

# Stanford

---



## Julien Sage

Professor of Pediatrics (Hematology/Oncology) and of Genetics  
Pediatrics - Hematology & Oncology

### CONTACT INFORMATION

- **Alternate Contact**

Alyssa Ray - Research Administrator

**Email** alyssar@stanford.edu

**Tel** (650) 724-9246

### Bio

---

### ACADEMIC APPOINTMENTS

- Professor, Pediatrics - Hematology & Oncology
- Professor, Genetics
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute
- Faculty Fellow, Stanford ChEM-H

### ADMINISTRATIVE APPOINTMENTS

- Member, Institute for Stem Cell Biology and Regenerative Medicine, (2006- present)
- co-Director, Cancer Biology PhD program, (2016- present)

### HONORS AND AWARDS

- Scholar Award, Damon Runyon Cancer Research Foundation (2005-2008)
- Scholar Award, Leukemia and Lymphoma Society (2009-2014)
- Morgridge Faculty Scholar, Lucille Packard Foundation for Children's Health (2008-2013)
- Harriet and Mary Zelencik Scientist in Children's Cancer and Blood Diseases, Lucille Packard Foundation for Children's Health (Since 2013)

### PROFESSIONAL EDUCATION

- B.S., Ecole Normale Supérieure, France , Biology (1993)
- Ph.D., Nice University, France , Biology (1998)

### LINKS

- the Sage lab: <http://med.stanford.edu/sage>

## Research & Scholarship

---

### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our research program focuses on the mechanisms that control the proliferation of mammalian cells under normal and pathological conditions (regeneration, cancer), with a particular emphasis on stem cells and gene regulatory networks. We combine genetic, genomics, and proteomics approaches to identify and investigate genes and pathways involved in cancer initiation and progression. We use genome-editing strategies to develop and study genetically-engineered mouse models for human cancers, including lung cancer, pancreatic cancer, and liver cancer. Our work spans the investigation of fundamental biological processes to the implementation of clinical trials based on our findings in pre-clinical models.

### CLINICAL TRIALS

- Cancer Biology of Retinoblastoma, Not Recruiting
- Phase 2a Desipramine in Small Cell Lung Cancer and Other High-Grade Neuroendocrine Tumors, Not Recruiting

## Teaching

---

### COURSES

#### 2019-20

- Cancer Biology Journal Club: CBIO 280 (Aut)
- Lecture Seminar Series in Cancer Biology Program: CBIO 245 (Aut, Win, Spr)

#### 2018-19

- Cancer Biology Journal Club: CBIO 280 (Aut)
- Lecture Seminar Series in Cancer Biology Program: CBIO 245 (Aut, Win, Spr)

#### 2017-18

- Cancer Biology Journal Club: CBIO 280 (Aut)
- Lecture Seminar Series in Cancer Biology Program: CBIO 245 (Aut, Win, Spr)

#### 2016-17

- Lecture Seminar Series in Cancer Biology Program: CBIO 245 (Aut, Win, Spr)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Jamie Brett, Sean Hunter, Nishant Mehta, Brian Perez, Luis Soto, Amy Tarangelo, Benjamin Topacio, Robin Yeo, Michael Zhao

#### Postdoctoral Faculty Sponsor

Alexandros Drainas, Maya Gershovich, Jun Kim, Fangfei Qu

#### Doctoral Dissertation Advisor (AC)

Andrea Chaikovsky, Julie Ko, Noah Lee, Yan Ting Shue

#### Doctoral Dissertation Co-Advisor (AC)

Catherine Yao

#### Postdoctoral Research Mentor

Jun Kim

## GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Cancer Biology (Phd Program)
- Genetics (Phd Program)
- Hematology (Fellowship Program)
- Pediatric Hem/Onc (Fellowship Program)
- Stem Cell Biology and Regenerative Medicine (Phd Program)

