Supplemental Figure 1

- Proximal Esophagus
- Mid Esophagus
- Distal Esophagus
Figure 7: CD34+GFP+ cells have the capacity to contribute to esophageal epithelial restitution after induction of injury.  
a) CD34 positive cells (green) or CD34 negative (red) esophageal epithelial cells were cytokeratin positive (94.8 ± 1.66% or 91.24 ± 1.38 by FACS, not shown) and nuclei are stained with DAPI (blue).  
b) Comparison of selected markers (CD34, ABCG2, EphA3) in SP cells normalized to NSP cells by RT-PCR (*p<0.01; n=3 experiments).  
e) Comparison of selected markers (CD34, ABCG2, EphA3) in CD34+ cells normalized to CD34- cells by RT-PCR (*p<0.01; n=3 experiments).  
d,g,h) PBS (control) was injected in the submucosa after mucosal injury.  The epithelium reformed after 48 hours. There were no GFP positive cells (red) in PBS injected tissues. (g-40x, gh-100x).  
e, h, k) 3x10^4 CD34-GFP+ cells were injected into the submucosa after induction of mucosal injury. The epithelium reformed after 48 hours. There were few GFP positive cells (red) in the epithelium. (e-40x, hk-100x).  
f, i, l) 3x10^4 CD34+GFP+ cells were injected into the submucosa after induction of mucosal injury. The reformed epithelium was GFP+, consistent with the migration of stem cells and emergence of differentiated lineages. Some GFP+ cells remain in the submucosa. (f-40x, il-100x). In all panels, the bar represents 25 μm.

Supplemental Figure 1: Distribution of BrdU+, LRC in the esophageal epithelium from the proximal esophagus to the mid-esophagus to the distal esophagus. (n=5 mice). The number of total cells counted in each esophageal segment was 2000 per mouse.
Supplemental Figure 2: Bone marrow derived cells do not contribute to the esophageal epithelium after radiation induced injury.

Whole bone marrow cells were isolated from ROSA26-EGFP mice of FVB/N background and injected (tail-vein) into irradiated (12 Gray) recipient mice. Recipient mice were sacrificed after 6-7 months and tissues were harvested in OCT compound and processed for frozen sections. GFP positive cells were not detected in the esophageal epithelium or submucosa (a), but were detected in the colon (b) and the small intestinal Peyer Patches (c). Dashed line represents the basement membrane in (a). Dapi counterstain for nuclei is blue. Panels (a) and (b) are 200x, and panel (c) is 100x. Bar in all panels represents 25 μm.

Supplemental Figure 3

The tissues in Figure 7 were subjected to immunofluorescence with antibodies to GFP and CK4, revealing co-localization (yellow) of GFP+ (CD34+ derived) and CK4+ in the suprabasal cell compartment of the repaired esophagus after injury (a). Note CK4+ cells (b) and CK4+ cells (c). All panels are 400x and bar in all panels represents 25 μm.