

Jan H.J. Hoeijmakers

Awards and Honours (partial list):

- 'Harold Quintus Bosz' Prize (Utrecht, 1983, for the discovery of the molecular mechanism of antigenic variation in trypanosomes, PhD thesis)
- 'Snoo van t' Hoogerhuys' Prize (Utrecht, 1986, isolation of the first human DNA repair gene)
- The very prestigious 'Louis Jeantet' Prize for Medical Research in Europe for the entire work on DNA repair (Geneva, 1995)
- 'Spinoza' Prize, most recognized prize of the Dutch Science Organization (The Hague, 1999)
- 'Descartes-Huygens' Award for French-Dutch scientific collaborations (The Hague, 2000)
- 'Van Gogh' Prize from the Dutch Science Organization (2000)
- 'EC-Descartes' Award for European collaboration on DNA repair (Brussels, 2000)
- 'Josephine Nefkens Prize' for cancer research (First awardee, Rotterdam, 2001)
- *Seneca Medaille des Industrie-Clubs für Altensforschung Prize*, for pioneering research on the molecular basis of aging (First awardee, Düsseldorf, 2008)
- *ERC Advanced Grant **DamAge** – Multi-disciplinary Sciences* European Research Council (2 M€, 2008)
- *Cancer Research Prize of the Charles Rudolph Brupbacher Stiftung* for research on the role of genome stability in cancer and aging, shared with Bert Vogelstein (Zurich, 2011)
- *Academy Professor of the Royal Academy of Sciences of The Netherlands (KNAW)*, First Academy Professor new style in the broad domain of Beta sciences (Amsterdam, 2011)
- *Koningin Wilhelmina Research Prize* of the Dutch Cancer Society, for research on DNA damage response in prostate and urinary bladder cancer (2M€) (Leiden, 2011)
- *Mendel Medal* on the occasion of the 190th anniversary of Mendel's birth (Brno, 2012)
- Royal distinction *Knight in the Order of the Dutch Lion* for important scientific achievements in the area of cancer and aging research (2013).
- Consulted by the Nobel Committee for the Nobel Prize in Chemistry for DNA repair (2014-2015)
- *ERC PoC grant **DEMENTIA*** European Research Council (2015)
- *NVHG Galjaard Prize* of the Netherlands Society of Human Genetics (Leuven, 2016)
- Selected for the *Nobel-Forum* lecture at the Karolinska Institutet (Stockholm, 2016)
- Professor International Faculty, Cologne University (Cologne, Guest Professor, 2016 - ...)
- Honorary TEFAF Oncology Chair of the Maastricht University Medical Center 2017 (previous awardees: Harald zur Hausen, Aaron Chiechanover, Hans Clevers, Doug Hanahan)
- Recipient of the very prestigious *International Olav Thon Foundation* personal research Award 2017 (>0.5 M€, Oslo, for work on DNA damage, aging and neurodegeneration)
- For second time obtained a highly competitive *ERC Advanced grant **Dam2Age***, 2017 (2.2 M€)
- Knowledge Ambassador of the City of Rotterdam (Rotterdam, 2018)

In addition elected member of KNAW (section 'Medicine', dept. 'Physics', 2000), and EMBO (1995).

Key papers (selected from >430 publications in international scientific journals, H factor >100):