## Publications

---

### PUBLICATIONS

- **RB1 deletion in RB-pathway disrupted cells results in DNA damage and cancer progression.** *Molecular and cellular biology*  
Marshall, A. E., Roes, M. V., Passos, D. T., DeWeerd, M. C., Chaikovsky, A. C., Sage, J., Howlett, C. J., Dick, F. A.  
2019
- **Manipulating a tumour suppressor** *NATURE*  
Rubin, S. M., Sage, J.  
2019; 569 (7756): 343–44
- **Molecular subtypes of small cell lung cancer: a synthesis of human and mouse model data** *NATURE REVIEWS CANCER*  
Rudin, C. M., Poirier, J. T., Byers, L., Dive, C., Dowlati, A., George, J., Heymach, J., Johnson, J. E., Lehman, J. M., MacPherson, D., Massion, P. P., Minna, J. D., Oliver, et al  
2019; 19 (5): 289–97
- **Targeting DNA Damage Response Promotes Antitumor Immunity through STING-Mediated T-cell Activation in Small Cell Lung Cancer** *CANCER DISCOVERY*  
Sen, T., Rodriguez, B., Chen, L., Della Corte, C. M., Morikawa, N., Fujimoto, J., Cristea, S., Thuyen Nguyen, Diao, L., Li, L., Fan, Y., Yang, Y., Wang, J., et al  
2019; 9 (5): 646–61
- **Cyclin D-Cdk4,6 Drives Cell-Cycle Progression via the Retinoblastoma Protein's C-Terminal Helix.** *Molecular cell*  
Topacio, B. R., Zatulovskiy, E., Cristea, S., Xie, S., Tambo, C. S., Rubin, S. M., Sage, J., Koivomagi, M., Skotheim, J. M.  
2019
- **Molecular subtypes of small cell lung cancer: a synthesis of human and mouse model data.** *Nature reviews. Cancer*  
Rudin, C. M., Poirier, J. T., Byers, L. A., Dive, C., Dowlati, A., George, J., Heymach, J. V., Johnson, J. E., Lehman, J. M., MacPherson, D., Massion, P. P., Minna, J. D., Oliver, et al  
2019
- **Road map for fibrolamellar carcinoma: progress and goals of a diversified approach.** *Journal of hepatocellular carcinoma*  
Kastenhuber, E. R., Craig, J., Ramsey, J., Sullivan, K. M., Sage, J., de Oliveira, S., Riehle, K. J., Scott, J. D., Gordan, J. D., Bardeesy, N., Abou-Alfa, G. K.  
2019; 6: 41–48
- **E2F4 regulates transcriptional activation in mouse embryonic stem cells independently of the RB family.** *Nature communications*  
Hsu, J., Arand, J., Chaikovsky, A., Mooney, N. A., Demeter, J., Brison, C. M., Oliverio, R., Vogel, H., Rubin, S. M., Jackson, P. K., Sage, J.  
2019; 10 (1): 2939
- **Intertumoral Heterogeneity in SCLC Is Influenced by the Cell Type of Origin.** *Cancer discovery*  
Yang, D., Denny, S. K., Greenside, P. G., Chaikovsky, A. C., Brady, J. J., Ouadah, Y., Granja, J. M., Jahchan, N. S., Lim, J. S., Kwok, S., Kong, C. S., Berghoff, A. S., Schmitt, et al  
2018
- **Non-canonical functions of the RB protein in cancer** *NATURE REVIEWS CANCER*  
Dick, F. A., Goodrich, D. W., Sage, J., Dyson, N. J.  
2018; 18 (7): 442–51
- **CD47 is not Over-Expressed in Fibrolamellar Hepatocellular Carcinoma** *ANNALS OF CLINICAL AND LABORATORY SCIENCE*  
Cooney, T., Wei, M. C., Rangaswami, A., Xu, L., Sage, J., Hazard, F. K.

