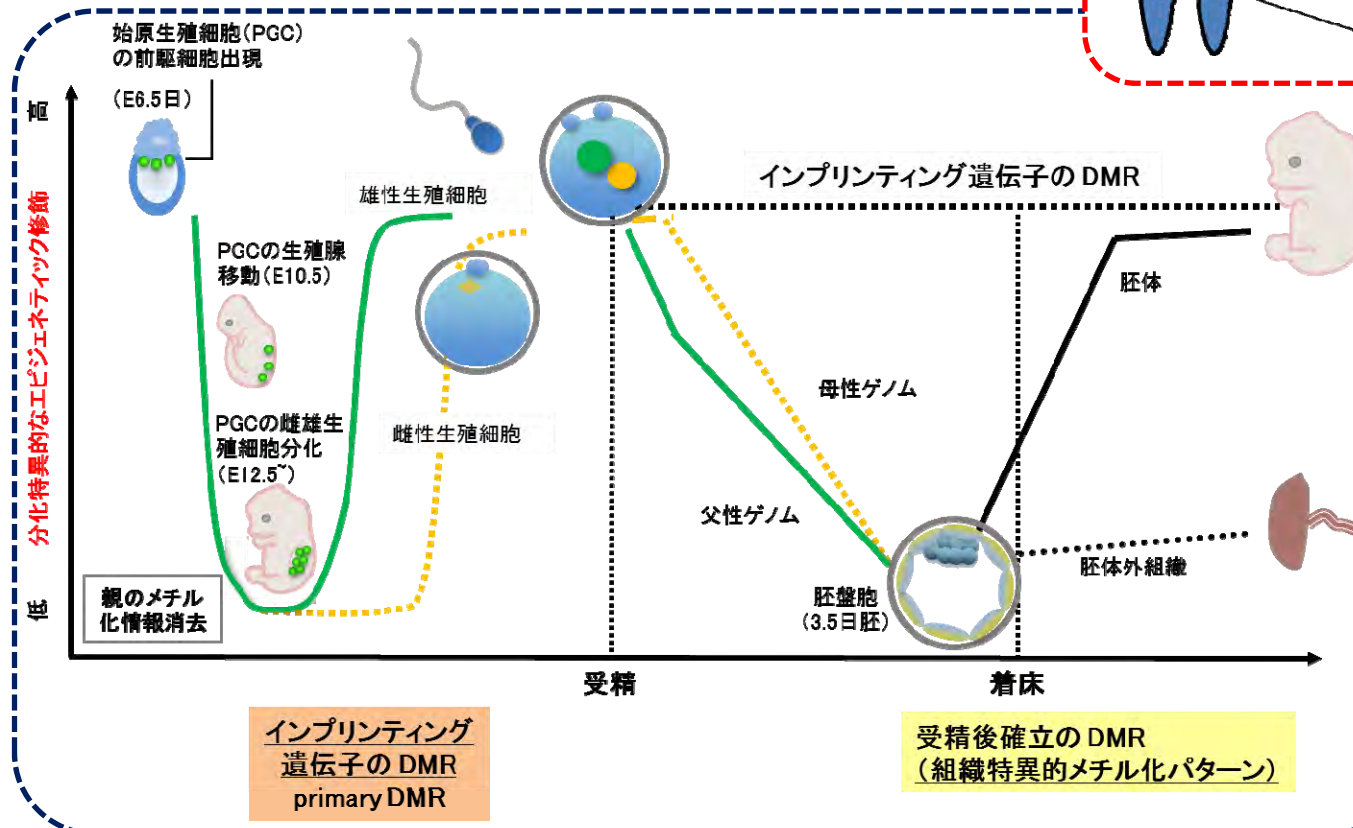
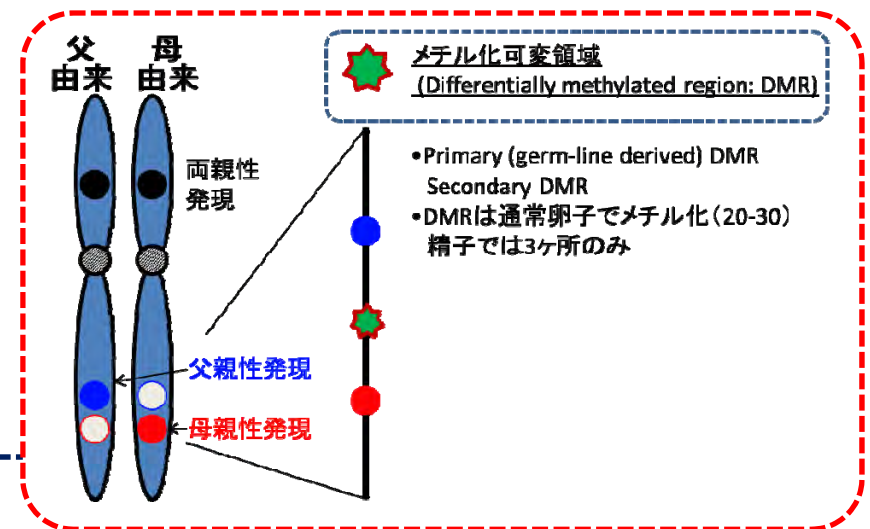


