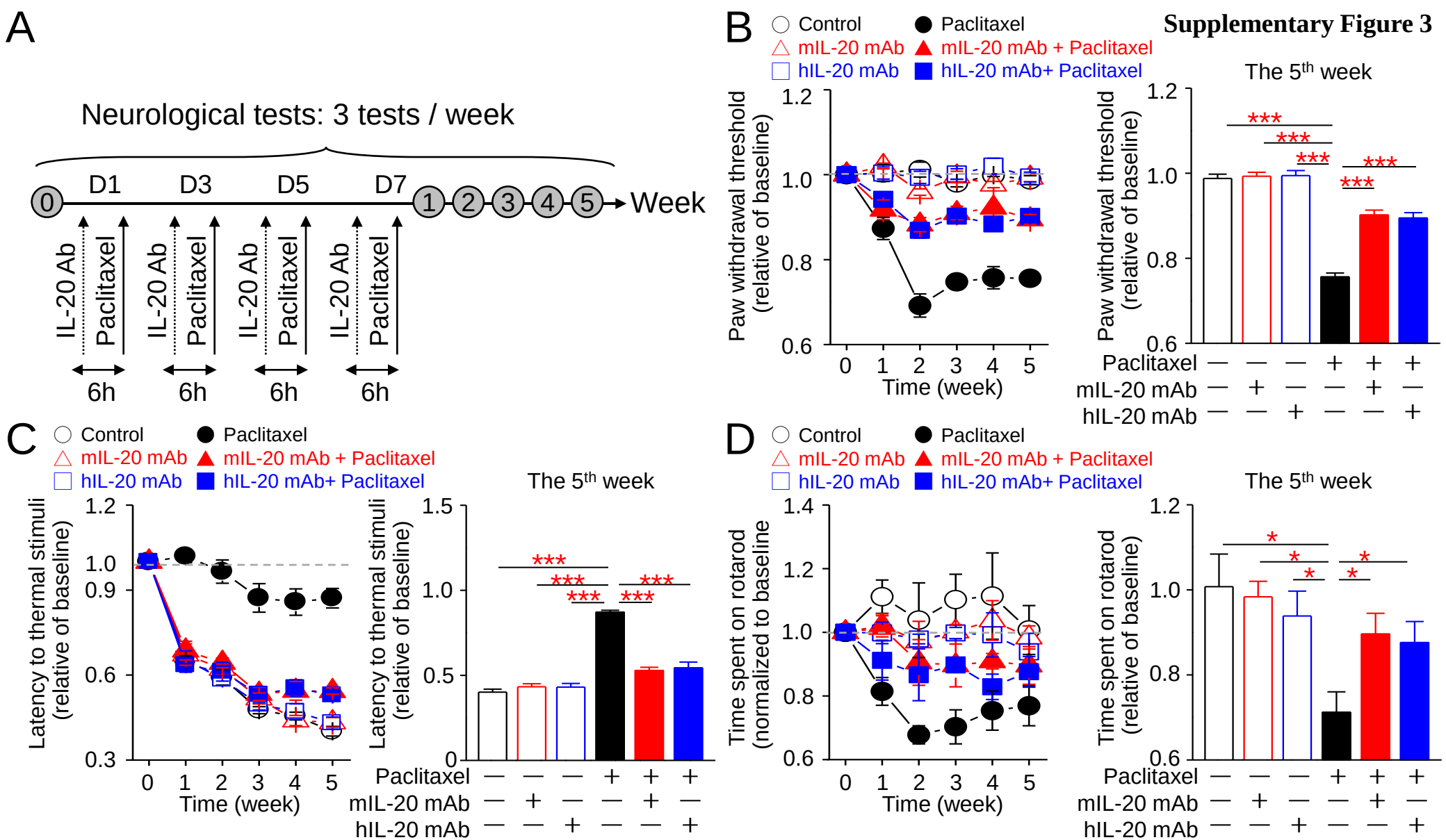
Characteristic	Gynecological cancer patients (n = 15)	Group A (n = 10)	Group B (n = 5)	Healthy subjects (n = 12)
Age, mean (range)	55.6 (43-68)	55.3 (43-68)	56.2 (49-63)	52.3 (44-65)
Gender, n (Female)	15	10	5	12
Height, cm, mean (range)	156.4 (144.6-164.9)	157.2 (144.6-164.9)	155.0 (151.2-160.8)	159.5 (147.3-165.1)
Weight, kg, mean (range)	57.3 (42.6-93.8)	59.8 (45.7-93.8)	53.2 (42.6-68.4)	57.4 (45.4-80.9)
Body surface area, m^2, mean (range)	1.67 (1.44–2.20)	1.71 (1.46–2.20)	1.60 (1.44-1.80)	1.73 (1.47–2.03)
Baseline serum IL-20 level, pg/ml, mean (range)	244.1 (12.9–922.4)	231.5 (12.9–922.4)	265.0 (15.1-1283.9)	157.80 (12.3- 988.6)
Tumor type				
Ovary	6	5	1	
Uterus	9	5	4	
Stage (I/II/III)	6/ 4/ 5	4/ 3/ 3	2/ 1/ 2	
Ovary	3/ 3/ 0	3/ 2/ 0	0/ 1/ 0	
Uterus	3/ 1/ 5	1/ 1/ 3	2/ 0/ 2	