2017; 47 (4): 395–402

- **Intratumoural heterogeneity generated by Notch signalling promotes small-cell lung cancer** *NATURE*  
Lim, J. S., Ibaseta, A., Fischer, M. M., Cancilla, B., O'Young, G., Cristea, S., Luca, V. C., Yang, D., Jahchan, N. S., Hamard, C., Antoine, M., Wislez, M., Kong, et al  
2017; 545 (7654): 360-?
- **CHK1 inhibition in small cell lung cancer produces single-agent activity in biomarker-defined disease subsets and combination activity with cisplatin or olaparib.** *Cancer research*  
Sen, T., Tong, P., Stewart, C. A., Cristea, S., Valliani, A., Shames, D. S., Redwood, A., Fan, Y., Li, L., Glisson, B. S., Minna, J., Sage, J., Gibbons, et al  
2017
- **G1 cyclins protect pluripotency.** *Nature cell biology*  
Arand, J., Sage, J.  
2017; 19 (3): 149-150
- **Combining immune checkpoint inhibition and DNA damage repair (DDR) targeted therapy in small cell lung cancer (SCLC)**  
Sen, T., Chen, L., Rodriguez, B., Yang, Y., Fan, Y., Stewart, C., Glisson, B., Piwnica-Worms, H., Sage, J., Heymach, J. V., Gibbons, D. L., Byers, L. A.  
AMER ASSOC CANCER RESEARCH.2017
- **Chemosensitive Relapse in Small Cell Lung Cancer Proceeds through an EZH2-SLFN11 Axis.** *Cancer cell*  
Gardner, E. E., Lok, B. H., Schneeberger, V. E., Desmeules, P., Miles, L. A., Arnold, P. K., Ni, A., Khodos, I., de Stanchina, E., Nguyen, T., Sage, J., Campbell, J. E., Ribich, et al  
2017; 31 (2): 286-299
- **Human hepatic organoids for the analysis of human genetic diseases.** *JCI insight*  
Guan, Y., Xu, D., Garfin, P. M., Ehmer, U., Hurwitz, M., Enns, G., Michie, S., Wu, M., Zheng, M., Nishimura, T., Sage, J., Peltz, G.  
2017; 2 (17)
- **Lysine methyltransferase SMYD2 promotes cyst growth in autosomal dominant polycystic kidney disease.** *The Journal of clinical investigation*  
Li, L. X., Fan, L. X., Zhou, J. X., Grantham, J. J., Calvet, J. P., Sage, J., Li, X.  
2017; 127 (7): 2751–64
- **Relationship between anti-depressant use and lung cancer survival.** *Cancer treatment and research communications*  
Zingone, A., Brown, D., Bowman, E. D., Vidal, O., Sage, J., Neal, J., Ryan, B. M.  
2017; 10: 33–39
- **Novel functions for the transcription factor E2F4 in development and disease.** *Cell cycle*  
Hsu, J., Sage, J.  
2016: 1-8
- **Essential role for the planarian intestinal GATA transcription factor in stem cells and regeneration.** *Developmental biology*  
Flores, N. M., Oviedo, N. J., Sage, J.  
2016; 418 (1): 179-188
- **Is the Canonical RAF/MEK/ERK Signaling Pathway a Therapeutic Target in SCLC?** *Journal of thoracic oncology*  
Cristea, S., Sage, J.  
2016; 11 (8): 1233-1241
- **Identification and Targeting of Long-Term Tumor-Propagating Cells in Small Cell Lung Cancer.** *Cell reports*  
Jahchan, N. S., Lim, J. S., Bola, B., Morris, K., Seitz, G., Tran, K. Q., Xu, L., Trapani, F., Morrow, C. J., Cristea, S., Coles, G. L., Yang, D., Vaka, et al  
2016; 16 (3): 644-656
- **Nfib Promotes Metastasis through a Widespread Increase in Chromatin Accessibility** *CELL*  
Denny, S. K., Yang, D., Chuang, C., Brady, J. J., Lim, J. S., Gruner, B. M., Chiou, S., Schep, A. N., Baral, J., Hamard, C., Antoine, M., Wislez, M., Kong, et al  
2016; 166 (2): 328-342
- **CD47-blocking immunotherapies stimulate macrophage-mediated destruction of small-cell lung cancer** *JOURNAL OF CLINICAL INVESTIGATION*  
Weiskopf, K., Jahchan, N. S., Schnorr, P. J., Cristea, S., Ring, A. M., Maute, R. L., Volkmer, A. K., Volkmer, J., Liu, J., Lim, J. S., Yang, D., Seitz, G., Thuyen Nguyen, et al  
2016; 126 (7): 2610-2620

