

CURRICULUM VITAE Name: Federico Quaini

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Date and place of birth: 07/04/1948, Cremona, ITALY

Education

High School: Liceo Classico 1966

M.D.: University of Parma 1974

Board in Hematology, University of Modena 1977

Current Italian Appointment Adjunct Professor of Medicine, University of Parma

Recent Italian Appointments Associate Professor of Oncology, University of Parma

Director of the Cardiac Stem Cell Center CISTAC,
University of Parma

Expert Manager on Regenerative Medicine, University
Hospital Parma

Coordinator School of Specialization in Oncology

Previous Appointments 1979-1985: Assistant Professor of Medicine, University of
Parma

December 1981 and January - July 1984: Research Assistant Professor, Department of
Anatomy, New York Medical College, New York, USA

1984: Adjunct Assistant Professor of Histology, City College University of the NYU,
New York, USA

1985-1996: Associate Professor of Medicine, University of Parma

1987: Research Assistant Professor, Department of Anatomy, NY Medical College,
New York, USA

1994, 1997, 2001-2007: Visiting Professor, Cardiovascular Research Institute,
Department of Medicine, NY Medical College, New York, USA

Associate Professor of Oncology, University of Parma 1996-

Teaching positions: Lecturer on the Course in Hematology-Oncology, Faculty of
Medicine; and Course of Professions on Obstetric and Gynecology -University of
Parma

Ongoing collaborative work: Marcello Tiseo, Medical Oncology, University/Hospital
of Parma on the role of the immune contexture on lung cancer; 2) Giovanni Roti,
Hematology and Bone Marrow Transplantation-Parma on novel therapeutic targets in
leukemia and cancer; Nicola Sverzellati, Radiology Department University/Hospital
of Parma on the identification of immune-radiomic signature radiomics in lung
cancer; P. Madeddu, Experimental Cardiovascular Medicine, Bristol University, UK
on diabetes as a stem cell disease

Referee: PRIN e FIRB scientific projects from the Italian Ministry of University
(MIUR), Bandi di Ricerca Università di Padova, Bandi di Ricerca Regione Toscana.
Heart Research UK, European RESTART 2016 – 2020 Programmes, e-COST Open
Call Collection OC-2018-1, Georgian National Science Foundation.

Editorial Board PloSOne

Reviewer for: PloSOne, Stem Cell, Scientific Reports, Biochemical Pharmacology,
Stem Cell Translational Medicine, Frontiers, British Journal of Cancer, Journal of
Cardio-Thoracic Surgery, Technology in Cancer Research

Previously Supported Research:

Co-Principal Investigator of the NIH Grant entitled: Cardiac Stem Cells and the
Infarcted aging heart, 2004-2009;

-Principal Investigator of PRIN MIUR project 2007AL2YNC entitled: Cardiotoxicity of anti-cancer therapy involves resident cardiac stem-progenitor cells. 2007-2009.

-Co-Principal investigator of the European Project N° 214539 FP7-NMP-2007: BIOSCENT BIOactive highly porous and injectable Scaffolds controlling stem cell recruitment, proliferation and differentiation and enabling angiogenesis for Cardiovascular ENgineered Tissues, 2008-2013

-Co-Principal Investigator of Regional Project on Regenerative Medicine, 2008-2012

Actual Supported Research:

- Co-Principal Investigator of AIRC 2017 project: Study of PD-L1 and other immunotherapy efficacy predictors on cytology and circulating tumor cells in advanced NSCLC
- Co-Principal Investigator of the European Cooperation in Science and Technology project: CA16122 – BIONECA 2017-2020

Membership

International Association for the Study of Lung Cancer
European Society of Medical Oncology
Council Basic Cardiovascular Science
Italian Society of Cardiovascular Research

Statement of Interest: Tumor Microenvironment, Translational Research in Normal and Cancer Stem Cells, Regenerative Medicine, Identification of the role of stem cells in several pathologic states including cardiovascular and lung diseases.

