

Cover Page



Universiteit Leiden



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Title: Transcriptomic studies in human ageing and longevity

Issue Date: 2013-12-19

Stellingen behorend bij het proefschrift Transcriptomic studies in human ageing and longevity

1. Gene expression levels of *ASF1A*, *IL7R*, and *RPTOR* in whole blood are novel candidate biomarkers for healthy ageing (*this thesis*).
2. Despite the limitations in which blood reflects tissue specific age-related changes, transcriptomic parameters in blood form a highly informative source of biomarkers of healthy ageing (*this thesis*).
3. The significant contribution of *IL7R* gene expression to familial longevity and survival warrant functional studies of *IL7R* gene regulation in ageing (*this thesis*).
4. The change in T cell composition with age contributes to human longevity and is therefore a major confounder in interpreting gene expression data in blood (*this thesis*).
5. Network-based analyses retrieve robust results where single gene analyses do not provide consistent observations (*this thesis*).
6. Drugs that target the mTOR pathway could one day become widely used to slow ageing and reduce age-related pathologies in humans (*This thesis, Nature, vol 493, 2013, p338-345*).
7. Partial inhibition of mTORC1 and mTORC2, as caused by rapamycin, may be about as much mTOR inhibition as can be chronically tolerated (*Cell* 149, April 13, 2012, p274-293).
8. Cells are subject to gross manipulation during the process of creating cell lines and are kept under artificial conditions; it is therefore not certain that gene expression profiles generated on cell lines are an accurate representation of the natural gene expression state *in vivo* (*Nature Genetics, vol 39 nr 10, October 2007, p1208-1216*).
9. In ons biologisch systeem is niets voor niets (Passtoors, Langleven infokrant, 2009).
10. Chaos is een toestand die veel energie kost om te ordenen. Orde is een toestand die veel energie heeft gekost om te bereiken en nog meer energie kost om te handhaven. Een chaotisch bureau is derhalve een uiting van efficiency (*Ivo Henkens, 2008*).
11. Science feeds the mind, dancing feeds the body and soul. Together they support life.

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Leiden, 19 december 2013