

**Supplemental Table 1. Pro-fibrotic signaling pathways predicted to be regulated by the 20 downregulated microRNAs in BOS.**

KEGG analysis	Adjusted p
Pathways in cancer	7.21e-46
MAPK signaling pathway	3.16e-31
Wnt signaling pathway	2.07e-29
Focal adhesion	2.87e-25
Regulation of actin cytoskeleton	2.17e-23
Axon guidance	2.72e-23
Endocytosis	1.32e-21
Insulin signaling pathway	7.90e-21
Neurotrophin signaling pathway	1.01e-18
Ubiquitin mediated proteolysis	2.00e-17
ErbB signaling pathway	3.65e-16
Melanogenesis	4.58e-16
Adherens junction	1.30e-15
Pancreatic cancer	2.03e-15
Renal cell carcinoma	2.03e-15
TGF-beta signaling pathway	3.66e-15
Chronic myeloid leukemia	8.54e-15
Prostate cancer	2.96e-14
Glioma	7.79e-14
Oocyte meiosis	1.17e-13
Colorectal cancer	1.10e-12
Tight junction	2.24e-12
Long-term potentiation	5.53e-12
Calcium signaling pathway	8.27e-12
Basal cell carcinoma	1.58e-11
Protein processing in endoplasmic reticulum	2.84e-11
Melanoma	4.95e-11
GnRH signaling pathway	5.45e-11
Non-small cell lung cancer	6.85e-11
Cell cycle	8.01e-11
Phosphatidylinositol signaling system	1.03e-10
Gastric acid secretion	1.36e-10
Hedgehog signaling pathway	1.56e-10
Small cell lung cancer	1.94e-10
Chemokine signaling pathway	2.75e-10
Metabolic pathways	3.64e-10
Fc gamma R-mediated phagocytosis	6.17e-10
Vascular smooth muscle contraction	6.32e-10
Cell adhesion molecules (CAMs)	6.32e-10
Endometrial cancer	1.14e-09
mTOR signaling pathway	1.14e-09
Progesterone-mediated oocyte maturation	1.17e-09
Gap junction	3.89e-09
T cell receptor signaling pathway	5.69e-09
Acute myeloid leukemia	8.53e-09
Cytokine-cytokine receptor interaction	9.97e-09

Osteoclast differentiation	9.97e-09
Hepatitis C	9.97e-09
p53 signaling pathway	1.22e-08
Chagas disease (American trypanosomiasis)	3.27e-08
Jak-STAT signaling pathway	5.31e-08
Long-term depression	1.16e-07
Adipocytokine signaling pathway	3.09e-07
SNARE interactions in vesicular transport	8.12e-07
Aldosterone-regulated sodium reabsorption	1.38e-06
Glycerophospholipid metabolism	1.66e-06
B cell receptor signaling pathway	1.97e-06
RIG-I-like receptor signaling pathway	2.99e-06
mRNA surveillance pathway	3.24e-06
ECM-receptor interaction	5.02e-06
Epithelial cell signaling in Helicobacter pylori infection	5.66e-06
Inositol phosphate metabolism	5.83e-06
Salivary secretion	1.13e-05
Shigellosis	1.67e-05
Fc epsilon RI signaling pathway	1.77e-05
Arrhythrogenic right ventricular cardiomyopathy (ARVC)	2.20e-05
Circadian rhythm - mammal	2.79e-05
VEGF signaling pathway	3.30e-05
Bacterial invasion of epithelial cells	3.31e-05
Bladder cancer	3.58e-05
Leukocyte transendothelial migration	4.01e-05
Toxoplasmosis	5.61e-05
Vasopressin-regulated water reabsorption	6.25e-05
Dorso-ventral axis formation	6.44e-05
Apoptosis	7.65e-05
Neuroactive ligand-receptor interaction	9.25e-05
Hypertrophic cardiomyopathy (HCM)	0.0001
Dilated cardiomyopathy	0.0001
RNA transport	0.0002
Pancreatic secretion	0.0002
N-Glycan biosynthesis	0.0002
Notch signaling pathway	0.0005
RNA degradation	0.0005
Thyroid cancer	0.0005
Type II diabetes mellitus	0.0007
Glycerolipid metabolism	0.0009

**Supplemental Table 2. Predicted signaling pathways regulated by miR-323a-3p.**

KEGG analysis	Adjusted p
Pathways in cancer	6.43e-08
Axon guidance	2.48e-05
Endocytosis	3.73e-05
Long-term potentiation	5.00e-05
TGF-beta signaling pathway	0.0002
Wnt signaling pathway	0.0002
Chronic myeloid leukemia	0.0003
Cell cycle	0.0003
Melanogenesis	0.0003
Pancreatic cancer	0.0003
Prostate cancer	0.0007
MAPK signaling pathway	0.0007
Colorectal cancer	0.0007
Gap junction	0.0007
GnRH signaling pathway	0.0011
Protein processing in endoplasmic reticulum	0.0011
Renal cell carcinoma	0.0011
Ubiquitin mediated proteolysis	0.0011
Regulation of actin cytoskeleton	0.0015
Adherens junction	0.0015
Oocyte meiosis	0.0018
mTOR signaling pathway	0.0018
Vascular smooth muscle contraction	0.0022
Neurotrophin signaling pathway	0.0037
Insulin signaling pathway	0.0059
Long-term depression	0.0059
Chagas disease (American trypanosomiasis)	0.0059
RIG-I-like receptor signaling pathway	0.0060
Glycosaminoglycan biosynthesis - heparan sulfate	0.0123
ErbB signaling pathway	0.0124
Progesterone-mediated oocyte maturation	0.0124
Non-small cell lung cancer	0.0124
Acute myeloid leukemia	0.0143
Rheumatoid arthritis	0.0143
Melanoma	0.0300
Focal adhesion	0.0300
Gastric acid secretion	0.0326
Antigen processing and presentation	0.0347
Aldosterone-regulated sodium reabsorption	0.0347
Bladder cancer	0.0347
Phosphatidylinositol signaling system	0.0353
Cytokine-cytokine receptor interaction	0.0363
Vasopressin-regulated water reabsorption	0.0364
mRNA surveillance pathway	0.0405
Small cell lung cancer	0.0427
Salivary secretion	0.0476
Glycerolipid metabolism	0.0476