4. 発生・分化とDNAメチル化修飾の確立

- 1) 重要な「しるし」の一つにPrimary DMRがある。
- 2) Primary DMRは生殖細胞形成過程で付与される。
性差別の「しるし」付与 (刷込み、imprint)
- 3) 正常な発生には必要

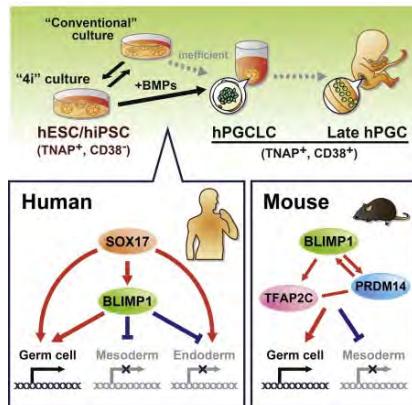


種としてみなほぼ同様のDNAを持つ

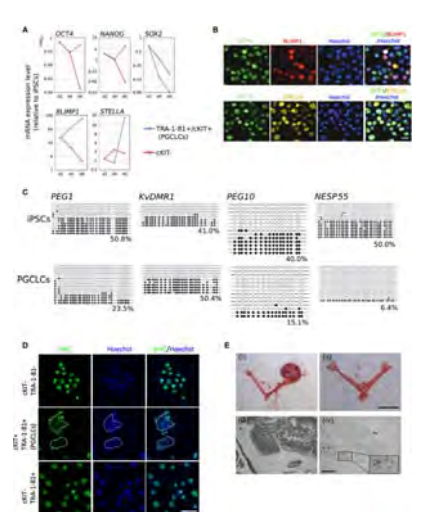
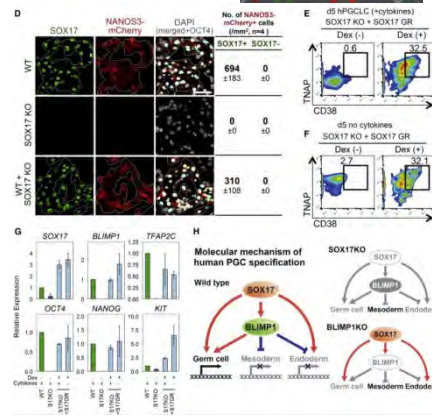
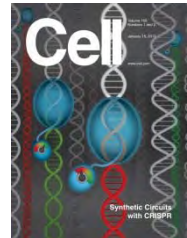
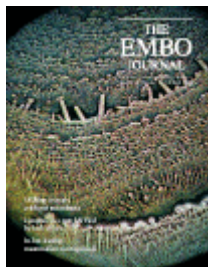
- ・とても重要な遺伝子
- ・組織特異的な遺伝子制御が必要
- ・性差で発現が異なる遺伝子 (全遺伝子の1%以下) 特別な制御が必要

5. ヒト始原生殖細胞様細胞の作製に成功

“SOX17 is a critical specifier of human primordial germ cell fate.” Irie N, Weinberger L, Tang WW, Kobayashi T, Viukov S, Manor YS, Dietmann S, Hanna JH, Surani MA. *Cell* 2015 Jan 15; 160(1-2): 253-268.



“Human primordial germ cell commitment in vitro associates with a unique PRDM14 expression profile.” Sugawa F, Schöler HR, et al. *EMBO J* 2015 Mar 6.

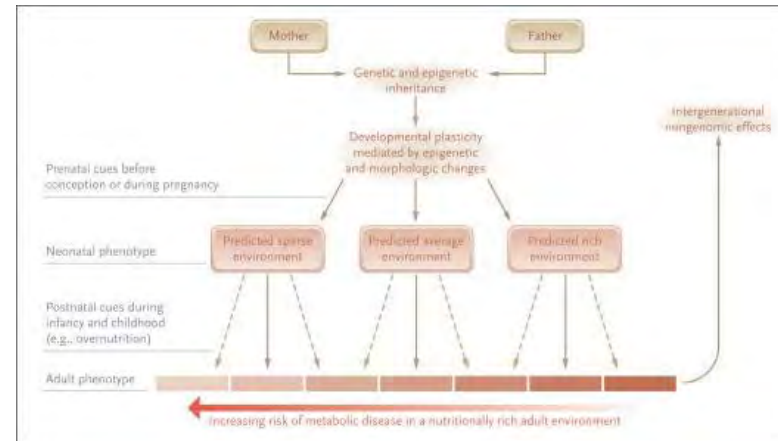


6. 世代を超えた影響についての研究

• Barker仮説からDOHaD学説へ

• the Developmental Origins of Health and Disease (DOHaD)

“Effect of In Utero and Early-Life Conditions on Adult Health and Disease” Gluckman PD, et al. *N Engl J Med* 2008; 359(1): 61–73.



“In utero undernourishment perturbs the adult sperm methylome and intergenerational metabolism” Radford EJ, et al. *Science* 2014; 345(6198).

