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'Nephrogenic' systemic fibrosis is mediated by myeloid C-C chemokine receptor 2 dataset

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'Nephrogenic' systemic fibrosis is mediated by myeloid C-C chemokine receptor 2 Dataset.

This dataset presents results of an *in vivo* model of gadolinium-based contrast agent-induced systemic fibrosis. **Figure 1** demonstrates that gadolinium-based contrast agent treatment induces dermal fibrosis and hypercellularity *of the same magnitude* in patients afflicted with 'nephrogenic' systemic fibrosis. Electron microscopy demonstrated that systemic gadolinium treatment induced the formation of multinucleated giant cells in the dermis laden with *electron-dense, mesh-like nanostructures*. Scanning transmission electron microscopy with energy-dispersive spectroscopy revealed that the electron-dense nanoparticles were gadolinium rich. **Figure 2** represents the first chimeric model of mice and gadolinium-induced systemic fibrosis (to our knowledge). Lethally-irradiated mice with 5/6 nephrectomy (to model renal insufficiency) were salvaged with bone marrow from green fluorescent protein-expressing donors. After engraftment, the group was randomized to gadolinium-based contrast agent treatment or control. Gadolinium-based contrast agent treatment led to dermal fibrosis, dermal hypercellularity, and an increase in myeloid cells in the dermis. **Figure 3** represents the expression of fibrocyte markers (CD34, CD45RO), the myofibroblast marker α smooth muscle actin, and a marker of alternatively-activated macrophages—CD163—in the dermis. **Figure 4** demonstrates an increase of the monocyte chemoattractant protein and its receptor, the C-C chemokine receptor 2, in the dermis of the gadolinium-based contrast-treated group. **Figure 5** shows the impact of *recipient* deficiency of the C-C chemokine receptor 2 in a chimeric model of gadolinium-based contrast agent-induced fibrosis and dermal cellularity. **Figure 6** depicts the inverse of the experiment shown in Figure 5; wild-type recipient mice were lethally irradiated and salvaged with C-C chemokine receptor 2-deficient bone marrow (with a red fluorescent tag). Skin fibrosis and dermal cellularity were abrogated in the group treated with gadolinium-based contrast agent.

Figure 1 Files:

Figure1_022019JournalOfInvestigativeDermatology_data.xlsx

Figure1_101615CCR2.tiff

Figure1_collagenI.tiff

Figure1_Fibronectin.jpg

Figure1_File02.TIF

Figure1_File02.TXT

Figure1_File10-control.TIF

Figure1_File10-control.TXT

Figure1_GAPDH.tiff

Figure1_WT_M-CTR_MOUSE_11_001.tif

Figure1_WT_M-CTR_MOUSE_11_003.tif

Figure1_WT_M-OM_MOUSE_9_010.tif

Figure1_WT_M-OM_MOUSE_9_011.tif

Figure1_WTFC_2-4.jpg

Figure1_WT-F-Con_8-3.jpg

Figure1_WT-F-Omn_1-1.jpg

Figure 2 Files:

Figure2_052715_GFP.tif

Figure2_090215_GFP_mice_skin_cell_count_columnar_for_the_JID.csv

Figure2_CollagenI-1.jpg

Figure2_DAPI_Mice10-Ctr-2.tif

Figure2_DAPI_Mice6-Omn-2_GFP.tif

Figure2_Fibronectin-5.jpg

Figure2_Fibronectin-DAPI_Mice10-Ctr-1.tif

Figure2_Fibronectin-DAPI_Mice6-Omn-2.tif

Figure2_GAPDH_CollagenI-2.jpg

Figure2_NSF_in_vivo_GFP_mouse_skin_fold_thicknesses.xlsx

Figure2_WTFO_7-2.jpg

Figure 3 Files:

