

Supplementary information, Table S1 List of miRNA candidates involved in the initial screening, related to Figure 1B.

miRNA	Expression in normal- (NE) or dys- (DE) erythropoiesis	Function in erythropoiesis	Species	Target	References*
miR-23a	Upregulation in NE	Positive	Human, zebrafish	SHP2	(Zhu et al., 2013)
miR-433	Upregulation in DE (myeloproliferative neoplasms, MPNs)	Negative	human	GBP2	(Lin et al., 2013)
miR-191	Downregulation in NE	Negative * *: blocks erythroid enucleation	Mouse	Riok3 and Mxi1	(Zhang et al., 2011b)
miR-126/126*	N/A	Negative	Human, zebrafish	PTPN9	(Grabher et al., 2011; Huang et al., 2011)
miR-451	Upregulation in NE; Upregulation in DE (Polycythemia vera, PV)	Positive	Mouse, human, zebrafish	14-3-3zeta and GATA-2	(Bruchova-Votava et al., 2010; Bruchova et al., 2007; Pase et al., 2009; Patrick et al., 2010; Rasmussen et al., 2010; Svasti et al., 2010)
miR-223	Downregulation in NE	Negative	human	LMO2	(Felli et al., 2009; Yuan et al., 2009)
miR-150	Downregulation in NE; Downregulation in DE (Polycythemia vera, PV)	Negative	human	MYB	(Bruchova et al., 2007; Lu et al., 2008)
miR-124	Downregulation in DE (myelodysplastic syndrome, MDS)	Modulates self-renewal of HSCs	Human, mouse	N/A	(Dickstein et al., 2010; Vazquez et al., 2010)
miR-221/222	Downregulation in NE; Downregulation in DE (Polycythemia vera, PV)	Negative	human	KIT	(Bruchova et al., 2007; Felli et al., 2005)
miR-15a/16	Upregulation in NE; Upregulation in DE	Increase HbF production	human	MYB	(Bruchova et al., 2007; Choong et

	(Polycythemia vera, PV)				al., 2007; Guglielmelli et al., 2011; Sankaran et al., 2011)
miR-376a	Downregulation in NE	Negative	human	CDK2 and Ago2	(Wang et al., 2011)
miR-144	Upregulation in DE (homozygous sickle cell disease, HbSS)	Modulates oxidative stress tolerance	human	NRF2	(Sangokoya et al., 2010)
miR-103	Downregulation in NE	Negative	human	FOXJ2	(Yang et al., 2009)
miR-210	Upregulation in NE	Induces γ -globin gene expression	human	N/A	(Bianchi et al., 2009)
miR-128	Downregulation in AML than ALL	N/A	human		(Mi et al., 2007; Zhu et al., 2012)
Other important hematopoietic miRNAs					
miR-125b	Upregulation in AML; Downregulation in myeloid differentiation (MD)	Oncomir in AML; Negative in MD		Bak1, Stat3, c-Jun, Dicer1, St18, Klf13, Lin28A...	(Zhang et al., 2011a)
miR-17~9 2 cluster	Upregulation in AML; Downregulation in MD	Oncomir in AML; Negative in MD		Egr2, SQSTM1, E2F, BIM, PTEN...	(He et al., 2013)
miR-146a	Upregulation in MD	Positive in MD		IRAK1, TRAF6	(Taganov et al., 2006)
miR-155	Upregulation in MDS and AML	Oncomir in AML		PU.1, C/EBP- β , SHIP1	(Faraoni et al., 2012; Marcucci et al., 2013)

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