

Curriculum Vitae René Bernards.

Education

1972 - 1976: B.Sc. University of Amsterdam, medical biology
1976 - 1980: M.Sc. University of Amsterdam (cum laude)
1980 - 1984: Ph.D. University of Leiden (cum laude)
Thesis title: Transformation and oncogenicity by human adenoviruses.
Alex van der Eb, thesis advisor.

Postdoctoral training

1985 - 1988 Postdoctoral fellow, Whitehead Institute for Biomedical Research, Cambridge, MA, USA. Robert Weinberg, advisor.

Positions held

1988 - 1994 Assistant Professor, Harvard University.
1992 - 2015 Head, Division of Molecular Carcinogenesis, Netherlands Cancer Institute, Amsterdam.
1994 - present Professor of Molecular Carcinogenesis Utrecht University (part time).
2003 - present Founder and Chief Scientific Officer, Agendia NV, Amsterdam, The Netherlands (part time).
2014 - 2015 Visiting scientist, Genentech Inc. South San Francisco, USA.
2015 – present Founder Qameleon Therapeutics BV (part time).
2015 – present Senior staff scientist, Netherlands Cancer Institute, Amsterdam.

Professional Societies

European Molecular Biology Organization (EMBO)
American Association for Cancer Research (AACR)
Royal Dutch Academy of Arts and Sciences (KNAW)

Honors and Awards

1985: Constantijn and Christiaan Huygens Fellowship, Netherlands Organization for Scientific Research.
1988: Edward Mallinckrodt Foundation award.
1989: Searle Scholarship award.
1992: Pionier Award, Netherlands Organization for Scientific Research.
2004: Josephine Nefkens award, Erasmus University, Rotterdam.
2005: 2005 Pezcoller Foundation-FECS Recognition for Contribution to Oncology.
2005: Member, Academia Europea.
2005: Spinoza award, Netherlands Organization for Scientific Research.
2005: Ernst W. Bertner Award for Cancer Research, M.D. Anderson Cancer Center.
2007: Member, Royal Netherlands Academy of Arts and Sciences.
2007: ESMO Lifetime Achievement Award in Translational Research in Breast Cancer.
2009 Fellow, European Academy of Cancer Sciences.
2011 Scrip Best Partnership Alliance Award for colorectal cancer collaboration with AstraZeneca and Agendia.
2012 Queen Wilhelmina Research Prize, Dutch Cancer Society.

2013 Academy Professor Prize, Royal Netherlands Academy of Arts and Sciences.

Committees, Advisory Boards and consultancies

1996 - 2003 Member, Scientific board of the Dutch Cancer Society.
 1996 - 2008 Member, Scientific Advisory Board, TopoTarget Ltd, UK.
 1999 - 2002 Consultant, Galapagos Genomics, Leiden, Netherlands.
 2002 – present Scientific Advisory Committee, Breakthrough Breast Cancer charity,
 London, UK.
 2004 - 2006 General Motors Cancer Research Foundation Awards Assembly.
 2005 - present Scientific Advisory Board, Gilde Healthcare fund.
 2009 - present AACR Laboratory Research Awards Selection Committee
 2009 - present Member International Scientific Advisory Board, Institut Gustav Roussy, Villejuif, France.
 2010 - present: Member, Steering group, Center for Personalized Cancer Treatment.
 2012 Chair, Evaluation of the Cancer program at Max Delbruck Center, Berlin, Germany
 2012 - present Scientific Advisory board Merus BV, Utrecht, The Netherlands.
 2012 Co-Chair, Program Committee for the 2013 Annual Meeting of the AACR.
 2012 - 2013 Chair, Pezcoller Foundation-AACR International Award for Cancer Research Selection Committee.
 2012 - present Member Scientific Advisory Board, SiRIC of the Institut Curie, Paris.
 2013 - 2016 Co-Chairperson of the 2013-2015 AACR Laboratory Research Awards Committee.
 2014 - present Member Scientific Committee Louis Jeantet Foundation.
 2014 - present Member AACR Nomination Committee.
 2014 – present Member AACR special conferences committee.
 2014 – present Member AACR publications committee.
 2015 – present Consulting, Genentech, South San Francisco, USA.
 2016- present Member, Scientific Advisory Board, Hartwig Medical Foundation.
 2017 – present Member, Cancer Research UK Grand Challenge Advisory Panel.