Figure3_CD34-Ctr8-DAPI-2merged.png

Figure3_CD34-Om2-DAPI-1merged.png

Figure3_CD45RO-Ctr9-3.tiff

Figure3_CD45RO-Ctr9-DAPI-3.tiff

Figure3_CD45RO-Om1-2m.tiff

Figure3_CD45RO-Om1-2.tiff

Figure3_CD45RO-Om1-DAPI-2.tiff

Figure3_Ctr11-aSMA-3.jpg

Figure3_Ctr11-CD163-1.jpg

Figure3_Ctr11-GFP-1.jpg

Figure3_Ctr11-GFP-3.jpg

Figure3_Ctr11-GFP-aSMA-DAPI-3.jpg

Figure3_Ctr11-GFP-CD163-DAPI-1.jpg

Figure3_GFP_CD45RO_Ctr9-3.tiff

Figure3_GFP_CD45RO_Om1-2.tiff

Figure3_Om4-aSMA-2.jpg

Figure3_Om4-CD163-2.jpg

Figure3_Om4-GFP-2fig.jpg

Figure3_Om4-GFP-2.jpg

Figure3_Om4-GFP-aSMA-DAPI-2.jpg

Figure3_Om4-GFP-CD163-DAPI-2.jpg

Figure 4 Files:

Figure 4GFP_mice_skin_Western2_CCR2.2.png

Figure4_041817_NSF_in_vivo_GFP_skin_CCR2_fluorescent_intensity.csv

Figure4_Ctr8-CCR2-merg-1.jpg

Figure4_Ctr8-CCR2-merg-1.pdf

Figure4_GFP_mice_skin_Western_2GAPDH.2.png

Figure4_GFP_mice_skin_Western_CCR2_GAPDH_calibration.csv

Figure4_GFP_mice_skin_Western_CCR2_GAPDH_calibration_v1.csv

Figure4_MCP-1-Ctr9-DAPI-1merged.png

Figure4_MCP-1-Om2-DAPI-1merged.png

Figure4_Om2-CCR2-merg-3.jpg

Figure 5 Files:

Figure5.tiff

Figure5_CCR2-Ctr8-CD45RO-3.jpg

Figure5_CCR2-Ctr8-GFP-3.jpg

Figure5_CCR2-Ctr8-GFP-CD45RO-DAPI-3.jpg

Figure5_CCR2-KO_Ctr3_GFP-cd34-DAPI-1.jpg

Figure5_CCR2-KO_Ctr3-CD34-1.jpg

Figure5_CCR2-KO_Ctr3-GFP-1.jpg

Figure5_CCR2-KO_Ctr3-GFP-1h.jpg

Figure5_CCR2-KO_Ctr4-CD163-3.jpg

Figure5_CCR2-KO_Ctr4-CD163-DAPI-3.jpg

Figure5_CCR2-KO_Ctr4-GFP-3.jpg

Figure5_CCR2-KO_Ctr4-GFP-asma-DAPI-3.jpg
Figure5_CCR2-KO_Om5-CD163-3.jpg
Figure5_CCR2-KO_Om5-CD163-DAPI-3.jpg
Figure5_CCR2-KO_Om6_GFP-cd34-DAPI-4.jpg
Figure5_CCR2-KO_Om6-CD34-4.jpg
Figure5_CCR2-KO_Om6-GFP-4 b.jpg
Figure5_CCR2-KO_Om6-GFP-4.jpg
Figure5_CCR2-KO_Om6-GFP-asma-DAPI-4.jpg
Figure5_CCR2-Om1-Fibron-DAPI-3merged.tiff
Figure5_CCR2-Om5-CD45RO-1.jpg
Figure5_CCR2-Om5-GFP-1.jpg
Figure5_CCR2-Om5-GFP-CD45RO-DAPI-1.jpg
Figure5_NSF_in_vivo_GFP_transplant_wild_type_CCR2_deficient_dermal_nuclei_counts.xlsx
Figure5_WT_Ctr5-GFP-3.jpg
Figure5_WT_Ctr5-GFP-mcp1-DAPI-3.jpg
Figure5_WT_Ctr5-MCP1-3.jpg
Figure5_WT_Ctr8-CD163-1.jpg
Figure5_WT_Ctr8-CD163-DAPI-1.jpg
Figure5_WT_Ctr8-GFP-2.jpg
Figure5_WT_Ctr8-GFP-4.jpg
Figure5_WT_Ctr8-GFP-asma-DAPI-2.jpg
Figure5_WT_Ctr8-GFP-cd34-DAPI-4.jpg
Figure5_WT_Om1-aSMA-1.jpg
Figure5_WT_Om1-GFP-1.jpg
Figure5_WT_Om1-GFP-3.jpg
Figure5_WT_Om1-GFP-asma-DAPI-1.jpg
Figure5_WT_Om1-GFP-mcp1-DAPI-3.jpg
Figure5_WT_Om1-MCP1-3.jpg
Figure5_WT_Om3-CD34-4.jpg
Figure5_WT_Om3-GFP-4.jpg
Figure5_WT_Om3-GFP-cd34-DAPI-4.jpg