- **Identification of tumorigenic cells and therapeutic targets in pancreatic neuroendocrine tumors** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Krampitz, G. W., George, B. M., Willingham, S. B., Volkmer, J., Weiskopf, K., Jahchan, N., Newman, A. M., Sahoo, D., Zemek, A. J., Yanovsky, R. L., Nguyen, J. K., Schnorr, P. J., Mazur, et al  
2016; 113 (16): 4464-4469
- **Coordination of stress signals by the lysine methyltransferase SMYD2 promotes pancreatic cancer** *GENES & DEVELOPMENT*  
Reynoird, N., Mazur, P. K., Stellfeld, T., Flores, N. M., Lofgren, S. M., Carlson, S. M., Brambilla, E., Hainaut, P., Kaznowska, E. B., Arrowsmith, C. H., Khatri, P., Stresemann, C., Gozani, et al  
2016; 30 (7): 772-785
- **Coordination of stress signals by the lysine methyltransferase SMYD2 promotes pancreatic cancer.** *Genes & development*  
Reynoird, N., Mazur, P. K., Stellfeld, T., Flores, N. M., Lofgren, S. M., Carlson, S. M., Brambilla, E., Hainaut, P., Kaznowska, E. B., Arrowsmith, C. H., Khatri, P., Stresemann, C., Gozani, et al  
2016; 30 (7): 772-785
- **Control of Proliferation and Cancer Growth by the Hippo Signaling Pathway.** *Molecular cancer research*  
Ehmer, U., Sage, J.  
2016; 14 (2): 127-140
- **Loss of Pten Disrupts the Thymic Epithelium and Alters Thymic Function.** *PloS one*  
Garfin, P. M., Nguyen, T., Sage, J.  
2016; 11 (2)
- **Novel insights into the oncogenic function of the SMYD3 lysine methyltransferase.** *Translational cancer research*  
Mazur, P. K., Gozani, O., Sage, J., Reynoird, N.  
2016; 5 (3): 330-33
- **Crosstalk between stem cell and cell cycle machineries** *CURRENT OPINION IN CELL BIOLOGY*  
Kareta, M. S., Sage, J., Wernig, M.  
2015; 37: 68-74
- **Combined inhibition of BET family proteins and histone deacetylases as a potential epigenetics-based therapy for pancreatic ductal adenocarcinoma.** *Nature medicine*  
Mazur, P. K., Herner, A., Mello, S. S., Wirth, M., Hausmann, S., Sánchez-Rivera, F. J., Lofgren, S. M., Kuschma, T., Hahn, S. A., Vangala, D., Trajkovic-Arsic, M., Gupta, A., Heid, et al  
2015; 21 (10): 1163-1171
- **Comprehensive genomic profiles of small cell lung cancer** *NATURE*  
George, J., Lim, J. S., Jang, S. J., Cun, Y., Ozretic, L., Kong, G., Leenders, F., Lu, X., Fernandez-Cuesta, L., Bosco, G., Mueller, C., Dahmen, I., Jahchan, et al  
2015; 524 (7563): 47-U73
- **Comprehensive genomic profiles of small cell lung cancer.** *Nature*  
George, J., Lim, J. S., Jang, S. J., Cun, Y., Ozretic, L., Kong, G., Leenders, F., Lu, X., Fernández-Cuesta, L., Bosco, G., Müller, C., Dahmen, I., Jahchan, et al  
2015; 524 (7563): 47-53
- **Inhibition of pluripotency networks by the rb tumor suppressor restricts reprogramming and tumorigenesis.** *Cell stem cell*  
Kareta, M. S., Gorges, L. L., Hafeez, S., Benayoun, B. A., Marro, S., Zmoos, A., Cecchini, M. J., Spacek, D., Batista, L. F., O'Brien, M., Ng, Y., Ang, C. E., Vaka, et al  
2015; 16 (1): 39-50
- **Genomic analysis of fibrolamellar hepatocellular carcinoma.** *Human molecular genetics*  
Xu, L., Hazard, F. K., Zmoos, A., Jahchan, N., Chaib, H., Garfin, P. M., Rangaswami, A., Snyder, M. P., Sage, J.  
2015; 24 (1): 50-63
- **Pancreatic cancer takes its Toll.** *The Journal of experimental medicine*  
Mazur, P. K., Sage, J.  
2015; 212 (12): 1988
- **In vivo disruption of an Rb-E2F-Ezh2 signaling loop causes bladder cancer.** *Cancer research*

- Santos, M., Martínez-Fernández, M., Dueñas, M., García-Escudero, R., Alfaya, B., Villacampa, F., Saiz-Ladera, C., Costa, C., Oteo, M., Duarte, J., Martínez, V., Gómez-Rodríguez, M. J., Martín, et al  
2014; 74 (22): 6565-6577
- **Organ Size Control Is Dominant over Rb Family Inactivation to Restrict Proliferation In Vivo.** *Cell reports*  
Ehmer, U., Zmoos, A., Auerbach, R. K., Vaka, D., Butte, A. J., Kay, M. A., Sage, J.  
2014; 8 (2): 371-381
  - **SMYD3 links lysine methylation of MAP3K2 to Ras-driven cancer.** *Nature*  
Mazur, P. K., Reynoird, N., Khatri, P., Jansen, P. W., Wilkinson, A. W., Liu, S., Barbash, O., Van Aller, G. S., Huddleston, M., Dhanak, D., Tummino, P. J., Kruger, R. G., Garcia, et al  
2014; 510 (7504): 283-287
  - **From Fly Wings to Targeted Cancer Therapies: A Centennial for Notch Signaling** *CANCER CELL*  
Ntziachristos, P., Lim, J. S., Sage, J., Aifantis, I.  
2014; 25 (3): 318-334
  - **Cancer: The origin of human retinoblastoma.** *Nature*  
Bremner, R., Sage, J.  
2014; 514 (7522): 312-13
  - **A Drug Repositioning Approach Identifies Tricyclic Antidepressants as Inhibitors of Small Cell Lung Cancer and Other Neuroendocrine Tumors** *CANCER DISCOVERY*  
Jahchan, N. S., Dudley, J. T., Mazur, P. K., Flores, N., Yang, D., Palmerton, A., Zmoos, A., Vaka, D., Tran, K. Q., Zhou, M., Krasinska, K., Riess, J. W., Neal, et al  
2013; 3 (12): 1364-1377
  - **Inactivation of the RB family prevents thymus involution and promotes thymic function by direct control of Foxn1 expression.** *journal of experimental medicine*  
Garfin, P. M., Min, D., Bryson, J. L., Serwold, T., Edris, B., Blackburn, C. C., Richie, E. R., Weinberg, K. I., Manley, N. R., Sage, J., Viatour, P.  
2013; 210 (6): 1087-1097
  - **IQGAP1 scaffold-kinase interaction blockade selectively targets RAS-MAP kinase-driven tumors.** *Nature medicine*  
Jameson, K. L., Mazur, P. K., Zehnder, A. M., Zhang, J., Zarnegar, B., Sage, J., Khavari, P. A.  
2013; 19 (5): 626-630
  - **RB goes mitochondrial.** *Genes & development*  
Attardi, L. D., Sage, J.  
2013; 27 (9): 975-979
  - **Defining a new vision for the retinoblastoma gene: report from the 3rd International Rb Meeting.** *Cell division*  
Rubin, S. M., Sage, J.  
2013; 8 (1): 13
  - **The RB family is required for the self-renewal and survival of human embryonic stem cells** *NATURE COMMUNICATIONS*  
Conklin, J. F., Baker, J., Sage, J.  
2012; 3
  - **Inactivating All Three Rb Family Pocket Proteins Is Insufficient to Initiate Cervical Cancer** *CANCER RESEARCH*  
Shin, M., Sage, J., Lambert, P. F.  
2012; 72 (20): 5418-5427
  - **Integrative genome analyses identify key somatic driver mutations of small-cell lung cancer** *NATURE GENETICS*  
Peifer, M., Fernandez-Cuesta, L., Sos, M. L., George, J., Seidel, D., Kasper, L. H., Plenker, D., Leenders, F., Sun, R., Zander, T., Menon, R., Koker, M., Dahmen, et al  
2012; 44 (10): 1104-?
  - **The retinoblastoma tumor suppressor and stem cell biology** *GENES & DEVELOPMENT*  
Sage, J.  
2012; 26 (13): 1409-1420
  - **Smyd3 regulates cancer cell phenotypes and catalyzes histone H4 lysine 5 methylation** *EPIGENETICS*

