Supplemental Material: Annu. Rev. Cancer Biol. 2018. 2:271–89
https://doi.org/10.1146/annurev-cancerbio-030617-050224
Lineage Plasticity in Cancer Progression and Treatment
Le Magnen, Shen, and Abate-Shen

Supplemental Table 1: Examples of genes that promote lineage plasticity and cancer		
Gene name	**Roles in homeostasis and cancer**	**Selected references**
Homeobox transcriptional regulatory genes		
CDX2	Expressed in intestinal epithelium and promotes its differentiation; dysregulation leads to colon cancer; principal driver of Barrett's metaplasia	(Strumpf et al. 2005, Colleypriest et al. 2010)
NKX2.1	Expressed in lung epithelium and promotes its differentiation; dysregulation leads to lung cancer; represses a gastric phenotype in lung epithelium	(Winslow et al. 2011, Snyder et al. 2013)
NKX3.1	Expressed in luminal prostatic epithelial cells; forced expression in non-prostatic cells leads to transdifferentiation to prostate; master regulator for reprogramming to prostate; dysregulation leads to prostate cancer	(Dutta et al. 2016, Talos et al. 2017, Abate-Shen et al. 2008)
PDX1	Expressed in endodermal cells that give rise to pancreas; forced expression in non-pancreatic cells leads to transdifferentiation to pancreatic cells; reprograms pancreatic exocrine cells to the endocrine cells; dysregulated in a stage-specific manner in pancreatic cancer	(Horb et al. 2003, Zhou et al. 2008, Roy et al. 2016)
PAX4	Expressed in pancreas during development and essential for specification of insulin-producing β cells; forced expression in pancreatic progenitor cells promotes their conversion to β cells	(Collombat et al. 2009, Sosa-Pineda et al. 1997)
OCT4	Expressed in pluripotent cells in the developing embryo; promotes pluripotency and reprogramming; ectopic expression leads to dysplasia	(Takahashi et al. 2007, Takahashi & Yamanaka 2006, Hochedlinger et al. 2005)
SOX transcriptional regulatory genes		
SOX2	Expressed in pluripotent cells in the developing embryo; promotes pluripotency and reprogramming; forced expression in lung promotes cancer; driver of lineage plasticity in prostate cancers arising from loss-of-function of *RB* and *TP53*, particularly in contexts of drug resistance	(Sarkar & Hochedlinger 2013, Takahashi et al. 2007, Takahashi & Yamanaka 2006, Ferone et al. 2016, Mu et al. 2017)

SOX9	Expressed in pancreatic progenitors during development; promotes pancreatic metaplasia; acts coordinately with *SOX2* to promote EMT in lung cancer	(Kopp et al. 2011, Lin et al. 2016)
SOX11	Expressed during neuronal development; promotes lineage plasticity in prostate cancers arising from loss-of-function of *PTEN* and *TP53*, particularly in contexts of drug resistance	(Bergsland et al. 2011, Zou et al. 2017)
Other transcriptional regulatory genes		
KlF4	A member of the Krüppel-like transcription factor family; promotes pluripotency and reprogramming; collaborates with *Kras* to promote cellular reprogramming in pancreatic cancer initiation	(Takahashi et al. 2007, Takahashi & Yamanaka 2006, Wei et al. 2016)
MITF	Member of the basic helix-loop-helix leucine zipper transcription factor family; required for survival and specification of melanocytes; driver of "phenotype switching" and drug resistance in metastatic melanoma	(Hoek et al. 2008, Konieczkowski et al. 2014)
AR	Essential regulator of prostate differentiation; master regulator for reprogramming to prostate; among the most frequently dysregulated gene in prostate cancer	(Talos et al. 2017, Watson et al. 2015)
Oncogenes		
MYC	Promotes pluripotency and reprogramming; collaborates with *Kras* to reprogram primary (non-tumorigenic) cells to metastatic cells	(Takahashi et al. 2007, Takahashi & Yamanaka 2006, Ischenko et al. 2013)
KRAS	Cooperates with *SOX9* in metaplasia of pancreatic adenocarcinoma; cooperates with *Myc* in reprogramming to metastatic cells	(Kopp et al. 2011, Ischenko et al. 2013)
Tumor suppressor genes		
TP53	Inhibits induced pluripotency and reprogramming; collaborates with *RB* and *PTEN* in promoting plasticity in several cancer types, including prostate cancer in contexts of drug resistance	(Marion et al. 2009, Utikal et al. 2009, Yi et al. 2012, Kawamura et al. 2009, Zou et al. 2017, Mu et al. 2017)

RB	Collaborates with *TP53* in conversion of adenocarcinoma to neuroendocrine differentiation in lung and prostate cancer, particularly in contexts of drug resistance	(Mu et al. 2017, Ku et al. 2017)
PTEN	Collaborates with *TP53* in transdifferentiation of adenocarcinoma to neuroendocrine differentiation in prostate cancer, particularly in contexts of drug resistance	(Zou et al. 2017)