

CURRICULUM VITAE

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Date of Birth

October 8, 1958

Education

1980	Lafayette College, Easton, PA Biology	B.A.
1989	University of Pennsylvania, Philadelphia, PA Pathology/Molecular Biology	Ph.D.

Postdoctoral Training

1989–1991	Research Associate Department of Radiation Oncology, Stanford University, Stanford, CA
1991–1992	Senior Research Associate Department of Radiation Oncology, Stanford University, Stanford, CA

Academic Appointments/Teaching Experience

1992–present	Graduate Group in Cancer Biology Stanford University, Stanford, CA
1992–present	Graduate Group in Biophysics Stanford University, Stanford, CA
1992–1999	Assistant Professor Department of Radiation Oncology, Stanford University, Stanford, CA
1999–2003	Associate Professor (with tenure) Department of Radiation Oncology, Stanford University, Stanford, CA
2001–2003	Associate Professor (by courtesy) Department of Gynecology and Obstetrics, Stanford University, Stanford, CA
2003–present	Professor Department of Radiation Oncology, Stanford University, Stanford, CA
2003–present	Professor (by courtesy) Department of Gynecology and Obstetrics, Stanford University, Stanford, CA

- 2004–present Professor and Director
Division of Radiation & Cancer Biology, Department of Radiation Oncology,
Stanford University, Stanford, CA
- 2005–2017 Director, Program in Cancer Biology
Stanford University School of Medicine, Stanford, CA
- 2005–2018 Leader, Program in Radiation Biology
Stanford Cancer Institute, Stanford University School of Medicine, Stanford, CA
- 2006–present Professor (by courtesy)
Department of Surgery, Stanford University, Stanford, CA
- 2011–2018 Leader, Molecular Therapeutics Program
Stanford Cancer Center, Stanford University School of Medicine, Stanford, CA
- 2011–2019 Associate Chair, Research
Department of Radiation Oncology
Stanford University School of Medicine, Stanford, CA
- 2012–2019 Associate Director for Basic Science
Stanford Cancer Institute
- 2016–2018 Director, Radiation Science Center
Department of Radiation Oncology
Stanford University School of Medicine, Stanford, CA
- 2019–present Director, Oxford Institute for Radiation Oncology
University of Oxford, Oxford, United Kingdom

Scientific Companies

- 2004 Co-Founding Scientist
PROACTA, San Diego, CA/Auckland, New Zealand
- 2007 Co-Founding Scientist
Arresto Biotech, Palo Alto, CA
2011 Bought by Gilead Sciences, Foster City, CA
- 2009 Co-Founding Scientist
Aravive Bio Corporation, Houston, TX
- 2016 Co-Founding Scientist
AKSO Bio, Palo Alto, CA

Awards and Honors

- 1986–1989 NIH Predoctoral Trainee
- 1989 Alexander Hollaender Fellowship Awardee
- 1995 American Cancer Society Junior Faculty Research Award
- 1996 Howard Hughes Junior Faculty Award
- 1997 Michael Fry Research Awardee of the Radiation Research Society
- 2000 John Yuhas Award (Excellence in Radiation Oncology,
University of Pennsylvania)
- 2003 Virginia Logan Lecture, Thomas Jefferson University
- 2006 Jack, Lulu and Sam Willson Endowed Professor of Cancer Biology

2010	MERIT Award NIH
2013	ASTRO Gold Medal
2015	NIH Outstanding Investigator Award
2015	National Academy of Medicine
2016	Stanford Biosciences "Excellence in Mentoring and Service Award"

Memberships, Offices, Committees and Assignments in Professional Societies

Service to Radiation Sciences

1986–present	Radiation Research Society
	1992–1993 Nominating Committee
	1994–1995 Program Committee
	1997–2000 Site Selection Committee
	2001 Strategic Planning Committee
	2002–2003 Councilor
	2002–2003 ICRR Program Committee Brisbane, Australia
1992–present	American Society for Therapeutic Radiation Oncology
	2000–2004 Cancer and Radiation Biology Committee
	2000–2009 Educational Sessions
	2007 ASTRO Translational Symposium
	2007 ASTRO Research Evaluation Committee
1995–present	ABR Radiation Biology Committee
	2010–present, Chair, Radiation Biology Committee
2003–present	International Conference on Translational Radiation Oncology Program Committee
2006–2009	Radiological Society of North America (RSNA) Task Force Member on Oncologic Imaging and Therapies
1998–2003	Member, Radiation Study Section, NIH Center for Scientific Review
	2001–2003, Chair
2005–2009	NCI Initial Review Group Subcommittee C-Basic & Preclinical
2012–2017	Member, Basic Mechanisms of Cancer Therapeutics Study Section, NIH Center for Scientific Review (Chair, 2015–2017)