Scientific Publications

1. Delsignore R, Baroni MC, Rizzoli V, Quaini F, Mangoni L, Butturini U. The problem of infections in acute leukemias: origin, therapy and prevention by protective isolation *Ateneo Parmense Acta Biomed* 48:381-403, 1977
2. Rizzoli V, Sansoni P, Mangoni L, Quaini F, Pigoli G, Delsignore R, Baroni MC, Butturini U Erythropoietic stimulating activity of the liver in the neonatal life of the rat. *Haematologica* 63: 375-84, 1978
3. Delsignore R, Quaini F, Rizzoli V, Baroni MC, Zavaroni G, Butturini U Sézary syndrome with terminal evolution in acute myeloblastic leukemia *G Clin Med* 60:560-8, 1979
4. Orlic D, Quaini F, Kanski AA, Wu JM 2'5' -Adenylate inhibition of erythropoietin-dependent colony formation *Stem Cells* 1: 261-272, 1981
5. Orlic D, Wu JM, Carmichael, Quaini F, Kobylack M, Gordon AS Increased erythropoiesis and 2'5' - A polymerase activity in the marrow and spleen of phenylhydrazine-injected rats *Exp Hematol* 10: 478-490, 1982
6. Orlic D, Kirk E, Quaini F Increased 2,5 -Adenylate synthetase activity in the spleens of balb/c mice during hypoxia-stimulated erythropoiesis *Exp Hematol* 13: 821-828, 1985
7. Borelli TJ, Konno S, Vuolo LL, Quaini F, Wu JM Induction of human HL-60 leukemic cell differentiation by immune interferon is accompanied by an increase in NADase activity and by a decrease in DNA-binding proteins. *Biochemistry International* 11: 61-68, 1985
8. Orlic D, Kirk E, Quaini F, Babbott S The 2'5' Adenylate (2-5 A) system in erythropoiesis. *Blood Cells* 10: 193-201, 1985
9. Silvestrini G, Ferraccioli GF, Quaini F, Palummeri E, Bonucci E Adult osteopetrosis: study of two brothers *Appl Pathol* 5: 184-192, 1987

10. Rigon G, Baratti M, Quaini F, Calzetti S. Polycythemic chorea. Description of a clinical case. *Minerva Med* 78:1325-9, 1987
11. Passeri M, Palummeri E, Baroni MC, Quaini F, Quintavalla A, Barbagallo M, Franchini D, Ugolotti D Isotope retention for assessment of bone turnover in involutional osteoporosis. *Clin Rheumatol Suppl* 2:35-40, 1989
12. Orlic D, Gill R, Feldschuh R, Quaini F, Malice A, Sandoval C Molecular mechanism for the inhibitory action of interferon on hematopoiesis. *Ann NY Acad Sci* 554: 36-49, 1989
13. Olivetti G, Lagrasta C, Quaini F, Ricci R, Moccia G, Capasso JM, Anversa P Capillary growth in anemia-induced ventricular wall remodeling in the rat heart. *Circ Res* 65:1182-90, 1989
14. Barbagallo M, Quaini F, Baroni MC, Barbagallo CM, Boiardi L, Passeri G, Arlunno B, Delsignore R, Passeri M Histological evidence of increased turnover in bone from spontaneously hypertensive rats. *Cardioscience* 2:15-7, 1991
15. Gelmini G, Quaini F, Mineo F, Moccia G, Ricci R, Lagrasta C, Delsignore R, Olivetti G Effects of hypochromic microcytic anemia induced by an iron-copper free diet on whole blood filterability and other hemorheological parameters in rats. *Cinical Hemorheology* 11: 605-610, 1991
16. Quaini F, Manganelli P, Pileri S, Magnani G, Ferrari C, Delsignore R, Sabattini E, Olivetti G: Immunohistological characterization of lymph node in two cases of adult onset Still's disease. *J Rheumatol* 18: 9-16, 1991
17. Roncella S, Francia Di Celle P, D'Amore SG, Casoli C, Cutrona G, Muzzolini C, Quaini F, Nicolo G, Foa R, Pistoia V Cellular and molecular characterization of two cases of Castleman's disease, plasma cell variant. *Leukemia and Lymphoma* 5: 391-399, 1991
18. Olivetti G, Quaini F, Lagrasta C, Ricci R, Tiberti GL, Capasso JM, Anversa P Myocyte cellular hypertrophy and hyperplasia contribute to ventricular wall remodeling in anemia-induced myocardial dysfunction in rats. *Am J Pathol* 141:1-8, 1992
19. Manganelli P, Ferraccioli G, Passalacqua R, Quaini F Polymyalgia rheumatica and malignant neoplasms. A report of 3 cases. *Recenti Prog Med* 83:200-2, 1992
20. Olivetti G, Cigola E, Lagrasta C, Ricci R, Quaini F, Monopoli A, Ongini E. Spirapril prevents left ventricular hypertrophy, decreases myocardial damage and promotes angiogenesis in spontaneously hypertensive rats. *J Cardiovasc Pharmacol* 21: 362-370, 1993
21. Olivetti G, Quaini F, Lagrasta C, Ricci R, Tosini P, Capasso JM, Anversa P Effects of genetic hypertension and nutritional anaemia on ventricular remodelling and myocardial damage in rats. *Cadiovasc Res* 27: 1316-25, 1993
22. Beltrami CA, Finato N, Rocco M, Feruglio GA, Puricelli C, Cigola E, Quaini F, Sonnenblick EH, Olivetti G, Anversa P Structural basis of end-stage failure in ischemic cardiomyopathy in humans. *Circulation* 89:151-163, 1994
23. Olivetti G, Melissari M, Balbi T, Quaini F, Cigola E, Sonnenblick EH, Anversa P Myocyte cellular hypertrophy is responsible for ventricular remodelling in the hypertrophied heart of middle aged individuals in the absence of cardiac failure. *Cardiovasc Res* 28: 1199-1208, 1994
24. Olivetti G, Melissari M, Balbi T, Quaini F, Sonnenblick EH, Anversa P Myocyte nuclear and possible cellular hyperplasia contribute to ventricular remodeling in the hypertrophic senescent heart in humans. *J Am Coll Cardiol* 24: 140-149, 1994