Editorial boards

2007 - 2014 BBA reviews on cancer, section editor
 2009 - present Molecular Cancer Research, editorial board member
 2010 - present Molecular Oncology, editorial board member
 2011 - present Cancer Discovery, research editor

Research Interests

Cancer genetics and cancer biology.

Selection of major invited lectures at international meetings (last five years)

2012 ISREC Distinguished Lectures in Cancer Research, Lausanne, Switzerland.
 2012 Stand Up To Cancer (SU2C) Summit meeting, Miami, USA.
 2012 EMBL conference “Omics and Personalised Health”, Heidelberg, FRG.
 2012 AACR Annual meeting Chicago, USA
 2012 European Multidisciplinary Colorectal Cancer Congress, Prague, Czech Republic.

- 2012 AACR “Molecularly Targeted Therapies: Mechanisms of Resistance, San Diego, USA.
- 2012 EMBO Conference “Cellular signaling & Molecular Medicine. Dubrovnik.
- 2012 NF Conference, New Orleans, USA (keynote lecture).
- 2012 Cell conference “Hallmarks of cancer”, San Francisco, USA.
- 2012 37th ESMO Congress, Vienna, Austria.
- 2012 The 24th EORTC-NCI-AACR Symposium on “Molecular Targets and Cancer Therapeutics”, Dublin, Ireland.
- 2013 Irish Association for Cancer Research, Dublin, Ireland (Keynote lecture).
- 2013 The Tucson Symposium. Tucson Arizona. (Keynote lecture).
- 2013 AACR Annual meeting Washington DC. (Plenary lecture).
- 2013 Klaus Tschira Foundation Lectureship at DKFZ, Heidelberg, Germany.
- 2013 EACR special conference “Cancer Genomics”. Cambridge UK.
- 2013 Usha Mahajani Symposium, Salk Institute La Jolla USA (Keynote lecture).
- 2013 Welcome Trust conference “Cancer Pharmacogenomics and Targeted Therapies, Hinxton, UK.
- 2013 ECCO 17, Amsterdam, The Netherlands.
- 2013 EMBO meeting, Amsterdam, The Netherlands.
- 2013 ESMO-ECCO meeting, Amsterdam, The Netherlands
- 2013 Anderson Cancer Center Lecture, Rockefeller University, New York, USA.
- 2013 AACR-NCI-EORTC Molecular Targets and Cancer Therapeutics, Boston, USA.
- 2013 Frontiers in Cancer Science 2013. Singapore (Keynote lecture).
- 2014 2nd St.Gallen EORTC Gastrointestinal Cancer Conference, St.Gallen, Switzerland.
- 2014 Genes and Cancer, Cambridge, UK.
- 2014 AACR annual meeting San Diego (plenary lecture).
- 2014 Tumour Microenvironment and Signalling, EMBL, Heidelberg, Germany.
- 2014 Frontiers in translational cancer research, Helsinki, Finland.
- 2014 26th Perzcoller symposium, Trento, Italy.
- 2014 WIN symposium, Paris, France.
- 2014 ESMO conference Madrid, Spain (keynote lecture).
- 2014 26th EORTC-NCI-AACR symposium “Molecular Targets and Cancer Therapeutics, Barcelona, Spain (keynote lecture).
- 2014 Novartis Scientific Retreat, Lisbon, Portugal (keynote lecture).
- 2014 San Antonio Breast Cancer Symposium, San Antonio, TX, USA.
- 2015 AACR symposium “Translation of the cancer Genome”, San Francisco, USA.
- 2015 Tucson symposium on Molecular diagnostics, Tucson AZ, USA
- 2015 Stanford University Cancer Biology lecture series, Palo Alto, USA.
- 2015 Cancer seminar series, Duke University, Durham USA.
- 2015 AACR annual meeting, Philadelphia, USA.
- 2015 Sokolov lecture, UCSF, San Francisco, USA.
- 2015 ECCO-ESMO conference Vienna, Austria.
- 2015 Yonsei symposium Seoul, Korea.
- 2016 Tenth AACR-JCA Joint Conference, Maui, USA.
- 2016 European Breast Cancer Conference (EBCC), Amsterdam (keynote lecture).
- 2016 Personalized cancer care, Oslo, Norway.
- 2016 EMBO conference “Cellular signalling an Cancer therapy” Cavtat, Croatia.
- 2016 SIBBM conference “From single cell analysis to precision medicine”. Napels, Italy.
- 2016 ISREC symposium “Horizons of cancer biology and therapy” Lausanne, Switzerland.
- 2016 MDAnderson symposium “Cancer evolution: Mechanisms of vulnerability and resistance” Houston USA (keynote lecture).

