Supplemental Figure 1. Blood Group Phenotype of Cultured cord reticulocytes in comparison with erythrocytes from the same cord. Reagents and methods are shown in Griffiths et al (2012)(1). Agglutination strength recorded as - negative, w weak reaction, ++++ strong reaction. H results obtained with the lectin Ulex europaeus. Adult RBC and RBC from an ii adult included as controls.

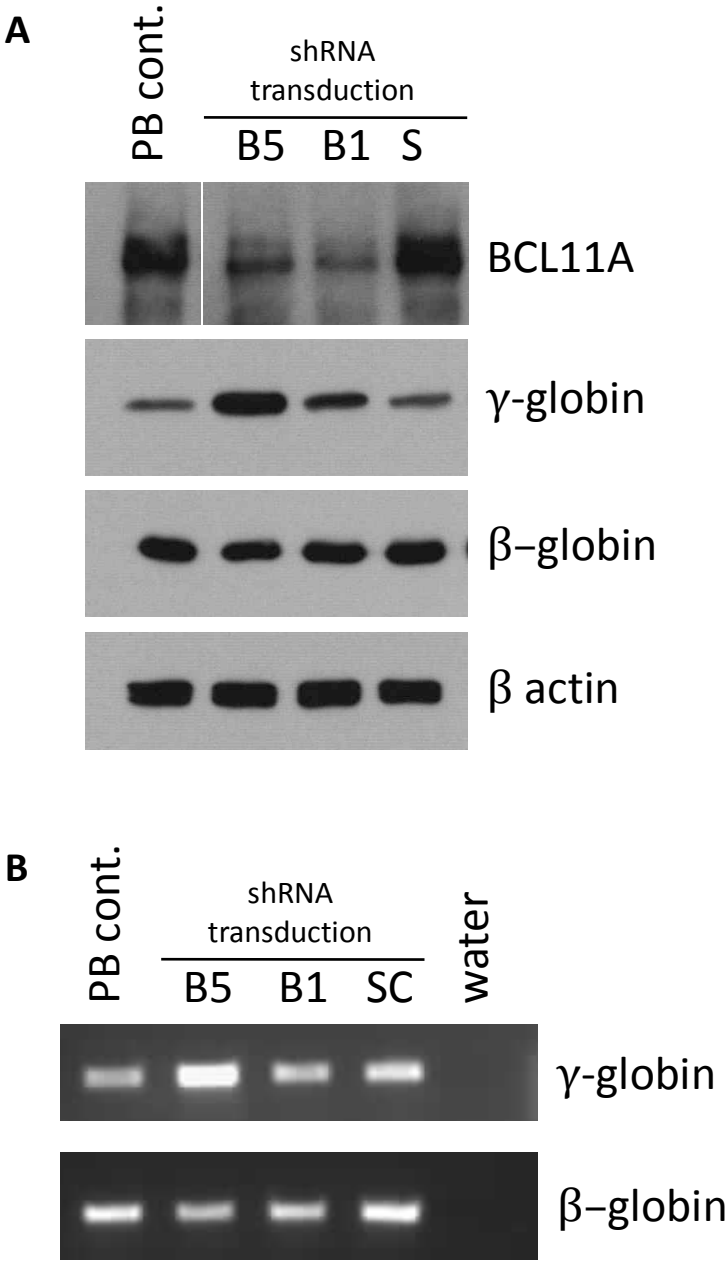
	ABO	MN Ss	P1	Rh c C D e E	Lu^aLu^b	K k Kp^b	Le^aLe^b	Fy^aFy^b	Jk^aJk^b	Co^b	Ch Rg
Cord rbc	O	+ - - +	++	+ + + + -	- w	- + +	- -	- +	+ +	+	w w
Cultured cells	O	+ - - +	++++	+ + + + -	- -	- + +	- -	- +	+ +	+	- -

Ok^a	JMH	Vel
+	+	+
+	+	+

	I i
Cord rbc	- +
Cultured cells	+ +++
Adult rbc	+ -
ii adult	- +++

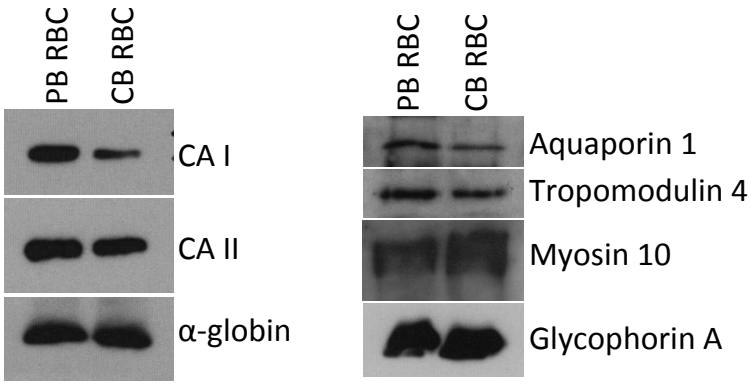
	P	P_1	P^k	LKE	H	I i
Cord rbc	+	++	-	+	++++	- +
Cultured cells	+	++++	+	-	++	+ +++

Supplemental Figure 2. Knockdown of BCL11A in adult erythroid cells. Adult peripheral blood (PB) $CD34^+$ cells in erythroid culture were transduced on day 3 with shRNAs to BCL11A (B1 and B5), or scrambled shRNA (SC) as control. Cells were isolated on day 8 in culture and analysed for levels of (A) BCL11A, γ- and β-globin by western blot probed with of BCL11A (Abcam [14B5]; ab19487), β–globin (37-8; sc21757) and γ-globin (51-7; sc21756) antisera (β-actin served as a protein loading control), and (B) PCR for levels γ- and β-globin expression. Untransduced cells (PB cont) served as a further control. Cells transduced with shRNA B5 and scrambled shRNA at day 8 in culture were lysed, proteins subjected to tryptic digest, labelled with TMTs and analysed by nanoLC-MS/MS.



Supplemental Figure 3. Comparing the level of selected proteins between adult and cord blood RBCs. (A) Western blot of whole cell lysate from adult (PB) and cord blood (CB) RBCs probed with antibodies to CAI (ab34978), CAII (ab6621), α-globin (D-16; sc31110), Aquaporin 1 (CHIP28), Tropomodulin 4 (ab67776), Non Muscle Myosin Heavy Chain 10 (Myosin IIB; ab684) and Glycophorin A (CVDP). α-globin and Glycophorin A served as protein loading controls. (B) Abundance of proteins in western blot shown in (A) expressed as ratio of level in adult (PB) to cord (CB) RBC.

A



B

	CAI	CAII	α-globin	Aquaporin 1	Tropomodulin 4	Myosin 10	Glycophorin A
PB/CB RBC	3.5	1.5	1	2	2	0.5	1

Supplemental Figure 4. Change in protein level between autologous reticulocyte and RBC cytosol and membrane fractions. Adult RBCs and peripheral blood $CD34^+$ cells were isolated from the same Leukocyte Reduction cones. Reticulocytes were differentiated *in vitro* from the $CD34^+$ cells. The RBCs and reticulocytes were separated into cytosolic and membrane fractions. (A) Western blots (3µg membrane fraction, 100µg cytosol fraction) were probed with antibodies to Glycophorin A (CVDP), Band 3 (BRIC170) and Ankyrin 1 (BRIC274). (B) Abundance of Glycophorin A, Band 3 and Ankyrin 1 in western blot shown in (A). Y-axis represents the difference in protein level between RBCs and reticulocytes