Editorial Boards

1995–2010	International Journal of Radiation Biology
	1995-2000 Editorial Board Member
	2000-2009 Associate Editor
1998–2002	Radiation Research, Official Journal of the Radiation Research Society, Associate Editor
2000–2010	International Journal of Radiation Oncology, Biology, Physics, Editorial Board
2004–2009	Journal of Radiation Research, Official Journal of the Japan Radiation Research Society, Foreign Associate Editor
2001–present	Cancer Biology and Therapy, Associate Editor
2002–2012	Molecular Cancer Research, Deputy Editor for Reviews & Senior Editor

2003–2012 Cancer Research, Associate Editor
 2005–present Current Cancer Therapy Reviews, Editorial Advisory Board
 2013–present Peer J, Editorial Board
 2015–present Molecular Cancer Therapeutics, Editorial Board
 2015–present Scientific Reports, Editorial Board

Service to Cancer Research Societies

1993–present American Association of Cancer Research
 2002–2004 Molecular Biology in Clinical Oncology Workshop
 2000–present Tumor Microenvironment Meeting, Organizing Committee
 2002, 2004 & 2017 Keystone Organizer and Co-Chair on Biology of Hypoxia
 2006–present Cancer Biology Chairs and Directors Organization, Chair 2009
 2008–2010 Institute for Personalized Cancer Therapy (IPCT) at M.D. Anderson
 Cancer Center, External Advisory Board Member
 2012-present Aegean Conference on Tumor Microenvironment and Cellular Stress, Co-Organizer

Grant Support

NIH R01 CA64489 (Giaccia, P.I.) "Regulation of p53 in Cervical Carcinoma by Heat/Hypoxia"	05/03/96–02/29/00
NIH R01 CA73832 (Giaccia, P.I.) "Molecular Physiology of Hypoxia Induced Stress"	12/01/97–11/30/00
Department of the Army DAMD17-19-1-9004 (Peehl, P.I.) "A Unifying Theory of Prostate Cancer"	02/15/99–09/14/01
Varian Biosynergy (Giaccia, P.I.) "Identification and Isolation of Genes Induced by Ionizing Radiation and Low Oxygen Conditions (Hypoxia)"	09/01/96–09/30/01
NIH P01 CA67166 (Brown, P.I.) "Tumor Hypoxia: Molecular Studies and Clinical Exploitation"	06/15/96–03/31/02
March of Dimes 6-FY99-366 (Giaccia, Co-Investigator) "Molecular Basis for Hypoxia Regulation of IGF1P-1 and its Relevance to Intrauterine Fetal Hypoxia Growth Restriction During Human Pregnancy"	06/01/99–05/31/02
Aventis RPR (Giaccia, P.I.) "Post-Transcriptional Regulation of Gene Expression by Hypoxia Through Highly Conserved RNA Sequences"	01/01/00–12/31/02
NIH R01 HD-36732 (Giaccia, Co-Investigator) "Hypoxia, IGF1P-1 and Human Fetal Growth"	03/01/00–02/28/04
NIH R01 CA88480 (Giaccia, P.I.) "Hypoxia and Gene Repression"	07/01/00–06/30/05