- Van Aller, G. S., Reynoird, N., Barbash, O., Huddleston, M., Liu, S., Zmoos, A., McDevitt, P., Sinnamon, R., Le, B., Mas, G., Annan, R., Sage, J., Garcia, et al  
2012; 7 (4): 340-343
- **GENOMICS The path to retinoblastoma** *NATURE*  
Sage, J., Cleary, M. L.  
2012; 481 (7381): 269-270
  - **A crucial requirement for Hedgehog signaling in small cell lung cancer** *NATURE MEDICINE*  
Park, K., Martelotto, L. G., Peifer, M., Sos, M. L., Karnezis, A. N., Mahjoub, M. R., Bernard, K., Conklin, J. F., Szczepny, A., Yuan, J., Guo, R., Ospina, B., Falzon, et al  
2011; 17 (11): 1504-U1506
  - **PDGF signalling controls age-dependent proliferation in pancreatic beta-cells** *NATURE*  
Chen, H., Gu, X., Liu, Y., Wang, J., Wirt, S. E., Bottino, R., Schorle, H., Sage, J., Kim, S. K.  
2011; 478 (7369): 349-?
  - **Discovery and Preclinical Validation of Drug Indications Using Compendia of Public Gene Expression Data (vol 3, 96ra77, 2011)** *SCIENCE TRANSLATIONAL MEDICINE*  
Sirota, M., DUDLEY, J. T., Kim, J., Chiang, A. P., Morgan, A. A., Sweet-Cordero, A., Sage, J., Butte, A. J.  
2011; 3 (102)
  - **Notch signaling inhibits hepatocellular carcinoma following inactivation of the RB pathway** *JOURNAL OF EXPERIMENTAL MEDICINE*  
Viatour, P., Ehmer, U., Saddic, L. A., Dorrell, C., Andersen, J. B., Lin, C., Zmoos, A., Mazur, P. K., Schaffer, B. E., Ostermeier, A., Vogel, H., Sylvester, K. G., Thorgeirsson, et al  
2011; 208 (10): 1963-1976
  - **Lung Cancer Signatures in Plasma Based on Proteome Profiling of Mouse Tumor Models** *CANCER CELL*  
Taguchi, A., Politi, K., Pitteri, S. J., Lockwood, W. W., Faca, V. M., Kelly-Spratt, K., Wong, C., Zhang, Q., Chin, A., Park, K., Goodman, G., Gazdar, A. F., Sage, et al  
2011; 20 (3): 289-299
  - **Newly identified aspects of tumor suppression by RB** *DISEASE MODELS & MECHANISMS*  
Viatour, P., Sage, J.  
2011; 4 (5): 581-585
  - **Discovery and Preclinical Validation of Drug Indications Using Compendia of Public Gene Expression Data** *SCIENCE TRANSLATIONAL MEDICINE*  
Sirota, M., Dudley, J. T., Kim, J., Chiang, A. P., Morgan, A. A., Sweet-Cordero, A., Sage, J., Butte, A. J.  
2011; 3 (96)
  - **Coexpression of Normally Incompatible Developmental Pathways in Retinoblastoma Genesis** *CANCER CELL*  
McEvoy, J., Flores-Otero, J., Zhang, J., Nemeth, K., Brennan, R., Bradley, C., Krafcik, F., Rodriguez-Galindo, C., Wilson, M., Xiong, S., Lozano, G., Sage, J., Fu, et al  
2011; 20 (2): 260-275
  - **miR than meets the eye** *GENES & DEVELOPMENT*  
Sage, J., Ventura, A.  
2011; 25 (16): 1663-1667
  - **Characterization of the cell of origin for small cell lung cancer** *CELL CYCLE*  
Park, K., Liang, M., Raiser, D. M., Zamponi, R., Roach, R. R., Curtis, S. J., Walton, Z., Schaffer, B. E., Roake, C. M., Zmoos, A., Kriegel, C., Wong, K., Sage, et al  
2011; 10 (16): 2806-2815
  - **Functional Interactions between Retinoblastoma and c-MYC in a Mouse Model of Hepatocellular Carcinoma** *PLOS ONE*  
Saddic, L. A., Wirt, S., Vogel, H., Felsner, D. W., Sage, J.  
2011; 6 (5)
  - **MicroRNA programs in normal and aberrant stem and progenitor cells** *GENOME RESEARCH*  
Arnold, C. P., Tan, R., Zhou, B., Yue, S., Schaffert, S., Biggs, J. R., Doyonnas, R., Lo, M., Perry, J. M., Renault, V. M., Sacco, A., Somervaille, T., Viatour, et al  
2011; 21 (5): 798-810
  - **RB deletion disrupts coordination between DNA replication licensing and mitotic entry in vivo** *MOLECULAR BIOLOGY OF THE CELL*