1. J.H.J. Hoeijmakers, A.C.C. Frasch, A. Bernardis, P. Borst and G.A.M. Cross.
Novel expression-linked copies of the genes for variant surface antigens in trypanosomes.
Nature 284: 78-80 (1980).
2. A. Westerveld, J.H.J. Hoeijmakers, M. van Duin, J. de Wit, H. Odijk, A. Pastink, R.D. Wood and D. Bootsma.
Molecular cloning of a human repair gene.
Nature 310: 425-429 (1985).
3. M. van Duin, J. de Wit, H. Odijk, A. Westerveld, A. Yasui, M. Koken, J.H.J. Hoeijmakers and D. Bootsma.
Molecular characterization of the human excision repair gene *ERCC-1*: cDNA cloning and amino acid homology with the yeast DNA repair gene RAD10.
Cell 44: 913-923 (1986).
4. J.H.J. Hoeijmakers.
Cryptic initiation sequence revealed.
Nature 343: 417-418 (1990).
5. G. Weeda, R.C.A. van Ham, W. Vermeulen, D. Bootsma, A.J. van der Eb and J.H.J. Hoeijmakers.
A presumed DNA helicase, encoded by the excision repair gene ERCC-3 is involved in the human repair disorders xeroderma pigmentosum and Cockayne's syndrome.
Cell 62: 777-791 (1990).
6. C. Troelstra, A. van Gool, J. de Wit, W. Vermeulen, D. Bootsma and J.H.J. Hoeijmakers.
ERCC6, a member of a subfamily of putative helicases is involved in Cockayne's syndrome and preferential repair of active genes.
Cell 71: 939-953 (1992).
7. D. Bootsma and J.H.J. Hoeijmakers.
DNA repair engagement with transcription (News and Views).
Nature 363: 114-115 (1993).
8. H. Roest, J. van Klaveren, J. de Wit, C.G. van Gurp, M.H.M. Koken, M. Vermey, J.H. van Roijen, J.T.M. Vreeburg, W.M. Baarends, D. Bootsma, J.A. Grootegoed and J.H.J. Hoeijmakers.
Inactivation of a ubiquitin-conjugating DNA repair enzyme in mice causes a defect in spermatogenesis associated with chromatin modification.
Cell 86: 799-810 (1996).
9. G.T.J. van der Horst, H. van Steeg, R.J.W. Berg, A.J. van Gool, J. de Wit, G. Weeda, H. Morreau, R.B. Beems, C.F. van Kreijl, F.R. de Gruijl, D. Bootsma and J.H.J. Hoeijmakers.
Defective transcription-coupled repair in Cockayne syndrome B mice is associated with skin cancer predisposition.
Cell 89: 425-435 (1997).
10. Sugasawa, K., Ng, J.M.Y., Masutani, C., van der Spek, P.J., Eker, A.P.M., Hanaoka, F., Bootsma D. and Hoeijmakers J.H.J.
Xeroderma pigmentosum group C complex is the initiator of global genome repair.
Molecular Cell 2, 223-232 (1998).
11. van der Horst, G.T.J., Muijtjens, M., Kobayashi, K., Takano, R., Kanno, S-I., Takao, M., de Wit, J., Verkerk, A., Eker, A.P.M., van Leenen, D., Buijs, R., Bootsma, D., Hoeijmakers, J.H.J., Yasui, A.
Mammalian blue-light receptor homologs CRY1 and CRY2 are essential for maintenance of the biological clock.
Nature 398, 627-630 (1999).
(see also 'News and Views' *Nature* 398, 557-558, and *Science* 284, 422-423, 1999).
12. Houtsmuller, A.B., Rademakers, S., Nigg, A.L., Hoogstraten, D., Hoeijmakers J.H.J., and Vermeulen W.
Action of DNA repair endonuclease ERCC1/XPF in living cells.
Science 284, 958-961 (1999).
13. Hoeijmakers, J.H.J.
Genome maintenance mechanisms for preventing cancer.
Nature 411, 366-374 (2001),