Figure5_WT-Ctr5-CD45RO-1.jpg
Figure5_WT-Ctr5-GFP-1.jpg
Figure5_WT-Ctr5-GFP-CD45RO-DAPI-1.jpg
Figure5_WT-Ctr8-Fibron-DAPI-3merged.tiff
Figure5_WT-Om2-CD45RO-2.jpg
Figure5_WT-Om2-GFP-2.jpg
Figure5_WT-Om2-GFP-CD45RO-DAPI-2.jpg
Figure5_WT-Om3-Fibron-DAPI-1merged.tiff
Figure5j_CCR2-KO_Ctr3-MCP1-1.jpg
Figure5j_CCR2-KO_Om5-GFP-3.jpg
Figure5j_CCR2-KO_Om5-GFP-mcp1-DAPI-3.jpg
Figure5j_CCR2-KO_Om5-MCP1-1.jpg
Figure5k_CCR2-KO_Ctr4-CCR2-1.jpg
Figure5k_CCR2-KO_Ctr4-CCR2-DAPI-1.jpg
Figure5k_CCR2-KO_Ctr4-CCR2-merg-1.jpg
Figure5k_CCR2-KO_Om5-CCR2-DAPI-1.jpg
Figure5k_CCR2-KO_Om5-CCR2-merg-1.jpg
Figure5k_WT-Ctr8-CCR2-1.jpg
Figure5k_WT-Ctr8-CCR2-DAPI-1.jpg
Figure5k_WT-Ctr8-CCR2-merg-1.jpg
Figure5k_WT-Om1-CCR2-3.jpg
Figure5k_WT-Om1-CCR2-DAPI-3.jpg
Figure5k_WT-Om1-CCR2-merg-3.jpg

Figure 6 Files:

Figure6_1_GAPDH1.jpg
Figure6_111317_NSF_in_vivo_the_RFP-CCR2-deficient_bone_marrow_to_wild-type_mouse_dermal_nuclei_skin_H_E_stain_count.csv
Figure6_CCR2_RFP_BW_skin_ctr_1-2_20x.jpg
Figure6_NSF_in_vivo_the_RFP-CCR2-deficient_bone_marrow_to_wild-type_mouse_dermal_nuclei_skin_H_E_stain_count.xlsx
Figure6b_CCR2_RFP_BW_skin_Om_6-2_20x.jpg

Figure6b_skin_H_E_stain_count.csv
Figure6d_Fn-01-19-18-07.tiff
Figure6d_Fn-01-19-18-08.tiff
Figure6d_Fn-01-19-18-49.tiff
Figure6e_CD163-01-20-18-01.tiff
Figure6e_CD163-01-20-18-02.tiff
Figure6e_CD163-01-20-18-11.tiff
Figure6e_CD163-01-20-18-12.tiff
Figure6f_CD34-01-19-18-15.tiff
Figure6f_CD34-01-19-18-16.tiff
Figure6F_CD34-01-19-18-37.tiff
Figure6F_CD34-01-19-18-38.tiff
Figure6g_CD45RO-02-08-18-31.tiff
Figure6g_CD45RO-02-08-18-32.tiff
Figure6g_CD45RO-02-08-18-49.tiff
Figure6g_CD45RO-02-08-18-50.tiff
Figure6h_RFP-01-20-18-03.tiff
Figure6h_RFP-01-20-18-04.tiff
Figure6h_RFP-01-20-18-05.tiff
Figure6h_RFP-01-20-18-06.tiff

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