- 2017 Opportunities and challenges of exploiting synthetic lethality in cancer. San Diego, USA.
- 2017 ECCO 2017, Amsterdam
- 2017 19th AEK congress, Heidelberg, FRG.
- 2017 PACRI Cancer Conference, Paris, France.
- 2017 AACR annual conference, Washington, USA
- 2017 IMPAKT, Brussels, Belgium
- 2017 ICSA, Paris, France
- 2017 EACR, Florence Italy
- 2017 WIN symposium, Paris, France.
- 2017 EACR, Cambridge, UK.
- 2017 Gordon Research Conference, Newry, USA.
- 2017 ESMO, Madrid, Spain
- 2017 Basel Life, Basel, Switzerland

Meetings Organized

- 2000 “DNA Microarray Technology in Biomedical Research”, Amsterdam, The Netherlands.
- 2001 “Cancer and the Cell Cycle”, Amsterdam, The Netherlands.
- 2004 “Functional genomics”, Amsterdam, The Netherlands.
- 2005 Gordon Research Conference on “Cancer, Models and Mechanisms”, Smithfield RI, USA (vice-chair).
- 2005 96th AACR annual conference Anaheim, USA, workshop on RNAi.
- 2006 Keystone conference “signaling networks”, Vancouver, Canada.
- 2006 Gordon Research Conference on “Cancer, Models and Mechanisms”, Smithfield RI, USA (chair).
- 2007 “The role of non-coding RNAs in Cancer”, AACR special conference, Cambridge, USA.
- 2009 37th congress of the international society of oncology and biomarkers, Amsterdam, the Netherlands.
- 2009 ECCO15, Berlin, scientific program director.
- 2010 101st AACR Annual conference Washington, Program committee member
- 2010 22nd Pezcoller Symposium “RNA Biology and Cancer”, Trento, Italy.
- 2011 2011 Annual meeting of AACR, Orlando, Florida, organized Major symposium.
- 2011 2nd AACR International Conference on Frontiers in Basic Cancer Research, San Francisco, USA (co-chair).
- 2012 The 24th EORTC-NCI-AACR Symposium on “Molecular Targets and Cancer Therapeutics”, Dublin, Ireland (Plenary session co-organizer).
- 2013 2013 AACR annual meeting, Washington DC, USA. Co-chair program committee.
- 2013 CGC/CBG symposium “Translational cancer genomics”, Amsterdam, the Netherlands.
- 2013 Wellcome trust conference “Cancer Pharmacogenomics and Targeted Therapies”, Cambridge UK.
- 2014 AACR, Annual meeting, San Diego. CA. Organized Major symposium.
- 2014 Wellcome trust conference “Cancer Pharmacogenomics and Targeted Therapies”, Cambridge UK.
- 2014 EMSO, Madrid. Member scientific program committee.
- 2016 Tenth AACR-JCA Joint Conference, Maui, USA.
- 2017 AACR special conference on synthetic lethality, San Diego, USA.
- 2017 AACR annual meeting, educational session on senescence, Washington USA.

Present laboratory staff.