Supplementary Figure 1. Serum chemokine signatures in cancer patients administered paclitaxel. Evaluation of serum Rantes, macrophage inflammatory proteins (MCP-1), IL-8, monokine induced by interferon gamma (MIG), and interferon gamma-induced protein 10 (IP-10) on days 2 and 7 following paclitaxel administration to cancer patients (n = 10 from Group A; n = 5 from Group B). * $P < 0.05$; ** $P < 0.01$; **** $P < 0.0001$, compared to serum chemokine levels on day 2, based on one-way ANOVA.

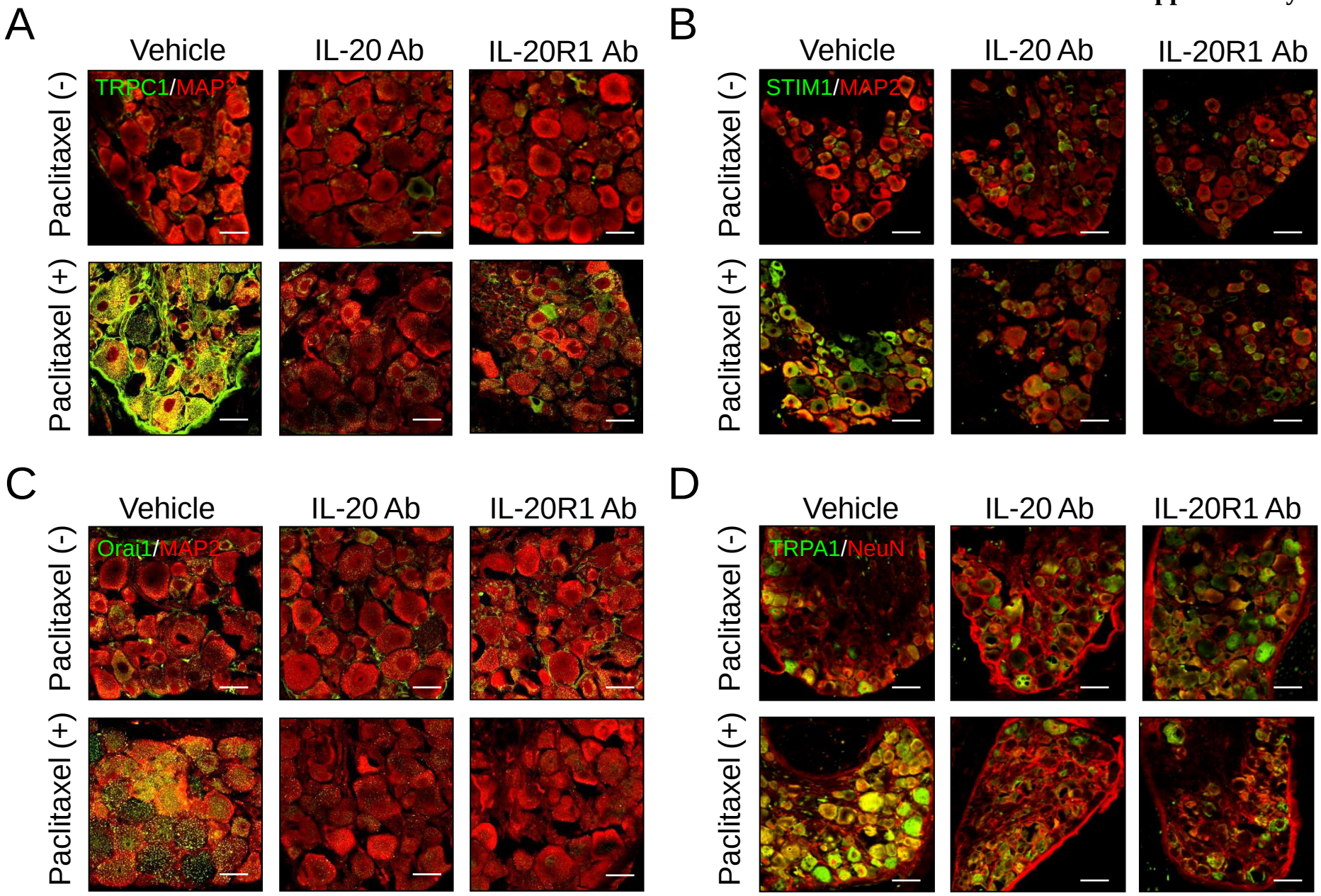


Supplementary Figure 2. Paclitaxel activates specific chemokines and cytokines along somatosensory pathways. Quantification of transcript expression in mouse **(A)** spinal cords, **(B)** dorsal root ganglia, and **(C)** foot paws by qRT-PCR on days 0, 2, 8, and 15 after paclitaxel treatment. Data are from three biological replicates.