- Bourgo, R. J., Ehmer, U., Sage, J., Knudsen, E. S.  
2011; 22 (7): 931-939
- **Methylation of the Retinoblastoma Tumor Suppressor by SMYD2** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Saddic, L. A., West, L. E., Aslanian, A., Yates, J. R., Rubin, S. M., Gozani, O., Sage, J.  
2010; 285 (48): 37733-37740
  - **G1 arrest and differentiation can occur independently of Rb family function** *JOURNAL OF CELL BIOLOGY*  
Wirt, S. E., Adler, A. S., Gebala, V., Weimann, J. M., Schaffer, B. E., Saddic, L. A., Viatour, P., Vogel, H., Chang, H. Y., Meissner, A., Sage, J.  
2010; 191 (4): 809-825
  - **Transient Inactivation of Rb and ARF Yields Regenerative Cells from Postmitotic Mammalian Muscle** *CELL STEM CELL*  
Pajcini, K. V., Corbel, S. Y., Sage, J., Pomerantz, J. H., Blau, H. M.  
2010; 7 (2): 198-213
  - **RB's original CIN?** *GENES & DEVELOPMENT*  
Sage, J., Straight, A. F.  
2010; 24 (13): 1329-1333
  - **Tandem E2F Binding Sites in the Promoter of the p107 Cell Cycle Regulator Control p107 Expression and Its Cellular Functions** *PLOS GENETICS*  
Burkhart, D. L., Wirt, S. E., Zmoos, A., Kareta, M. S., Sage, J.  
2010; 6 (6)
  - **Loss of p130 Accelerates Tumor Development in a Mouse Model for Human Small-Cell Lung Carcinoma** *CANCER RESEARCH*  
Schaffer, B. E., Park, K., Yiu, G., Conklin, J. F., Lin, C., Burkhart, D. L., Karnezis, A. N., Sweet-Cordero, E. A., Sage, J.  
2010; 70 (10): 3877-3883
  - **Complex transcriptional regulatory networks around the retinoblastoma tumor suppressor gene** *CELL CYCLE*  
Burkhart, D. L., Sage, J.  
2010; 9 (9): 1663-1664
  - **p107 in the public eye: an Rb understudy and more** *CELL DIVISION*  
Wirt, S. E., Sage, J.  
2010; 5
  - **Regulation of RB Transcription In Vivo by RB Family Members** *MOLECULAR AND CELLULAR BIOLOGY*  
Burkhart, D. L., Ngai, L. K., Roake, C. M., Viatour, P., Thangavel, C., Ho, V. M., Knudsen, E. S., Sage, J.  
2010; 30 (7): 1729-1745
  - **Keeping an Eye on Retinoblastoma Control of Human Embryonic Stem Cells** *JOURNAL OF CELLULAR BIOCHEMISTRY*  
Conklin, J. F., Sage, J.  
2009; 108 (5): 1023-1030
  - **Novel roles for A-type lamins in telomere biology and the DNA damage response pathway** *EMBO JOURNAL*  
Gonzalez-Suarez, I., Redwood, A. B., Perkins, S. M., Vermolen, B., Lichtensztejn, D., Grotzky, D. A., Morgado-Palacin, L., Gapud, E. J., Sleckman, B. P., Sullivan, T., Sage, J., Stewart, C. L., Mai, et al  
2009; 28 (16): 2414-2427
  - **The role of the retinoblastoma/E2F1 tumor suppressor pathway in the lesion recognition step of nucleotide excision repair** *DNA REPAIR*  
Lin, P. S., McPherson, L. A., Chen, A. Y., Sage, J., Ford, J. M.  
2009; 8 (7): 795-802
  - **The retinoblastoma gene Rb and its family member p130 suppress lung adenocarcinoma induced by oncogenic K-Ras** *ONCOGENE*  
Ho, V. M., Schaffer, B. E., Karnezis, A. N., Park, K. S., Sage, J.  
2009; 28 (10): 1393-1399
  - **Hematopoietic Stem Cell Quiescence Is Maintained by Compound Contributions of the Retinoblastoma Gene Family** *CELL STEM CELL*  
Viatour, P., Somerville, T. C., Venkatasubrahmanyam, S., Kogan, S., McLaughlin, M. E., Weissman, I. L., Butte, A. J., Passegue, E., Sage, J.  
2008; 3 (4): 416-428