Katrien Berns PhD
Diede Brunen MSc

Associate staff scientist
Post-doc

Rodrigo Leite D'Oliveira PhD	Post-doc
Sara Mainardi PhD	Post-doc
Cun Wang PhD	Post-doc
Zheng Xue PhD	Post-doc
Fleur Jochems	Graduate Student
Josephine Kahn MSc	Graduate Student
Joao Neto MSc	Graduate Student
Ziva Pogacar MSc	Graduate Student
Antonio Sanchez MSc	Graduate Student
Tonci Sustic MSc	Graduate Student
Liqin Wang MSc	Graduate Student
Astrid Bosma	Technical staff
Marielle Hijmans MSc	Technical staff
Annemiek Gennissen	Technical staff

Past Ph.D. students Bernards laboratory

Roderick Beijersbergen, 1995
Currently staff scientist at the Netherlands Cancer Institute.

Guus Hateboer, 1995
Currently in patent law, The Netherlands.

Mathijs Voorhoeve, 1999
Currently assistant professor at Duke-NUS, Singapore.

Katrien Berns, 2000
Currently staff scientist at the Netherlands Cancer Institute

Hans Masselink, 2001
Currently in patent law at Novartis after acquiring MBA

Thijn Brummelkamp, 2003
Staff scientist at Netherlands Cancer Institute.

Sebastian Nijman, 2005
Currently Principal Investigator in Oxford UK.

Menno Creyghton, 2006
Currently junior faculty at Hubrecht Institute, Utrecht.

Roderik Kortlever, 2008
Currently post doc at University of Cambridge, UK

Mirjam Epping, 2008
Currently a medical student at Utrecht University

Jasper Mullenders, 2009
Currently post doc at New York University

Ernst Geutjes, 2011
Currently technology scout at TNO, Delft

Guus Heynen, 2015
Currently post doc at MDC, Berlin FRG.

Anirudh Prahallad, 2015
Currently a Post doc at Novartis, Basel.

Floris Groenendijk, 2015
Currently in training to become pathologist, ErasmusMC Rotterdam.

Chong Sun 2015
Currently a post doc at NKI, Amsterdam.

Past post docs Bernards laboratory.

Laura van 't Veer
Currently Professor at University of California at San Francisco and director of the breast cancer program.

Ron Kerkhoven

Currently head, Genomics Core Facility, The Netherlands Cancer Institute

Marc Billaud

Currently, staff scientist International Agency on Cancer, Lyon France.

Nancy Walworth

Currently Professor, Rutgers Medical School, Piscataway, New Jersey, USA.

Renate Zwijsen,

Currently staff scientist, Nutricia Research, The Netherlands.

Daniel Peeper

Currently Professor of Functional oncogenomics, Free University, Amsterdam and staff scientist, The Netherlands Cancer Institute.

Blanca Scheijen

Currently junior faculty, Nijmegen University, The Netherlands.

Liming Wang

Currently, head of urology unit, Changzheng hospital, Shanghai, China.

Michael Edel

Currently Group Leader Stem Cell Technology, The University of Barcelona, Spain.

Reuven Agami

Currently professor of MicroRNA and pathogenesis at Erasmus University Rotterdam and staff scientist, The Netherlands Cancer Institute.

Pieter Eichhorn

Currently Assistant Professor, NUS, Singapore.

Linda Smit

Currently staff scientist, Free University Amsterdam

Rianne Oosterkamp

Currently Medical Oncologist MCHaaglanden, The Netherlands.

Michael Holzel

Currently Staff scientist, Department of Internal Medicine, Center of Integrated Oncology Köln–Bonn, Germany.

Michiel van der Heijden

Currently medical oncologist and staff scientist, NKI-AVL Amsterdam.

Sidong Huang

Currently, Assistant Professor. McGill University Montreal, Canada.