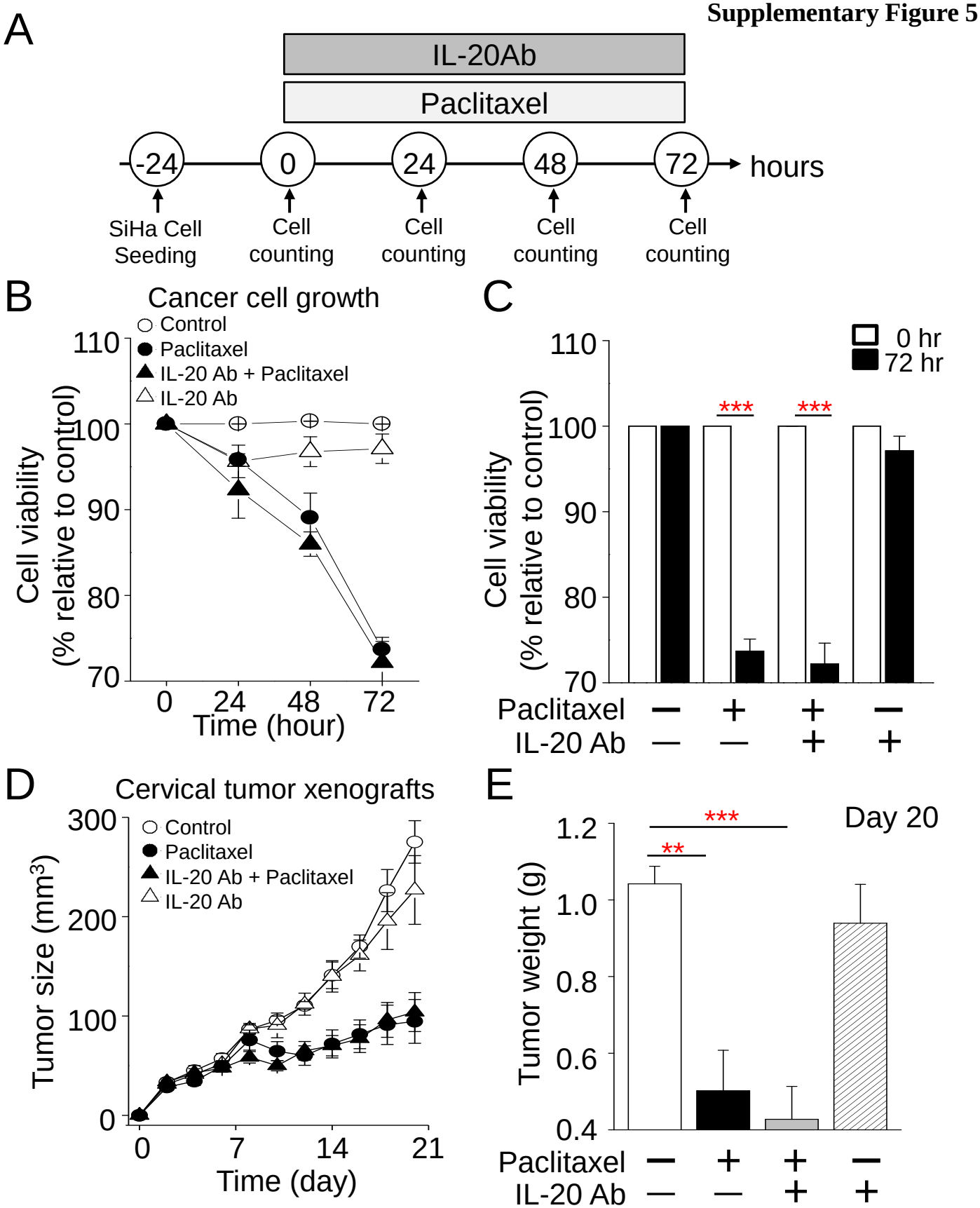


Supplementary Figure 3

Supplementary Figure 3. A humanized anti-IL-20 monoclonal antibody (mAb) dampens paclitaxel-induced neuropathy. (A) Experimental design to assess the protective effect of humanized anti-IL-20 on chemotherapy-induced neuropathic pain. (B) The effect of humanized anti-IL-20 mAb on body weight, heart rate, blood pressure, and locomotor activity. (D–F) The administration of a mouse anti-IL-20 mAb or humanized anti-IL-20 mAb after paclitaxel treatment alleviated mechanical allodynia, thermohypesthesia, and motor dysfunction. (B–D) The administration of a humanized anti-IL-20 mAb attenuated chemotherapy-induced mechanical allodynia, thermohypesthesia, and motor dysfunction. Right: quantification of mechanical threshold, thermal sensitivity, and motor coordination at the 5th week (n = 5 mice/group). * P < 0.05, *** P < 0.001, compared with by two-way ANOVA, *Bonferroni* posttest.