NIH P01 CA67166 (Giaccia, P.I.) "Hypoxia: Molecular Studies and Clinical Exploitation"	09/15/01–06/30/07
Damon Runyon Cancer (Koong, P.I., Giaccia/Co-Mentor) Research Foundation "Modulation of Protein Kinase C as a Novel Hypoxia-Specific Therapeutic Strategy"	07/01/02–6/30/07
NIH P01 CA082566 (Brown, P.I.) "Development of New Hypoxic Cytotoxins for Cancer Therapy"	04/09/04–3/31/09
NIH EB005442-01A2 (Graves, P.I.) "In Vivo Imaging of Hypoxia-Inducible Physiology"	06/01/07–05/31/09
14IB-0039 (Wu, P.I.) "Imagine of Novel Stem Cell Therapy Targeting Breast Cancer"	07/01/08–12/31/09
NIH R01 CA88480 (Giaccia, P.I.) "Hypoxia and Gene Repression"	07/01/05–04/30/10
NIH R01 CA118582 (Le, P.I.) "Defining Molecular Markers for Tumor Hypoxia"	04/01/06–02/28/11
NIH R01 CA116685 (Giaccia, P.I.) "CTGF in Pancreatic Tumor Growth & Therapy"	09/27/06–07/31/11
NIH P01 CA67166 (Giaccia, P.I.) "Hypoxia: Molecular Studies and Clinical Exploitation"	02/09/07–01/31/13
NIH T32 CA09302 (Giaccia, P.I.) "Cancer Etiology, Prevention, Detection & Diagnosis"	07/01/07–06/30/13
NIH T32 CA121940 (Giaccia, P.I.) "Postdoctoral Training in the Radiation Sciences"	04/01/07–03/31/12
NIH CA120526 (Powell, P.I.) Melanocyte Survival and Transformation: Hypoxia & PI3 Kinase/Akt/mTOR"	07/01/07–05/31/11
NIH P30 CA124435 (Mitchell, P.I.) "Stanford University Cancer Center"	06/04/07–05/31/10
NIH/R01 CA131199 (Graves P.I.) "Small Animal Image-Guided Radiotherapy"	03/10/08–03/09/13
NIH/NIDDK R01 AR048191 (Schipani, P.I.) "Hypoxia and Differentiation"	04/01/08–03/31/13
RadCCORE (Dewhirst, P.I.) NIH Subaward (Giaccia) "Molecular Mechanisms of Radioprotection"	08/01/12–07/31/13

NIH/NHLBI R01 HL095571 (Wu, P.I.) "Integrated Strategies for Treatment of Myocardial Ischemia"	02/01/10–11/30/14
NIH R37 CA88480 (Giaccia, P.I.) "Hypoxia and Gene Repression"	05/01/10–04/30/16
NIH P30 CA124435 (Mitchell, P.I.) "Stanford University Cancer Center"	06/01/07–05/31/16
NIH/NIDDK R01 AR065403 (Schipani, P.I.) "HIF-1 α , a Survival and Differentiation Factor for Cartilage"	10/01/13–09/31/18
NIH P01 CA67166 (Giaccia, P.I.) "Hypoxia: Molecular Studies and Clinical Exploitation"	06/01/13–05/31/19 NCX
NIH T32 CA09302 (Giaccia, P.I.) "Cancer Etiology, Prevention, Detection & Diagnosis"	07/01/13–06/30/18
NIH T32 CA121940 (Giaccia, P.I.) "Postdoctoral Training in the Radiation Sciences"	09/24/14–08/31/19
NIH/UCSF P20 CA183640 (Roach, P.I.) "NAPTA: Optimizing Clinical Trial Design & Delivery of Particle Therapy for Cancer"	02/10/15–01/31/16
NIH R01 CA198291 (Giaccia, P.I.) "Preclinical Testing of a Novel Therapy Targeting AXL in Advanced Kidney Cancer"	09/30/16–09/29/19
NIH R35 CA197713 (Giaccia, P.I.) "The Impact of Mitochondrial Repression and Lipid Accumulation by HIF on Tumor Growth"	08/01/15–06/30/22
No grant # (Giaccia, P.I.) MRC Radiation Biology Unit	04/01/17-3/31/22
No grant # (Giaccia, P.I.) CRUK RadNet Center	11/1/19-10/31/24

Patents

1. Administering Protein Kinase C Activator Consisting of Phorbol Ester, Diacylglycerol, or Thapsigargin to Hypoxic Cells
US Patent 5,646,185, July 8, 1997
2. Hypoxia-inducible Human Genes, Proteins, and Uses Thereof
US Patent WO1999048916 A3, January 20, 2000
3. Diagnostic Marker for Tumor Hypoxia and Prognosis
US Patent 2003/0044862 A1, March 6, 2003