Loredana Vecchione

Currently, medical oncologist, Charite, Berlin, Germany

Patent filings

- [1]. "Recombinant pox virus for immunization with tumor-associated antigens. US, granted.
Granted US, 6699475
- [2] "Transcription factor E2F-4." filed 15th Nov. 1994
US granted, US6045999.
- [3] "Transcription factor E2F-5." filed 14th Feb. 1995.
US granted US20030022260A1. Australia granted
- [4] "Adenovirus E1A-associated protein BS69, inhibitor of E1A transactivation" filed 14th Jun.
1995.
US granted US5985283.
- [5] "Interaction of cyclin D1 and the estrogen receptor and its use in assays" filed 19th Apr.
1996.
US granted US6033843. Europe granted.

- [6] "E2F ubiquitination domain and assays for inhibition and enhances of E2F ubiquitination." filed 23rd Aug. 1996. US granted US6368809.
- [7] "Interaction between cyclin D1 and steroid receptor coactivators and uses thereof in assays." filed 12th Feb. 1998. US granted: US20020177177A1.
- [8] "Assays for cell cycle modulators based on the modulation of cyclin D1 degradation in response to ionising radiation." filed 12th May 2000. CA2409717AA.
- [9] "Assays for modulators of the cell cycle." (DRIL-1) filed 18th Jan. 2001.
- [10] "The role of BCL6 in immortalization and senescence". GB0206086-1. Filed by CRT, January 2002.
- [11]. "Adenoviral library assay assay for E2F regulatory methods and compositions for screening compounds". US20030166167A1. Filed, April 2001.
- [12]. "Diagnosis and Prognosis of breast cancer patients", granted US patent 7,514,209
- [13] METHODS OF ASSIGNING TREATMENT TO BREAST CANCER PATIENTS. US patent (US 7,171,311).
- [13] "RNA interference" WO 03056012, US granted.
- [14]. "Therapeutic methods" GB 0301124.4, covers a number of DUB enzymes, filed 17/1/03 by Prolifix/Topotarget, Ltd.
- [15] "New use for cancer antigen". GB0401876.8 Filed, 2004.
- [16] "Involvement of lipid kinase, and signal transduction pathway comprising said lipid kinase, in resistance to HER2-targeting therapy". Filed April 2007.
- [17]. "Methods and means for predicting resistance to anti-cancer treatment". Filed March 2013.
- [18]. "Compositions for cancer treatment". Filed May 19, 2014.
- [19] Predicting responses to tamoxifen in breast cancer, Filed December 2013.
- [20]. "Methods and means for subtyping invasive lobular breast cancer
Filing: 17 March 2015. Application number: EP15159513.9
- [21]. "Treatment of drug resistant melanoma with histone deacetylase inhibitors". Filing: October 1, 2015. Application number N2015539.
- [22]. "Combination therapy - combined MAP2K4/MAP3K1 and MEK/ERK inhibition". May 19, 2017. PCT/NL2017/050319.
- [23]. "Treatment of senescent cancer cells", March 31, 2017.

Active grant support.

“Prospective Use of DNA-guided Personalized Cancer Treatment”. PIs: E. Voest and R. Bernards. Stand Up To Cancer International Translational Cancer Research Grant. The goal of the project is to identify new DNA-guided personalized cancer treatment approaches. Annual budget EUR 300,000.

“Finding genetic dependencies in cancer: the missing link in personalized medicine”, KWO grant Dutch Cancer Society. Period: 2013-2018. The goal is to identify novel and effective drug combinations in cancer through synthetic lethality screens. Annual budget EUR 400,00

“NWO Gravitation award. Period 2013-2023. The goal is to develop personalized cancer therapies based on innovative cancer models. Annual budget EUR 120,000.

Academy professorship prize. Period: 2014-2019. PI: R. Bernards. KNAW. Annual budget EUR 200,000.

“MoTriColor”, Molecularly guided trials with specific treatment strategies in patients with advanced newly molecular defined subtypes of colorectal cancer. PI. Josep Tabernero. EU horizon 2020. Goal is to perform clinical trials based on patient stratification by gene expression profiling. Annual Budget Bernards lab EUR 75,000.

