**Supplemental Materials and Methods**

**In vitro *cord formation assay***

VEGF-driven and tumor-driven endothelial cell cord formation assays were performed as previously described (1-3). ADSCs (Zen-Bio, cat# ASC-F) were plated at 75,000 cells per well into 96 well HTS Transwell(Corning, cat# CLS3381) receiver plates (neuroblastoma-driven) or 50,000 cells per well into 96-well black poly-D lysine coated plates (VEGF-driven). All cells were plated in defined co-culture media [MCDB-131 media (Invitrogen, cat# 10372019) supplemented with L-ascorbic acid 2-phosphate, dexamethasone, tobramycin, insulin (all from Sigma-Aldrich), and cell prime r-transferrin AF (Millipore, cat# 9701)]. ADSCs were allowed to attach overnight; media was then removed and 6,000 (neuroblastoma-driven) or 5,000 (VEGF-driven) endothelial colony forming cells (ECFCs) (Lonza) per well were seeded on top of the ADSC feeder layer. For VEGF-driven cords, prexasertib treatment was carried out in both neo and established modes of cord formation. For neo cord formation, treatments of 10 ng/ml VEGF and a concentration curve of prexasertib occurred 4h following ECFC plating and continued for 96h. Treatments were diluted in defined co-culture media and added as 4x (VEGF) and 12x (prexasertib) concentrates. Cells were directly fixed for 10 min with 3.7% formaldehyde (Sigma Aldrich) followed by ice-cold 70% ethanol for 20 min at 25°C. Cells were rinsed once with PBS, blocked for 30 min with 1% BSA and immunostained for 1h with antiserum directed against CD31 (R&D Systems, cat# AF806) diluted to 1 μg/ml in 1% BSA. Cells were washed 3 times with PBS and incubated for 1h with 5 μg/ml donkey α-sheep-Alexa-488 (Invitrogen, cat# A-11015), α-Smooth Muscle Actin Cy3 conjugate (1:200, Sigma-Aldrich, cat# C6198), and 200 ng/ml Hoechst 33342 (Invitrogen, cat# H-21492) in 1% BSA, washed with PBS, then imaged using the cord formation and nuclei count (for viability) algorithms on the Cellomics® InsightNXT using the 4X and 10X objectives, respectively (Thermo Fisher Scientific). For established cord formation, VEGF was added at the same time and concentration as the neo cord formation plate but cords were allowed to form for 96h. At 96h, media was changed, VEGF was replenished and prexasertib was added as described above. Prexasertib treatment in established cord formation was incubated for 72h at which point fixation and staining was carried out as previously described. The neuroblastoma-driven cord formation assay, whichis a modification of the VEGF co-culture assay, was performed as previously describe for tumor-driven cord formation (3). Briefly, 2.5 x 104 tumor cells were plated in the upper chamber of a HTS Transwell 96-well plate (Corning) that contains a 0.4 micron filter and the ADSC/ECFC were co-cultured in the bottom receiver chambers. After 72h, the receiver plates were fixed with 4% paraformaldehyde and stained as described for the VEGF-driven assay.

*Enzyme-Linked Immunosorbent Assays (ELISAs) for VEGF ligands*

Human Quantikine Enzyme-Linked Immunosorbent Assay Kits were purchased from R&D Systems in order to detect VEGF (cat# DVE00), VEGF-C (cat# DVEC00), and VEGF-D (cat# DVED00) produced by neuroblastoma cell lines in co-culture conditions. Adipose-derived stem cells (ADSCs) were cultured in co-culture media for 24h. Condition media was collected and used to culture IMR-32, KELLY, and SH-SY5Y cells for 48h, wherein the media was collected a second time. Detection of the various VEGF ligands was performed according to the manufacturer’s instructions. Levels are reported as pg/mL and were normalized to the number of cells.

**Supplemental References**

1. Tate CM, Blosser W, Wyss L, Evans G, Xue Q, Pan Y, et al. LY2228820 dimesylate, a selective inhibitor of p38 mitogen-activated protein kinase, reduces angiogenic endothelial cord formation in vitro and in vivo. J Biol Chem 2013;288(9):6743-53.

2. Blosser W, Vakana E, Wyss LV, Swearingen ML, Stewart J, Stancato L, et al. A method to assess target gene involvement in angiogenesis in vitro and in vivo using lentiviral vectors expressing shRNA. PLoS One 2014;9(4):e96036.

3. Willard MD, Lajiness ME, Wulur IH, Feng B, Swearingen ML, Uhlik MT, et al. Somatic mutations in CCK2R alter receptor activity that promote oncogenic phenotypes. Mol Cancer Res 2012;10(6):739-49.