

Table S1. Glycosphingolipid compositional changes during differentiation.

	Cell specific GSL expression			
	GSL	Cell type	Reference	
Globo-series GSL	Gb3	Erythrocytes B cells Pluripotent Stem cells	(Klenk et al., 1951) (Mori et al., 2000) (Liang et al., 2010)	
	Gb4	Erythrocytes B cells Pluripotent Stem cells Definitive endoderm	(Hakomori 2008) (Mori et al., 2000) (Liang et al., 2011) (Liang et al., 2011)	
	Forssman antigen	Erythrocytes Pluripotent Stem cells	(Svensson et al., 2013) (Liang et al., 2010)	
	iGb3	Natura killer cells Dendritic cells	(Porubsky et al., 2012)	
	SSEA-3	Pluripotent Stem cells	(Liang et al., 2010)	
	Globo H	Epithelial tissue (lung, breast, prostate, stomach, pancreas and ovary) Pluripotent Stem cells Definitive endoderm	(Zhang et al., 1997) (Liang et al., 2010) (Liang et al., 2011)	
	SSEA-4	Pluripotent Stem cells Primordial germ line Mesenchymal stem cells (MSCs)	(Liang et al., 2010) (Kerr et al., 2008) (Heo et al., 2016)	
	Ganglio-series GSL	GM3	Ectoderm Pre-B cells Fibroblasts Adipocytes Intestine Chondrocytes Neurons	(Liang et al., 2011) (Wiels et al., 1991) (Kojima et al., 2015) (Vukelic et al., 2001) (Iwamori et al., 1984) (Iwamori et al., 1984) (Yu et al., 2012)
GM1		Ectoderm Neurons Erythrocytes Mesenchymal stem cells (MSCs) Hematopoietic stem cells (HSCs) T cells Fibroblasts Erythrocytes Hepatocytes	(Liang et al., 2011) (Yu et al., 2012) (Iwamori et al., 1984) (Kwak et al., 2006) (Yamazaki et al., 2007) (Moore et al., 2008) (Vukelic et al., 2001) (Xu et al., 2010) (Xu et al., 2010)	
fucosyl-GM1		Erythrocytes	(Iwamori et al., 1984)	
GD1		Erythrocytes Mesenchymal stem cells (MSCs) Sperm Hepatocytes Adipocytes	(Iwamori et al., 1984) (Bergante et al., 2014) (Iwamori et al., 1984) (Iwamori et al., 1984) (Iwamori et al., 1984)	
GD3		Ectoderm Neurons Chondrocytes	(Liang et al., 2011) (Yu et al., 2012) (David et al., 1993)	
GD2		Ectoderm Neurons Mesenchymal stem cells (MSCs)	(Liang et al., 2011) (Yu et al., 2012) (Kwak et al., 2006)	
GM4		Erythrocytes Kidney	(Siddiqui et al., 1973) (Iwamori et al., 1984)	
GT1 GQ1		Neurons	(Yu et al., 2012)	
Lacto-series GSL		Lea Leb	Erythrocytes	(Orntoft et al., 1991)
		LC3	Promyelocyte and myelocyte stages of eosinophilic and neutrophilic granulocytes Pluripotent Stem cells	(Buehler et al., 1985) (Liang et al., 2010)
	LC4	Promyelocyte and myelocyte stages of eosinophilic and neutrophilic granulocytes Pluripotent Stem cells Definitive endoderm	(Buehler et al., 1985) (Liang et al., 2010) (Liang et al., 2011)	
	nLC4	Promyelocyte and myelocyte stages of eosinophilic and neutrophilic granulocytes	(Buehler et al., 1985)	
	SSEA-1	Pluripotent Stem cells Primordial germ line	(Liang et al., 2010) (Kerr et al., 2008)	
	fucosyl-Lc4	Pluripotent Stem cells Definitive endoderm	(Liang et al., 2010) (Liang et al., 2011)	
Asialo-series GSL	asialo-GM1	T cells Promyelocyte and myelocyte stages of eosinophilic and neutrophilic granulocytes	(Moore et al., 2008) (Kimura et al., 1986)	
	asialo-GM2	Promyelocyte and myelocyte stages of eosinophilic and neutrophilic granulocytes	(Kimura et al., 1986)	
Sulfatides	SM4	Oligodendrocytes and Schwann cells	(Schaeren-Wiemers et al., 1995)	
Sphingolipids	Sphingomyelin	Oligodendrocytes and Schwann cells	(Schaeren-Wiemers et al., 1995)	
	GalCer	Oligodendrocytes and Schwann cells	(Schaeren-Wiemers et al., 1995)	
	Ceramide	Skin	(Feingold et al., 2007)	

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