StandUpToCancer Phil Sharp Innovation award. PIs: R. Bernards and S. Hu-Lieskovan. Goal is to find biomarkers of response to immune-oncology drugs. Annual Budget Bernards Lab: EUR 50,000.

Publication statistics (August 2017, source, Scopus):

Total number of publications listed (Scopus):	252
Total citations:	37,687
H-index:	74

Most cited publications (top 10).

Title	# of citations
1. Gene expression profiling predicts clinical outcome of breast cancer Nature 415 , 530-536 (2002).	6197
2. A system for stable expression of short interfering RNAs in mammalian cells. Science 296 , 550-553 (2002). 4300	
3. A gene-expression signature as a predictor of survival in breast cancer. New Engl J Med 347 , 1999-2009 (2002).	3666
4. A human DNA segment with properties of the gene that predisposes to retinoblastoma and osteosarcoma. Nature 323 , 643-646 (1986).	1859
5. Stable suppression of tumorigenicity by virus-mediated RNA interference. Cancer Cell 2 , 243-247 (2002).	954
6. A Functional Genetic Approach Identifies the PI3K Pathway as a Major Determinant of Trastuzumab Resistance in Breast Cancer Cancer Cell 12 , 395-402 (2007).	951
7. A Genomic and Functional Inventory of Deubiquitinating Enzymes. Cell, 123 , 773-786 (2005).	898
8. A large-scale RNAi screen in human cells identifies new components of the p53 pathway. Nature, 428 , 431-437 (2004).	835
9. Unresponsiveness to BRAF(V600E) inhibition of colon cancer through feedback activation of EGFR. Nature 483 , 100-103. (2012).	780
10. Loss of the cylindromatosis tumour suppressor inhibits apoptosis by activating NF-kB. Nature, 424 , 797-801 (2003).	671

Bibliography R. Bernards

Original (peer-reviewed) articles:

1. Bernards, R., Little, P.F.R., Annison, F., Williamson, R., and Flavell, R.A. (1979). Structure of the human G_{γ} - A_{γ} - δ - β globin locus. *Proc. Natl. Acad. Sci. USA* **76**, 4827-4831.
2. Bernards, R., Kooter, J.M., and Flavell, R.A. (1979). Physical mapping of the globin gene deletion in $(\delta\beta)^0$ -thalassaemia. *Gene* **6**, 265-280.
3. Flavell, R.A., Bernards, R., Kooter, J.M., de Boer, E., Little, P.F.R., Annison, G., and Williamson, R. (1979). Structure of the human β -globin gene in β -thalassaemia. *Nucleic Acids Res.* **6**, 2749-2760.
4. Bernards, R., and Flavell, R.A. (1980). Physical mapping of the globin gene deletion in hereditary persistence of foetal haemoglobin (HPFH). *Nucleic Acids Res.* **8**, 1521-1534.
5. Bos, J.L., Polder, L.J., Bernards, R., Schrier, P.I., Van den Elsen, P.J., Van der Eb, A.J., and Van Ormondt, H. (1980). The 2.2 kb Elb mRNA of human Ad12 and Ad5 codes for two tumor antigens starting at different AUG triplets. *Cell* **27**, 121-131.
6. Bernards, R., Houweling, A., Schrier, P.I., Bos, J.L., and Van der Eb, A.J. (1982). Characterization of cells transformed by Ad5/Ad12 hybrid early region 1 plasmids. *Virology* **120**, 422-432.
7. Bernards, R., Schrier, P.I., Bos, J.L., and Van der Eb, A.J. (1983). Role of adenovirus types 5 and 12 early region 1b tumor antigens in oncogenic transformation. *Virology* **127**, 45-53.
8. Schrier, P.I., Bernards, R., Vaessen, R.T.M.J., Houweling, A., and Van der Eb, A.J. (1983). Expression of class I histocompatibility antigens switched off by highly oncogenic adenovirus 12 in transformed rat cells. *Nature* **305**, 771-775.
9. Bernards, R., Schrier, P.I., Houweling, A., Bos, J.L., Van der Eb, A.J., Zijlstra, M., and Melief, C.J.M. (1983). Tumorigenicity of cells transformed by adenovirus type 12 by evasion of T-cell immunity. *Nature* **305**, 776-779.
10. Bernards, R., Vaessen, M.J., Van der Eb, A.J., and Sussenbach, J. (1983). Construction and characterization of an adenovirus type 5/adenovirus type 12 recombinant virus. *Virology* **131**, 30-38.
11. Bos, J.L., Jochemsen, A.G., Bernards, R., Schrier, P.I., van Ormondt, H., and Van der Eb, A.J. (1983). Deletion mutants of region Ela of Ad12 El plasmids: Effect on oncogenic transformation. *Virology* **129**, 393-400.
12. Bernards, R., de Leeuw, M.G.W., Vaessen, M.J., Houweling, A., and Van der Eb, A.J. (1984). Oncogenicity by adenovirus is not determined by the transforming region only. *J. Virol.* **50**, 847-853.
13. Bernards, R., de Leeuw, M.G.W., Houweling, A., and Van der Eb, A.J. (1986). Role of the adenovirus early region 1b tumor antigens in transformation and lytic infection. *Virology* **150**, 126-139.