- (most cited paper in molec. sciences from Dutch scientist in 2000-2010).
14. Vermeulen, W., Rademakers, S., Jaspers, N.G.J., Appeldoorn, E., Raams, A., Klein, B., Kleijer, W., Kjærsgård, L. and Hoeijmakers, J.H.J.
A temperature-sensitive disorder in basal transcription and DNA repair in man.
Nature Gen. 27, 299-303 (2001). (see also *Bioassays 'Hot News'*, 23, 671-673).
 15. de Boer, J., Andressoo, J.O., de Wit, J., Huijmans, J., Beems, R.B., van Steeg, H., Weeda, G., van der Horst, G.T.J., van Leeuwen, W., Themmen, A.P.N., Meradji, M. and Hoeijmakers, J.H.J.
Premature aging in mice deficient in DNA repair and transcription.
Science (research article), 296, 1276-1279 (2002).
(see also *Comments in Science*, 296, 1250-1251, and in *DNA Repair* 2, 437-439).
 16. L.J. Niedernhofer, A.S.Lalai and J.H. Hoeijmakers.
Fanconi anemia (cross)linked to DNA repair.
Cell 7, 1191-8 (2005).
 17. Niedernhofer, L.J., Garinis, G.A., Raams, A., Lalai, S.A., Robinson, R.A., Appeldoorn, E., Odijk, H., Oostendorp, R., Ahmad, A., van Leeuwen, W., Theil, A., Vermeulen, W., van der Horst, G.T., Meinecke, P., Kleijer, W., Vijg, J., Jaspers, N.G.J., Hoeijmakers, J.H.J.
A new progeria syndrome reveals that genotoxic stress suppresses the somatotroph axis. *Nature* 444, 1038-1043 (2006, see also accompanying 'News and Views' *Nature* by Kirkwood).
 18. Hoeijmakers, J.H.J.
DNA damage, aging, and cancer.
NEJM 361, 1475-1485 (2009).
 19. Marteiijn, J.A., Lans, H., Vermeulen, W. and Hoeijmakers J.H.J.
Understanding nucleotide excision repair and its roles in cancer and ageing.
Nature Rev Mol Cell Biol. 15, 465-481 (2014).
 20. M. Tresini, D.O. Warmerdam, P. Kolovos, L. Snijder, M.G. Vrouwe, J.A.A. Demmers, W.F. van IJcken, F.G. Grosveld, R.H. Medema, J.H.J. Hoeijmakers, L.H.F. Mullenders, W. Vermeulen and J.A. Marteiijn.
The core spliceosome as a target and effector of non-canonical ATM signaling.
Nature 523, 53-58 (2015). doi: 10.1038/nature14512.
 21. H. Matsumura, Y. Mohri, N. Thanh Binh, H. Morinaga, M. Fukuda, M. Ito, S. Kurata, J.H.J. Hoeijmakers, and E.K. Nishimura.
Hair follicle aging is driven by transepidermal elimination of stem cells via Col17A1 proteolysis.
Science Feb 5;351(6273):aad4395. doi: 10.1126/science.aad4395. Epub 2016 Feb 4. PMID: 26912707 (see also Lei M, Chuong CM. STEM CELLS. Aging, alopecia, and stem cells. *Science*, 2016 Feb 5;351(6273):559-60. doi: 10.1126/science.aaf1635).
 22. Vermeij W.P., Dollé M.E.T., Reiling E., Jaarsma D., Payan-Gomez C, Bombardieri C.R., Wu H., Roks A.J.M., Botter S.M., van der Eerden B.C., Youssef S.A., Kuiper R.V., Nagarajah B., van Oostrom C.T., Brandt R.M.C., Barnhoorn S., Imholz S., Pennings J.L.A., de Bruin A., Gyenis Á., Pothof J, Vijg J, van Steeg H., and Hoeijmakers J.H.J.
Restricted diet delays accelerated aging and genomic stress in DNA repair deficient mice.
Nature 537, 427-431 (2016, see also accompanying *Nature 'News and Views'* of Oshima and Martin).
 23. M.P. Baar, R.M. Brandt, D.A. Putavet, J.D. Klein, K.W. Derks, B.R. Bourgeois, S. Stryeck, Y. Rijksen, H. van Willigenburg, D.A. Feijtel, I. van der Pluijm, J. Essers, W.A. van Cappellen, W.F. van IJcken, A.B. Houtsmuller, J. Pothof, R.W. de Bruin, T. Madl, J.H. Hoeijmakers, J. Campisi, P.L. de Keizer.
Targeted Apoptosis of Senescent Cells Restores Tissue Homeostasis in Response to Chemotoxicity and Aging.
Cell 169,132-147(2017) e16. doi: 10.1016/j.cell.2017.02.031.PMID: 28340339