4. Methods and Compositions for Regulating Adipogenesis
US Patent (Pending)
Attorney Docket No. P35045 068445.0103
5. Anaerobe Targeted Enzyme-Mediated Prodrug
US Patent 6,416,754
6. Inhibition of Lysyl Oxidase for the Prevention and Treatment of Cancer
US Patent Application 60/692,435
Attorney Docket No: 286003023800
7. Novel ShRNA Gene Therapy for Treatment of Ischemic Heart Disease
US Patent 8,680,064, March 25, 2014
Attorney Docket No: S08-044
8. Heteroaryl Benzamides, Compositions and Methods of Use in Cancer Treatment
Attorney Docket No: S08-433
9. The use of prolyl hydroxylase inhibitors as a radioprotective drug for the lower gastrointestinal tract
US Patent WO 2013032893 A1, March 7, 2013
10. Inhibition of AXL Signaling in Anti-Metastatic Therapy
US Patent WO2014035828 A3, May 1, 2014
11. Substituted Benzamides and Their Uses
US 9,085,570
Stanford ref.: S10-180
12. Antifibrotic Activity of GAS6 Inhibitor
PCT/US2015/066498
Attorney Docket No: RUGA-002WO
S15-013 RUGA

Graduate Students

Eunice Chen	(1988–2001)
Luis Alvarez	(1991–1994)
Albert Koong	(1991–1994)
Sophia Kuo	(1992–1993)
Thomas Graeber	(1992–1995)
Susannah Green	(1995–2000)
Wayne Zundel	(1995–2000)
Rudy Alarcon	(1996–2000)
Heather Maecker	(1997–2001)
Patrick Sutphin	(1998–2007)
Rachel Freiberg	(1999–2005)
Denise Chan	(2000–2009)
Lucrezia Fontana	(2001–2002)
Fiona Kaper	(2000–2005)
Anje Hoeg	(2005–2006)
Hanne Jensen	(2005–2006)
Muriel Kaufmann	(2006–2007)
Laura Castellini	(2007–2008, 2010-2015)

Phuong-Vi Nguyen (2007–2009)
Tiffany Taylor (2008–2009)
Katherine Fuh (2009–2013)
Tiffany Williams (2011–2015)
Anh Diep (2011–2019)
Jimmy Xu (2018–present)

Summer Veterinary Students

Christina Alarcon DVM
Meg Musser DVM
Amanda Koehne DVM
John Nagel
Alexandra Schauer

Publications

1. Stamato, T.D., Weinstein, R., **Giaccia, A.J.** and Mackenzie, L. Isolation of a cell cycle-dependent gamma ray-sensitive Chinese hamster ovary cell. *Somat Cell Genet* 9:165–173, 1983 (PMID: 6836453).
2. Stamato, T.D., Weinstein, R. and **Giaccia, A.** Timing of mutation-fixation events in ethyl methane sulfonate-treated Chinese hamster cells. *Somat Cell Mol Genet* 10:429–434, 1984 (PMID: 6589795).
3. **Giaccia, A.**, Weinstein, R., Hu, J. and Stamato, T.D. Cell-cycle dependent repair of double strand breaks in a gamma-ray-sensitive Chinese hamster cell. *Somat Cell Mol Genet* 11:485–491, 1985 (PMID: 3862244).
4. Stamato, T., Weinstein, R., Peters, B., Hu, J., Doherty, B. and **Giaccia, A.** Delayed mutation in Chinese hamster cells. *Somat Cell Mol Genet* 13:57–65, 1987 (PMID: 3468633).
5. Stamato, T.D., Peters, B., Patil, P., Denko, N., Weinstein, R. and **Giaccia, A.J.** Isolation and characterization of bleomycin-sensitive Chinese hamster ovary cells. *Cancer Res* 47:1588–1592, 1987 (PMID: 2434221).
6. Stamato, T.D., Dipatri, A. and **Giaccia, A.J.** Cell-cycle-dependent repair of potentially lethal damage in the XR-1 gamma-ray-sensitive Chinese hamster ovary cell. *Radiat Res* 115:325–333, 1988 (PMID: 3406371).
7. Dasgupta, P., Linnenbach, A.J., **Giaccia, A.J.**, Stamato, T.D. and Reddy, E.P. Molecular cloning of the breakpoint region on chromosome 6 in cutaneous malignant melanoma: evidence for deletion in the *c-myb* locus and translocation of a segment of chromosome 12. *Oncogene* 4:1201–1205, 1989 (PMID: 2677917).
8. Stamato, T.D., Richardson, E., Ianacone, J., MacLaren, R.A., Denko, N. and **Giaccia, A.** Isolation and characterization of glucose-6-phosphate dehydrogenase-deficient Chinese hamster cells derived from pure mutant colonies. *Mutagenesis* 4:259–264, 1989 (PMID: 2674604).
9. Denko, N., **Giaccia, A.J.**, Peters, B. and Stamato, T.D. An asymmetric field inversion gel electrophoresis method for the separation of large DNA molecules. *Anal Biochem* 178:172–176, 1989 (PMID: 2729570).
10. **Giaccia, A.J.**, Richardson, E., Denko, N. and Stamato, T.D. Genetic analysis of the XR-1 mutation in hamster and human hybrids. *Somat Cell Mol Genet* 15:71–77, 1989 (PMID: 2916163).
11. **Giaccia, A.J.**, MacLaren, R., Denko, N., Nicolaou, D. and Stamato, T.D. Increased sensitivity to killing by restriction enzymes in the XR-1 DNA double-strand break repair-deficient mutant. *Mutat Res* 236:67-76, 1990. (PMID: 2164147)
12. **Giaccia, A.J.**, Denko, N., MacLaren, R., Mirman, D., Waldren, C. and Stamato, T.D. Human chromosome 5 complements the DNA double-strand break-repair deficiency and gamma-ray sensitivity of the XR-1 hamster variant. *Am J Hum Genet* 47:459-469, 1990 (PMID: 1697445).
13. **Giaccia, A.J.**, Evans, J. and Brown, J.M. Use of fluorescent *in situ* hybridization to detect chromosomal rearrangements in somatic cell hybrids. *Gene Chromosome Can* 2:248-251, 1990 (PMID: 2078516).

