**Supplementary File**

**Reagent Recipes**

*i) DMEM + 1% P/S*

* 99% DMEM
* 1% Penicillin-streptomycin

*ii) DMEM + 10% FBS & 1% P/S (For Flow Cytometry Protocol)*

* 89% DMEM
* 10% FBS
* 1% Penicillin-streptomycin

*iii) FAPs Growth Media*

* 90% Base Media:
	+ 79% DMEM
	+ 20% FBS
	+ 1% Penicillin-Streptomycin
* 10% Heat-inactivated Horse Serum
* 2.5 ng/mL basic Fibroblast Growth Factor (bFGF)

*iv) FAPs Adipogenic Differentiation Media*

* 78% DMEM
* 20% FBS
* 1% Penicillin/Streptomycin
* 1.25 µM Dexamethasone (stock concentration 5 mg/mL) stock solution
* 0.5 mM IBMX (stock concentration 10 mg/mL)
* 5 µM Troglitazone stock solution (stock concentration 1 mg/mL)
* 1 µg/mL Humulin R (stock concentration 1 mM)

*v) FAPs Fibrogenic Differentiation Media*

* 89% DMEM
* 10% FBS
* 1% Penicillin-Streptomycin
* 1 ng/mL TGF-β1

*vi) MPs Growth Media*

* 40% DMEM
* 20% FBS
* 39% Ham’s F10 Base Media
* 1% Penicillin-Streptomycin

*vii) MPs Differentiation Media*

* 97% DMEM
* 2% Horse Serum
* 1% Penicillin-Streptomycin
* 1 µg/mL Humulin R (stock concentration 1 mM)

*viii) Red Blood Cell (RBC) Lysis Buffer (10X)*

* Recipe (100 mL):
	+ 9 g Ammonium Chloride (NH4Cl) [Final Concentration 155 mM]
	+ 1 g Potassium Bicarbonate (KHCO3) [Final Concentration 10 mM]
	+ 37 mg EDTA [Final Concentration 0.1 mM]
	+ 100 mL double distilled water (ddH2O)
* Sterilize through 0.2 µm filter
* Store at 4 °C; should be re-made every 2-3 weeks
* Dilute to 1X using sterile ddH2O on day of prep as needed

*ix) Wash Buffer*

* Recipe (100 mL):
	+ 90 mL 1X PBS
	+ 10 mL 20 mM EDTA in 1X PBS
	+ 10 mL 250 mM HEPES in 1X PBS
	+ 2 mL FBS
* Store at 4 °C

*x) Oil Red O Master Stock*

* Recipe (200 mL):
	+ 0.7 g Oil Red O powder
	+ 200 mL Isopropanol
* Stir overnight at room temperature, then process through 0.2 μm filter and store at 4 °C

*xi) Tissue IF Blocking Solution*

* Recipe (100 mL):
	+ 2 g BSA
	+ 5 mL FBS
	+ 5 mL Goat Serum
	+ 200 µL Triton-X-100
	+ 0.1 g Sodium Azide
	+ 200 mL 1X PBS

**Antibody Self-Conjugation**

*i) Sca-1 conjugation to APC (Derived from Biotium commercial kit protocol)*

Before commencing protocol, make sure to spin down all reagents to collect all powders/solutions to the bottom of the tube. Beware that some reagents (e.g. Linking Agent) are provided in very small quantities not visible to the naked eye.

1. Add 100 µL (100 µg) Sca-1 primary antibody to provided vial of Linking Agent. Pipette solution up and down 10 times to mix completely, then incubate the solution at room temperature for 30 mins.
2. Add the solution to the membrane of the spin column provided with the conjugation kit. Take care as to not touch the pipette tip to the membrane of the spin column. Then add 200 µL 1X PBS to the membrane.
3. Centrifuge the vial at 14,000 x g, 20 °C for 5 minutes to bind the linked antibody to the spin column membrane. Discard the flow-through in the tube.
4. Add 200 µL 1X PBS to the spin column and centrifuge again at 14,000 x g, 20 °C for 5 minutes. Discard the flow-through in the tube.
5. Resuspend the bound antibody to a concentration of 1 µg/µL by adding 100 µL of 1X PBS to the membrane. Gently pipet up and down 10 times over the surface of the membrane to recover the linked antibody.

NOTE: The linked antibody cannot be seen with the naked eye, so the recovery of antibody will not be visible.

1. Transfer the entire recovered antibody solution to the provided vial containing lyophilized APC powder. Gently but thoroughly pipette up and down and on the sides of the vial, as well as gently vortex and spin to completely mix the antibody with APC.
2. Incubate the conjugate at room temperature in the dark for 3-4 hours.
3. Add 200 µL of provided conjugate storage buffer, bringing the final antibody concentration to 0.33 µg/µL with a total volume of 300 µL. Aliquot and store at -20 °C.

*ii) ITGA7 conjugation to PE-Cy7 (Derived from Abcam commercial kit protocol)*

Before commencing protocol, make sure to incubate all reagents for at least 15 minutes to warm up to room temperature. Furthermore, gently vortex and spin down all powders/solutions to ensure collection at the bottom of the tube.

1. Pipet 60 µL of ITGA7 primary antibody (1 µg/µL) to a fresh 1.5 mL microcentrifuge tube. Add 6 µL of provided modifier reagent to the tube and mix gently by pipetting up and down 5-10 times.
2. Pipette modified antibody solution to the provided vial of lyophilized PE-Cy7 powder. Re-suspend solution by gently pipetting up and down once or twice, making sure to collect all of the powder off of the sides of the vial.
3. Incubate vial for 3 hours in the dark at room temperature.

NOTE: Incubations can be left overnight with no negative effects on conjugation efficiency.

1. Add 6 µL of provided quencher reagent to quench any un-bound free PE-Cy7 dye. Mix gently by pipetting up and down 3 times and incubate at room temperature in the dark for 30 mins.
2. Aliquot the conjugated antibody and store at 4 °C.

NOTE: Conjugated antibodies retain effectiveness for up to 3 months when stored at 4 °C. If storage at -20 °C is desired, add a cryoprotectant (e.g. 50% glycerol).