25. Quaini F, Cigola E, Lagrasta C, Saccani G, Quaini E, Rossi C, Olivetti G, Anversa P End-stage cardiac failure in humans is coupled with the induction of proliferating cell nuclear antigen and nuclear mitotic division in ventricular myocytes. *Circ Res* 75: 1050-1063, 1994
26. Cheng W, Reiss K, Kajstura J, Kowal K, Quaini F, Anversa P Downregulation of the IGF-1 system parallels the attenuation in the proliferative capacity of rat ventricular myocytes during postnatal development. *Lab Invest* 72: 646-58, 1995
27. Kajstura J, Mansukhani M, Cheng W, Krajewski S, Reed JC, Quaini F, Sonnenblick EH, Anversa P Programmed Cell Death and expression of the protooncogene bcl-2 in myocytes during postnatal maturation of the heart. *Exper Cell Res* 219, 110-121, 1995
28. Anversa P, Kajstura J, Reiss K, Quaini F, Baldini A, Olivetti G, Sonnenblick EH Ischemic Cardiomyopathy: myocyte cell loss, myocyte cellular hypertrophy, and myocyte cellular hyperplasia. *Ann NY Acad Sci* 752, 47-64, 1995
29. Olivetti G, Quaini F, Lagrasta C, Cigola E, Ricci R, Maestri R, Anversa P Cellular basis of ventricular remodeling after myocardial infarction in rats. *Cardioscience* 6:101-6, 1995
30. Olivetti G, Quaini F, Sala R, Lagrasta C, Corradi D, Bonacina E, Gambert S, Cigola E, Anversa P Acute myocardial infarction in humans is associated with activation of programmed myocyte cell death in the surviving portion of the heart. *J Mol Cell Cardiol* 28: 2005-2016, 1996
31. Gemignani F, Marchesi G, Di Giovanni G, Salih S, Quaini F, Nobile-Orazio E Low-grade non-Hodgkin B-cell lymphoma presenting as sensory neuropathy. *Eur J Neurol* 36:138-41, 1996
32. Olivetti G, Abbi R, Quaini F, Kajstura J, Cheng W, Nitahara JA, Quaini E, Di Loreto C, Beltrami CA, Krajewsky S, Reed J, Anversa P Apoptosis in the failing human heart. *N Engl J Med* 336: 1131-114, 1997
33. Manganelli P, Quaini F, Olivetti G, Savini M, Pileri S Relapsing polychondritis with Castleman-like lymphadenopathy: a case report. *Clin Rheumatol* 16: 480-484, 1997
34. Olivetti G, Cigola E, Maestri R, Lagrasta C, Quaini F The Failing Heart. *Adv Clin Path* 1:137-148, 1997
35. Manganelli P, Quaini F, Andreoli AM, Lagrasta C, Pilato F, Zuccarelli A, Monteverdi R, D'Aversa C, Olivetti G Quantitative analysis of apoptosis and bcl-2 in Sjogren Syndrome. *J Rheumatol* 24: 1552-59, 1997
36. Fraternali-Orcioni G, Falini B, Quaini F, Campo E, Piccioli M, Gamberi B, Pasquinelli G, Poggi S, Ascani S, Sabattini E, Pileri SA Beta-HCG aberrant expression in primary mediastinal large B-cell lymphoma. *Am J Surg Pathol* 23:717-21, 1999
37. Olivetti G, Cigola E, Maestri R, Corradi D, Lagrasta C, Quaini F. [Does apoptosis participate in heart failure?]. *Cardiologia*. 44 Suppl 1:859-61. 1999
38. Fiorina P, Astorri E, Albertini R, Secchi A, Mello A, Lanfredini M, Craveri A, Olivetti G, Quaini F Soluble antiapoptotic molecules and immune activation in chronic heart failure and unstable angina pectoris. *J Clin Immunol* 20:101-6, 2000
39. Olivetti G, Cigola E, Maestri R, Lagrasta C, Corradi D, Quaini F. Recent advances in cardiac hypertrophy. *Cardiovasc Res* 45:68-75, 2000
40. Manganelli P, Delsante G, Bianchi G, Fietta P, Quaini F. Remitting seronegative symmetrical synovitis with pitting oedema in a patient with myelodysplastic syndrome and relapsing polychondritis. *Clin Rheumatol* 20:132-5, 2001