14. Hentosh, P., Collins, A.R.S., Correll, L., Fornace, A.J., Jr., **Giaccia, A.J.** and Waldren, C. Genetic and biochemical characterization of the CHO-UV-1 mutant defective in post replication recovery of DNA. *Cancer Res* 50:2356-2362, 1990 (PMID: 2317821).
15. Bahari, I.B., Bedford, J., **Giaccia, A.J.** and Stamato, T.D. Measurement of the relative proportion of symmetrical and asymmetrical chromosome-type interchanges induced by gamma-radiation in human-hamster hybrid cells. *Radiat Res* 123:105-107, 1990.
16. Evans, J.W., Chang, J., **Giaccia, A.J.**, Pinkel, D. and Brown, J.M. The use of fluorescence *in situ* hybridization combined with premature chromosome condensation for the identification of chromosome damage. *Brit J Cancer* 63:517-521, 1991 (PMID: 2021536).
17. **Giaccia, A.J.**, Shieh, J., Cholon, A. and Brown, J.M. Biochemical evidence for two different mechanisms for bleomycin cell killing. *Mutat Res* 263:69-75, 1991 (PMID: 1710776).
18. Anderson, R.L., Fong, K.J., Gabriele, T., Lavagnini, P., Hahn, G.M., Evans, J.W., Waldren, C.A., Stamato, T.D. and **Giaccia, A.J.** Loss of the intrinsic heat resistance of human cells and changes in Mr 70,000 heat shock protein expression in human X hamster hybrids. *Cancer Res* 51:2636-2641, 1991 (PMID: 2021941).
19. Biedermann, K.A., Sun, J., **Giaccia, A.J.**, Tosto, L. and Brown, J.M. *Scid* mutation in mice confers hypersensitivity to ionizing radiation and a deficiency in DNA double strand break repair. *Proc Natl Acad Sci USA* 88:1394-1397, 1991 (PMID: 1996340).
20. **Giaccia, A.J.**, Lewis, A.D., Denko, N., Cholon, A., Evans, J.W., Waldren, C., Stamato, T.D. and Brown, J.M. The hypersensitivity of the Chinese hamster ovary variant BL-10 to bleomycin killing is due to a lack of glutathione S-transferase-a activity. *Cancer Res* 51:4463-4469, 1991 (PMID: 1714344).
21. **Giaccia, A.J.**, Auger, E.A., Koong, A., Terris, D., Minchinton, A., Hahn, G.M. and Brown, J.M. Activation of the heat shock transcription factor by hypoxia in normal and tumor cell lines *in vivo* and *in vitro*. *Int J Radiat Oncol Biol Phys* 23:891-897, 1992 (PMID: 1618682).
22. Kim, C., **Giaccia, A.J.**, Strulovici, B. and Brown, J.M. Differential expression of protein kinase C ϵ protein in lung cancer cell lines by ionising radiation. *Br J Cancer* 66:844-849, 1992 (PMID: 1329908).
23. Cholon, A., **Giaccia, A.J.**, Lewis, A.D., Hickson, I. and Brown, J.M. What role do glutathione S-transferases play in the cellular response to ionizing radiation? *Int J Radiat Oncol Biol Phys* 22:759-763, 1992 (PMID: 1544849).
24. **Giaccia, A.J.**, Schwartz, J., Shieh, J. and Brown, J.M. The use of asymmetric-field inversion gel electrophoresis to predict tumor cell radiosensitivity. *Radiother Oncol* 24:231-238, 1992 (PMID: 1410578).
25. **Giaccia, A.J.**, Biedermann, K.A., Tosto, L.M., Minchinton, A.I., Kovacs, M.S. and Brown, J.M. Characterization of a CHO cell line resistant to killing by the hypoxic cell cytotoxin SR 4233. *Int J Radiat Oncol Biol Phys* 22:681-684, 1992 (PMID: 1544836).
26. Abella Columna, E., **Giaccia, A.J.**, Evans, J.W., Yates, J.W. and Morgan, W.F. Analysis of restriction enzyme induced chromosomal aberrations by fluorescence *in situ* hybridization. *Environ Mol Mutagen* 22:26-33, 1993 (PMID: 8393403).

