

Supplemental References

Carey, B.W., Markoulaki, S., Beard, C.F., Hanna, J.H., and Jaenisch, R. (2010). Single-gene transgenic mouse strains for reprogramming adult somatic cells. *Nat Meth* 7, 56-59.

Ficz, G., Branco, M.R., Seisenberger, S., Santos, F., Krueger, F., Hore, T.A., Marques, C.J., Andrews, S., and Reik, W. (2011). Dynamic regulation of 5-hydroxymethylcytosine in mouse ES cells and during differentiation. *Nature* 473, 398-402.

Friso, S., Choi, S.W., Dolnikowski, G.G., and Selhub, J. (2002). A method to assess genomic DNA methylation using high-performance liquid chromatography/electrospray ionization mass spectrometry. *Anal Chem* 74, 4526-4531.

Gill, M.E., Hu, Y.C., Lin, Y., and Page, D.C. (2011). Licensing of gametogenesis, dependent on RNA binding protein DAZL, as a gateway to sexual differentiation of fetal germ cells. *Proc Natl Acad Sci U S A* 108, 7443-7448.

Hanna, J.H., Saha, K., Pando, B., van Zon, J., Lengner, C.J., Creighton, M.P., van Oudenaarden, A., and Jaenisch, R. (2009). Direct cell reprogramming is a stochastic process amenable to acceleration. *Nature* 462, 595-601.

Ito, S., D'Alessio, A.C., Taranova, O.V., Hong, K., Sowers, L.C., and Zhang, Y. (2010). Role of Tet proteins in 5mC to 5hmC conversion, ES-cell self-renewal and inner cell mass specification. *Nature* 466, 1129-1133.

Ventura, A., Meissner, A., Dillon, C.P., McManus, M., Sharp, P.A., Van Parijs, L., Jaenisch, R., and Jacks, T. (2004). Cre-lox-regulated conditional RNA interference from transgenes. *Proc Natl Acad Sci U S A* 101, 10380-10385.