41. Orlic D, Kajstura J, Chimenti S, Limana F, Jakoniuk I, Quaini F, Nadal-Ginard B, Bodine DM, Leri A, Anversa P. Mobilized bone marrow cells repair the infarcted heart, improving function and survival. *Proc Natl Acad Sci USA* 98: 10344-349, 2001
42. Leri A, Quaini F, Kajstura J, Anversa P. Myocyte death and myocyte regeneration in the failing human heart. *Ital Heart J* 2:12S-14S, 2001
43. Quaini F, Urbanek K, Beltrami AP, Finato N, Beltrami CA, Nadal-Ginard B, Kajstura J, Leri A, Anversa P. Chimerism of the transplanted human heart. *N Engl J Med* 346:15-22, 2002
44. Limana F, Urbanek K, Chimenti S, Quaini F, Leri A, Kajstura J, Nadal-Ginard B, Izumo S, Anversa P. bcl-2 overexpression promotes myocyte proliferation. *Proc Natl Acad Sci USA* 99: 6257-62, 2002
45. Urbanek K, Quaini F, Tasca G, Torella D, Castaldo C, Nadal-Ginard B, Leri A, Kajstura J, Quaini E, Anversa P. Intense myocyte formation from cardiac stem cells in human cardiac hypertrophy. *Proc Natl Acad Sci USA* 100:10440-5, 2003
46. Manganelli P, Fietta P, Martella EM, Quaini F. Clinical and histological coexistence of inflammatory pseudotumour of the lymph nodes and rheumatoid arthritis. *Clin Rheumatol.* 22:467-71, 2003
47. Quaini F, Urbanek K, Graiani G, Lagrasta C, Maestri R, Monica M, Boni A, Ferraro F, Delsignore R, Tasca G, Leri A, Kajstura J, Quaini E, Anversa P. The regenerative potential of the human heart. *Int J Cardiol* 95: 26-8, 2004
48. Kajstura J, Rota M, Whang B, Cascapera S, Hosoda T, Bearzi C, Nurzynska D, Kasahara H, Zias E, Bonafè M, Nadal-Ginard B, Torella D, Nascimbene A, Quaini F, Urbanek K, Leri A, Anversa P. Bone marrow cells differentiate in cardiac lineages after infarction independently of cell fusion. *Circ Res* 96:127-37, 2005
49. Urbanek K, Torella D, Sheikh F, De Angelis A, Nurzynska D, Silvestri F, Beltrami CA, Bussani R, Beltrami AP, Quaini F, Bolli R, Leri A, Kajstura J, Anversa P: Myocardial Regeneration by Activation of Multipotent Cardiac Stem Cells in Ischemic Heart Failure. *Proc Natl Acad Sci USA* 102: 8692-97, 2005
50. Linke A, Muller P, Nurzynska D, Casarsa C, Torella D, Nascimbene A, Castaldo C, Cascapera S, Bohm M, Quaini F, Urbanek K, Leri A, Hintze T, Kajstura J, Anversa P. Cardiac stem cells in the dog heart regenerate infarcted myocardium improving cardiac performance. *Proc Natl Acad Sci USA* 102: 8966-71, 2005
51. Graiani G, Lagrasta C, Migliaccio E, Spillmann F, Meloni F, Madeddu P, Quaini F, Padura IM, Lanfranccone L, Pelicci PG, Emanuelli C. Genetic deletion of the p66Shc adaptor protein protects from Angiotensin II-induced myocardial damage. *Hypertension* 46: 1-8, 2005
52. Urbanek K, Rota M, Cascapera S, Bearzi C, Nascimbene A, De Angelis A, Hosoda T, Chimenti S, Baker M, Limana F, Nurzynska D, Torella D, Rotatori F, Rastaldo R, Musso E, Quaini F, Leri A, Kajstura J, Anversa P. Cardiac stem cells possess growth factor-receptor systems that after activation regenerate the infarcted myocardium, improving ventricular function and long-term survival. *Circ Res* 97: 663-673, 2005
53. Spillmann F, Graiani G, Van Linthout S, Meloni M, Campesi I, Lagrasta C, Westermann D, Tschöpe C, Quaini F, Emanuelli C, Madeddu P. Regional and global protective effects of tissue kallikrein gene delivery to the peri-infarct myocardium. *Regenerative Medicine*; 1, 2: 235-254, 2006
54. Bearzi C, Rota M, Hosoda T, Tillmanns J, Nascimbene A, De Angelis A, Yasuzawa-Amano S, Trofimova I, Siggins RW, Lecapitaine N, Cascapera S, Beltrami AP, D'Alessandro DA, Zias E, Quaini F, Urbanek K, Michler RE, Bolli R,