27. Kuo, S., Saad, A.H., Koong, A.C., Hahn, G.M. and **Giaccia, A.J.** Potassium channel activation in response to low doses of g-radiation involves reactive oxygen intermediates in non-excitatory cells. *Proc Natl Acad Sci USA* 90:908-912, 1993 (PMID: 8430104).
28. Auger, E.A., **Giaccia, A.J.** and Hahn, G.M. Heat sensitivity of bleomycin-sensitive CHO derivatives is not due to improper initiation of heat shock response. *Int J Hyperthermia* 9:275-284, 1993 (PMID: 7682247).
29. Koong, A.C., **Giaccia, A.J.**, Hahn, G.M. and Saad, A.H. Activation of potassium channels by hypoxia and reoxygenation in the human lung adenocarcinoma cell line A549. *J Cell Physiol* 156:341-347, 1993 (PMID: 8344990).
30. Alvarez, L., Evans, J.W., Wilks, R., Lucas, J.N., Brown, J.M. and **Giaccia, A.J.** Chromosomal radiosensitivity at intrachromosomal telomeric sites. *Gene Chromosome Canc* 8:8-14, 1993 (PMID: 7691162).
31. Mivechi, N.F., Koong, A.C., **Giaccia, A.J.** and Hahn, G.M. Analysis of HSF-1 phosphorylation in A549 cells treated with a variety of stresses. *Int J Hyperthermia* 10:371-379, 1994 (PMID: 7930803).
32. Koong, A., Chen, E., Lee, A.S., Brown, J.M. and **Giaccia, A.J.** Increased cytotoxicity of chronic hypoxic cells by molecular inhibition of GRP78 induction. *Int J Radiat Oncol Biol Phys* 28:661-666, 1993 (PMID: 8113109).
33. Koong, A., Chen, E. and **Giaccia, A.J.** Hypoxia causes the activation of nuclear Factor κ B through the phosphorylation of I κ B α on tyrosine residues. *Cancer Res* 54:1425-1430, 1994 (PMID: 8137243).
34. Koong, A.C., Auger, E.A., Chen, E.Y. and **Giaccia, A.J.** The regulation of GRP78 protein and messenger RNA levels by hypoxia is modulated by protein kinase C activators and inhibitors. *Radiat Res* 138:S60-S63, 1994 (PMID: 8146329).
35. Koong, A.C., Chen, E.Y., Kim, C.Y. and **Giaccia, A.J.** Activators of protein kinase C selectively mediate cellular cytotoxicity to hypoxic cells and not aerobic cells. *Int J Radiat Oncol Biol Phys* 29:259-265, 1994 (PMID: 8195017).
36. Koong, A.C., Chen, E.Y., Mivechi, N.F., Denko, N.C., Stambrook, P. and **Giaccia, A.J.** Hypoxic activation of nuclear factor- κ B is mediated by a *Ras* and *Raf* signaling pathway and does not involve MAP kinase (ERK1 or ERK2). *Cancer Res* 54: 5273-5279, 1994 (PMID: 7923153).
37. Saad, A.H., Kuo, S.S., Koong, A.C., Hahn, G.M. and **Giaccia, A.J.** Modulation of potassium channels by protein tyrosine kinase inhibitors. *J Cell Physiol* 161:142-148, 1994 (PMID: 7929599).
38. Graeber, T.G., Peterson, J.F., Tsai, M., Monica K., Fornace, Jr., A.J. and **Giaccia, A.J.** Hypoxia induces the accumulation of p53 protein, but the activation of a G₁-phase checkpoint by low oxygen conditions is independent of p53 status. *Mol Cell Biol* 14:6264-6277, 1994 (PMID: 8065358).
39. Denko, N.C., **Giaccia, A.J.**, Stringer, J.R. and Stambrook, P.N. The human Ha-*ras* oncogene induces genomic instability in murine fibroblasts within one cell-cycle. *Proc Natl Acad Sci USA* 91:5124-5128, 1994 (PMID: 8197195).