- **Cellular mechanisms of tumour suppression by the retinoblastoma gene** *NATURE REVIEWS CANCER*  
Burkhart, D. L., Sage, J.  
2008; 8 (9): 671-682
- **GFP reporter mice for the retinoblastoma-related cell cycle regulator p107** *CELL CYCLE*  
Burkhart, D. L., Viatour, P., Ho, V. M., Sage, J.  
2008; 7 (16): 2544-2552
- **Hope in sight for retinoblastoma** *NATURE MEDICINE*  
Sage, J.  
2007; 13 (1): 30-31
- **pRB family proteins are required for H3K27 trimethylation and polycomb repression complexes binding to and silencing p16(INK4a) tumor suppressor gene** *GENES & DEVELOPMENT*  
Kotake, Y., Cao, R., Viatour, P., Sage, J., Zhang, Y., Xiong, Y.  
2007; 21 (1): 49-54
- **The related retinoblastoma (pRb) and p130 proteins cooperate to regulate homeostasis in the intestinal epithelium** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Haigis, K., Sage, J., Glickman, J., Shafer, S., Jacks, T.  
2006; 281 (1): 638-647
- **C/EBP beta cooperates with RB : E2F to implement Ras(V12)-induced cellular senescence** *EMBO JOURNAL*  
Sebastian, T., Malik, R., Thomas, S., Sage, J., Johnson, P. F.  
2005; 24 (18): 3301-3312
- **Making young tumors old: a new weapon against cancer?** *Science of aging knowledge environment : SAGE KE*  
Sage, J.  
2005; 2005 (33): pe25-?
- **Cell type-specific effects of Rb deletion in the murine retina** *GENES & DEVELOPMENT*  
Macpherson, D., Sage, J., Kim, T., Ho, D., McLaughlin, M. E., Jacks, T.  
2004; 18 (14): 1681-1694
- **Discrete signaling pathways participate in RB-dependent responses to chemotherapeutic agents** *ONCOGENE*  
Mayhew, C. N., Perkin, L. M., Zhang, X. P., Sage, J., Jacks, T., Knudsen, E. S.  
2004; 23 (23): 4107-4120
- **Cyclin C makes an entry into the cell cycle** *DEVELOPMENTAL CELL*  
Sage, J.  
2004; 6 (5): 607-608
- **RB signaling prevents replication-dependent DNA double-strand breaks following genotoxic insult** *NUCLEIC ACIDS RESEARCH*  
Bosco, E. E., Mayhew, C. N., Hennigan, R. F., Sage, J., Jacks, T., Knudsen, E. S.  
2004; 32 (1): 25-34
- **Recapitulation of the effects of the human papillomavirus type 16 E7 oncogene on mouse epithelium by somatic Rb deletion and detection of pRb-independent effects of E7 in vivo** *MOLECULAR AND CELLULAR BIOLOGY*  
Balsitis, S. J., Sage, J., Duensing, S., Munger, K., Jacks, T., Lambert, P. F.  
2003; 23 (24): 9094-9103
- **Perp is a mediator of p53-dependent apoptosis in diverse cell types** *CURRENT BIOLOGY*  
Ihrie, R. A., Reczek, E., Horner, J. S., Khachatryan, L., Sage, J., Jacks, T., Attardi, L. D.  
2003; 13 (22): 1985-1990
- **Acute mutation of retinoblastoma gene function is sufficient for cell cycle re-entry** *NATURE*  
Sage, J., Miller, A. L., Perez-Mancera, P. A., Wysocki, J. M., Jacks, T.  
2003; 424 (6945): 223-228
- **Conditional mutation of Rb causes cell cycle defects without apoptosis in the central nervous system** *MOLECULAR AND CELLULAR BIOLOGY*