Supplementary Figure 4. IL-20 blockade attenuates paclitaxel-induced sensitization of the SOCE and TRP channels. Representative fluorescence imaging of SOCE compartments (including Orai1, STIM1) and transient receptor potential channels (including TRPC1, TRPA1) in DRG neurons from mice with vehicle, paclitaxel, IL-20 mAb or IL-20R1 mAb treatment. Scale bar, 50 μm.



Supplementary Figure 5. Anti-IL-20 mAb did not jeopardize the antitumor effect of paclitaxel in cervical cancer growth. (A) The protocol showing antibody treatment and the cancer cell counting. (B) Cervical tumor growth and (C) cell viability was analyzed after 72hr incubation with anti-IL-20 mAb or paclitaxel, alone or in combination. Each value represents as mean ± SEM from 3 different experiments. ***P < 0.001 compared to vehicle-treated cells. (D) No adverse effect of anti-IL-20 mAb on the antitumor treatment of paclitaxel in female NOD/SCID mouse model of human cervical cancer xenografts. The growth curves of human cervical cancer xenografts after anti-IL-20 mAb or paclitaxel treatment (E) Quantitative analyses of tumor volume on the 20th day post-inoculation (n = 5 /group). ** P< 0.01; *** P< 0.001, by two-way ANOVA. All data represent as mean ± SEM.