40. Brown, J.M. and **Giaccia, A.J.** Tumor hypoxia: the picture has changed in the 1990s. *Int J Radiat Biol* 65:95-102, 1994 (PMID: 7905916).
41. Mivechi, N. F. and **Giaccia, A.J.** Mitogen-activated protein kinase acts as a negative regulator of the heat shock response in NIH3T3 Cells. *Cancer Res* 55:5512-5519, 1995 (PMID: 7585624).
42. Minton, N.P., Mauchline, M.L., Lemmon, M. J., Brehm, J.K., Fox, M., Michael, N.P., **Giaccia, A.J.** and Brown, J.M. Chemotherapeutic tumour targeting using clostridial spores. *FEMS Microbiol Rev* 17:357-364, 1995 (PMID: 7576773).
43. Girinsky, T., Koumenis, C., Graeber, T.G., Peehl, D.M. and **Giaccia, A.J.** Attenuated response of p53 and p21 in primary cultures of human prostatic epithelial cells exposed to DNA damaging agents. *Cancer Res* 55:3726-3731, 1995 (PMID: 7543816).
44. Mazure, N.M., Chen, E.Y., Yeh, P., Laderoute, K.R. and **Giaccia, A.J.** Oncogenic transformation and hypoxia synergistically act to modulate vascular endothelial growth factor expression. *Cancer Res* 56:3436-3440, 1996 (PMID: 8758908).
45. Alarcon, R.M., Rupnow, B.A., Graeber, T.G., Knox, S.J. and **Giaccia, A.J.** Modulation of c-Myc activity and apoptosis *in vivo*. *Cancer Res* 56:4315-4319, 1996 (PMID: 8813114).
46. Fried, L.M., Koumenis, C., Peterson, S.R., Green, S.L., van Zijl, P., Allalunis-Turner, J., Chen, D.J., Fishel, R., **Giaccia, A.J.**, Brown, J.M. and Kirchgessner, C.U. The DNA damage response in DNA-dependent protein kinase-deficient SCID mouse cells: Replication protein a hyperphosphorylation and p53 induction. *Proc Natl Acad Sci USA* 93:13825-13830, 1996 (PMID: 8943020).
47. Fox, M.E., Lemmon, M.J., Mauchline, M.L., Davis, T.O., **Giaccia, A.J.**, Minton, N.P. and Brown, J.M. Anaerobic bacteria as a delivery system for cancer gene therapy: *in vitro* activation of 5-fluorocytosine by genetically engineered clostridia. *Gene Ther* 3:173-178, 1996 (PMID: 8867865).
48. Bergeron, M., Mivechi, N.F., **Giaccia, A.J.** and Giffard, R.G. Mechanism of heat shock Protein 72 induction in primary cultured astrocytes after oxygen-glucose deprivation. *Neurol Res* 18:64-72, 1996 (PMID: 8714540).
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