- Macpherson, D., Sage, J., Crowley, D., Trumpp, A., Bronson, R. T., Jacks, T.  
2003; 23 (3): 1044-1053
- **An induced Ets repressor complex regulates growth arrest during terminal macrophage differentiation** *CELL*  
Klappacher, G. W., Lunyak, V. V., Sykes, D. B., Sawka-Verhelle, D., Sage, J., Brard, G., Ngo, S. D., Gangadharan, D., Jacks, T., Kamps, M. P., Rose, D. W., Rosenfeld, M. G., Glass, et al  
2002; 109 (2): 169-180
  - **Targeted point mutations of p53 lead to dominant-negative inhibition of wild-type p53 function** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
de Vries, A., Flores, E. R., Miranda, B., Hsieh, H. M., van Oostrom, C. T., Sage, J., Jacks, T.  
2002; 99 (5): 2948-2953
  - **The RB gene family and control of the cell cycle** *BULLETIN DU CANCER*  
Sage, J.  
2001; 88 (6): 541-543
  - **Targeted disruption of the three Rb-related genes leads to loss of G(1) control and immortalization** *GENES & DEVELOPMENT*  
Sage, J., Mulligan, G. J., Attardi, L. D., Miller, A., Chen, S. Q., Williams, B., Theodorou, E., Jacks, T.  
2000; 14 (23): 3037-3050
  - **Sex hormone-induced carcinogenesis in Rb-deficient prostate tissue** *CANCER RESEARCH*  
Wang, Y. H., Hayward, S. W., Donjacour, A. A., Young, P., Jacks, T., Sage, J., Dahiya, R., Cardiff, R. D., Day, M. L., Cunha, G. R.  
2000; 60 (21): 6008-6017
  - **NF-kappa B is developmentally regulated during spermatogenesis in mice** *DEVELOPMENTAL DYNAMICS*  
Lilienbaum, A., Sage, J., Memet, S., Rassoulzadegan, M., Cuzin, F., Israel, A.  
2000; 219 (3): 333-340
  - **Cell cycle inhibition by the anti-angiogenic agent TNP-470 is mediated by p53 and p21(WAF1/CIP1)** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Zhang, Y., Griffith, E. C., Sage, J., Jacks, T., Liu, J. O.  
2000; 97 (12): 6427-6432
  - **Temporal and spatial control of the Sycp1 gene transcription in the mouse meiosis: regulatory elements active in the male are not sufficient for expression in the female gonad** *MECHANISMS OF DEVELOPMENT*  
Sage, J., Martin, L., Meuwissen, R., Heyting, C., Cuzin, F., Rassoulzadegan, M.  
1999; 80 (1): 29-39
  - **Cre expression in primary spermatocytes: A tool for genetic engineering of the germ line** *MOLECULAR REPRODUCTION AND DEVELOPMENT*  
Vidal, F., Sage, J., Cuzin, F., Rassoulzadegan, M.  
1998; 51 (3): 274-280
  - **Stage-specific expression of the Kit receptor and its ligand (KL) during male gametogenesis in the mouse: a Kit-KL interaction critical for meiosis** *DEVELOPMENT*  
Vincent, S., Segretain, D., Nishikawa, S., Nishikawa, S., Sage, J., Cuzin, F., Rassoulzadegan, M.  
1998; 125 (22): 4585-4593
  - **Stage-specific signals in germ line differentiation: Control of Sertoli cell phagocytic activity by spermatogenic cells** *DEVELOPMENTAL BIOLOGY*  
Grandjean, V., Sage, J., Ranc, F., Cuzin, F., Rassoulzadegan, M.  
1997; 184 (1): 165-174
  - **TRANSMEIOTIC DIFFERENTIATION OF MALE GERM-CELLS IN CULTURE** *CELL*  
Rassoulzadegan, M., PAQUISFLUCKLINGER, V., Bertino, B., Sage, J., Jasin, M., Miyagawa, K., VANHEYNINGEN, V., Besmer, P., Cuzin, F.  
1993; 75 (5): 997-1006