

Propositions (Stellingen)

Consequences of *Gata2* deficiency

1. *Gata2b* knockout zebrafish develop a lymphoid biased hematopoiesis and a block in neutrophil differentiation. (This thesis)
2. The re-directioning of differentiation in *Gata2b* knockout zebrafish is transcriptionally recognizable in Hematopoietic stem and progenitor cells (HSPCs). It is characterized by a reduced myeloid gene expression program and co-expression of antagonistic differentiation programs. (This thesis)
3. *Gata2b* haploinsufficiency in zebrafish causes transcriptionally hyperproliferative HSPCs and erythroid dysplasia. (This thesis)
4. Via aging and bone marrow transplantation of *Gata2* heterozygous mice it is possible to recapitulate elements of human GATA2 deficiency. (This thesis)
5. Zebrafish and mammalian hematopoiesis, despite different anatomical sites, share similarities in transcriptional regulation of HSPCs and lineage specification. (This thesis and Avagyan *et al.* 2016)
6. Blood cell production can be understood as a series of cell state transitions with the more well-established progenitor populations representing the more stable progenitor transitional states. (Adapted from H. Leighton Grimes)
7. Conserved gene-regulatory pathways coordinate the processes of aging to maintain cellular health. Although cells accumulate damage during the natural aging process, multiple proliferation and differentiation factors can accelerate the functional decline of these cells. (Adapted from Singh *et al.* 2020)
8. Without comprehension, reading is a frustrating, pointless exercise in word calling. (Texas Educational Agency, 2002)
9. Subtle influences can lead to critical consequences.
10. Eva's only fault has been the one of wanting to know more, to experiment and search with her own sources the laws of the Universe, of her own body and to refuse the teachings from "above". Eva, basically, represents the curiosity of science against the passive acceptance that belongs to faith. (Margherita Hack)
11. "Sopra la panca la capra campa, sotto la panca la capra crepa". (Italian tongue twister)
Above the bench the goat lives, under the bench the goat dies.

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