'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_collagen1.tif

Figure1_Fibronectin.jpg

Figure1_File02.TIF

Figure1_File02.TXT

Figure1_File10-control.TIF

Figure1_File10-control.TXT

Figure1_GAPDH.tif

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
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:
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Figure3_CD34-Om2-DAPI-1merged.png
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Figure3_CD45RO-Ctr9-DAPI-3.tif
Figure3_CD45RO-Om1-2m.tif
Figure3_CD45RO-Om1-2.tif
Figure3_CD45RO-Om1-DAPI-2.tif
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
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Figure3_Om4-GFP-2fig.jpg
Figure3_Om4-GFP-2.jpg
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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.tif
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