14. Jochemsen, A.G., Bernards, R., van Kranen, H.J., Houweling, A., Bos, J.L., and Van der Eb, A.J. (1986). Different activities of the adenovirus types Ad5 and 12 Ela regions in transformation with the EJ Ha-ras oncogene. *J. Virol.* **59**, 684-691.
15. Friend, S.H., Bernards, R., Rogelj, S., Weinberg, R.A., Rapaport, J.M., Albert, D.M., and Dryja, T.P. (1986). Identification of a human DNA segment having properties of the gene that predisposes to retinoblastoma and osteosarcoma. *Nature* **323**, 643-646.
16. Bernards, R., Dessain, S.K., and Weinberg, R.A. (1986). N-myc amplification causes down-modulation of MHC class I antigen expression in neuroblastoma. *Cell* **47**, 667-674.
17. Bernards, R., Destree, A., McKenzie, S., Gordon, E., Weinberg, R.A., and Panicali, D. (1987). Effective tumor immunotherapy directed against an oncogene-encoded product using a vaccinia virus vector. *Proc. Natl. Acad. Sci. USA* **84**, 6854-6858.
18. Stone, J.C., Crosby, J.J., Kozak, C.A., Schievella, A.R., Bernards, R., and Nadeau, J.H. (1989). The murine retinoblastoma homologue maps to chromosome 14 near Es-10. *Genomics* **5**, 70-75.
19. Bernards, R., Schackelford, G.M., Gerber, M.R., Horowitz, J.M., Friend, S.H., Scharf, M., Bogenmann, E., Rapaport, J.M., McGee, T., Dryja, T., and Weinberg, R.A. (1989). Structure and expression of the murine retinoblastoma gene and characterization of its encoded protein. *Proc. Natl. Acad. Sci. USA* **86**, 6474-6478.
20. Lenardo, M., Rustgi, A.K., Schievella, A.R., and Bernards, R. (1989). Suppression of MHC class I antigen expression by N-myc through enhancer inactivation. *EMBO J.* **8**, 3351-3355.
21. Windle, J.J., Albert, D.M., O'Brien, J.M., Marcus, D.M., Distèche, C.M., Bernards, R., and Mellon, P.L. (1990) Retinoblastoma in transgenic mice. *Nature* **343**, 665-669.
22. Dyson, N., Bernards, R., Friend, S.H., Gooding, L.R., Hassel, J.A., Major, E.O., Pipas, J.M., VanDyke, T., and Harlow, E. (1990). The large T antigens of many polyoma viruses are able to form complexes with the retinoblastoma protein. *J. Virology* **64**, 1353-1356.
23. Akeson, R., and Bernards, R. (1990). N-myc downregulates NCAM expression in rat neuroblastoma. *Mol. Cell. Biol.* **10**, 2012-2016.
24. O'Brien, J.M., Marcus, D.M., Bernards, R., Carpenter, J.L., Windle, J.J., Mellon, P., and Albert, D.M. (1990). A transgenic mouse model for trilateral retinoblastoma. *Arch. Ophthalmol.* **108**, 1145-1151.
25. Rustgi, A.K., Van 't Veer, L.J., and Bernards, R. (1990). Two genes encode factors with NF- κ B- and H2TF1-like DNA-binding properties. *Proc. Natl. Acad. Sci. USA* **87**, 8707-8710.
26. Bernards, R. (1991). N-myc disrupts protein kinase C-mediated signal transduction in neuroblastoma. *EMBO J.* **10**, 1119-1125.
27. Rustgi, A.K., Dyson, N., and Bernards, R. (1991). Amino-terminal domains of c-myc and N-myc proteins mediate binding to the retinoblastoma gene product. *Nature* **352**, 541-544.

