**Supplemental Data**

## MATERIALS AND METHODS

### Western blotting

Total cell lysates were prepared, separated by electrophoresis and transferred to PVDF membranes. Membranes were blocked in TBS plus 5% BSA and 0.1% TWEEN for 1h, before incubating with anti-vimentin (Dako, Glostrup, Denmark), anti-alpha-smooth muscle actin (Dako), anti-fibroblast specific protein 1 (Abcam, Cambridge, MA) or anti-β-actin at 4$^{o}$C overnight. Antigen-antibody complexes were detected using secondary antibodies conjugated to HRP and visualized by enhanced chemiluminescence (GE Healthcare, Piscataway, NJ).

### Flow cytometry

Bone marrow was flushed from the tibia and femur of myeloma-bearing mice. Spleens from myeloma-bearing mice were homogenized in tissue culture media. Cell suspensions were filtered through a 70um filter and then analyzed for GFP using a 3 laser BD LSRII (Becton Dickinson, San Jose, CA).

### Fluorescence in situ hybridization

Paraffin-embedded tissue sections from C57Bl6 mice inoculated with ST2 BMSCs were hybridized with mouse IDetect™ Chr Y FISH Paint Probe (Cambio, Cambridge, UK), and counterstained with DAPI according to the manufacturer's instructions. Cells expressing the Y chromosome were scored blind to determine the proportion of positive cells within the bone marrow using MetaMorph (Molecular devices) computer software. 5 fields were assessed per tumor at x40 magnification.

### Immunocytochemistry

14M1 BMSCs were fixed in 4% formalin, incubated with anti-FSP-1 (Abcam) and secondary antibody according to manufacturer's instructions. Cells were counterstained with DAPI, and visualized by fluorescence microscopy.

**Immunohistochemistry**

Tissue sections were dewaxed in xylene, endogenous biotin-blocked (Dako, Glostrup, Denmark), and incubated in 1.5% normal rabbit serum (Vector Laboratories, Peterborough, UK) in 1× TBS (0.05 M Trizma Base, 0.9% NaCl, pH 7.6) for 30 min. Sections were incubated with goat anti-mouse Dkk1 antibody (R&D Systems, Minneapolis, MN, USA), goat IgG isotype control (Sigma Aldrich, St Louis, MO, USA), or normal rabbit serum, diluted 1:6.5 in 1× TBS for 2 h. Antibodies were removed by washing and incubated with biotinylated rabbit anti-goat antibody (Vector Laboratories) for 30 min before incubation with streptavidin-horseradish peroxidase (Vecotr Laboratories) diluted 1:500 in 1× TBS for 40 min. HRP was detected using DAB substrate (Vector Laboratories), and sections were counterstained with Harris's hematoxylin (VWR) before being mounted in DePeX (VWR).