

Predicted GO Biological Process Function	P-Value	Z-Score
Hemoglobin metabolic process	1.34E-16	8.27
Erythrocyte development	1.15E-09	6.09
Heme metabolic process	1.19E-09	6.08
Heme biosynthetic process	1.46E-09	6.05
Erythrocyte differentiation	1.04E-07	5.32
Porphyrin-containing compound biosynthetic process	2.10E-07	5.19
Tetrapyrrole biosynthetic process	2.10E-07	5.19
Tetrapyrrole metabolic process	1.55E-06	4.81
Porphyrin-containing compound metabolic process	1.55E-06	4.81
Erythrocyte homeostasis	1.78E-06	4.78
Gas transport	3.99E-06	4.61
Iron-sulfur cluster assembly	5.75E-06	4.54
Metallo-sulfur cluster assembly	5.75E-06	4.54
Granulocyte differentiation	1.18E-05	4.38

Supplementary Table 2. *Gene co-expression network analysis.* Principal component analysis of 77,840 human, mouse and rat Affymetrix arrays reveals that expression levels of *SMIM1* are strongly correlated with genes involved in erythrocyte formation and hemoglobin synthesis and metabolism.