28. Howard, E., Marcus, D., O'Brien, J., Albert, D., and Bernards, R. (1992). Five DNA tumor viruses undetectable in human retinoblastoma. *Investigative Ophthalmology and Visual Science* **33**, 1564-1567.
29. van 't Veer, L.J., Lutz, P.M., Isselbacher, K.J., and Bernards, R. (1992). Structure and expression of MBP-2: a 275 kDa zinc finger protein that binds to an enhancer of Major Histocompatibility Complex class I genes. *Proc. Natl. Acad. Sci. USA*. **89**, 8971-8975.
30. van 't Veer, L.J., Beijersbergen, R.L., and Bernards, R. (1993). N-*myc* suppresses Major Histocompatibility Complex class I gene expression through down-regulation of the p50 subunit of NF- κ B. *EMBO J.* **12**, 195-200.
31. Billaud, M., and Bernards, R. (1993). A dominant-negative mutant of Max that inhibits sequence-specific DNA binding *myc* proteins. *Proc. Natl. Acad. Sci. USA*. **90**, 2739-2743.
32. Hateboer, G., Timmers, H.T.M., Rustgi, A.K., Billaud, M., Van 't Veer, L.J., and Bernards, R. (1993). TATA-binding protein and the retinoblastoma gene product bind to overlapping epitopes on c-myc and adenovirus E1A protein. *Proc. Natl. Acad. Sci. USA*. **90**, 8489-8493.
33. Beijersbergen, R.L., Hijmans, E.M., Zhu, L., and Bernards, R. (1994). Interaction of c-Myc with the pRb-related protein p107 results in inhibition of c-Myc-mediated transactivation. *EMBO.J.* **13**, 4080-4086.
34. Beijersbergen, R.L., Kerkhoven, R.M., Zhu, L., Carlée, L., Voorhoeve, F.M., and Bernards, R. (1994). E2F-4, a new member of the E2F gene family, has oncogenic activity and associates with p107 *in vivo*. *Genes, Dev.* **8**, 2680- 2690.
35. Zhu, L., Enders, G., Lees, J.A., Beijersbergen, R.L., Bernards, R., and Harlow, E. (1995). The pRB-related protein p107 contains two growth suppression domains: independent interactions with E2F and cyclin/cdk complexes. *EMBO J.* **14**, 1904-1913.
36. Hijmans, E.M., Voorhoeve, P.M., Beijersbergen, R.L., van 't Veer, L.J. and Bernards, R. (1995). E2F-5, a new E2F family member that interacts with p130 *in vivo*. *Mol Cell. Biol.*, **15**, 3082-3089.
37. Beijersbergen, R.L., Carlée, L., Kerkhoven, R.M., and Bernards, R. (1995). Regulation of the retinoblastoma protein-related p107 by G1 cyclin complexes. *Genes, Dev.* **9**, 1340-1353.
38. Hateboer, G., Gennissen, A.M.C., Ramos, Y.F.M., Kerkhoven, R., Sonntag-Buck, V., Stunnenberg, H.G. and Bernards, R. (1995). BS69: A novel adenovirus E1A-associated protein that inhibits E1A transactivation. *EMBO J.* **14**, 3159-3169.
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Reviews, Chapters and Editorials

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