- Kajstura J, Leri A, Anversa P. Human cardiac stem cells. *Proc Natl Acad Sci U S A* 28;104:14068-7, 2007
55. Stilli D, Lagrasta C, Berni R, Bocchi L, Savi M, Delucchi F, Graiani G, Monica M, Maestri R, Baruffi S, Rossi S, Macchi E, Musso E, Quaini F. Preservation of ventricular performance at early stages of diabetic cardiomyopathy involves changes in myocyte size, number and intercellular coupling. *Basic Res Cardiol* 102: 488-499, 2007
 56. Mastorci F, Vicentini M, Viltart O, Manghi M, Graiani G, Quaini F, Meerlo P, Nalivaiko E, Maccari S, Sgoifo A. Long-term effects of prenatal stress: Changes in adult cardiovascular regulation and sensitivity to stress. *Neurosci Biobehav Rev* 33 (2):191-203, 2009
 57. Fietta P, Delsante G, Quaini F. Hematologic manifestations of connective autoimmune diseases. *Clin Exp Rheumatol*. 27:140-54, 2009
 58. Oikawa A, Siragusa M, Quaini F, Mangialardi G, Katare RG, Caporali A, van Buul JD, van Alphen FP, Graiani G, Spinetti G, Kraenkel N, Prezioso L, Emanuelli C, Madeddu P. Diabetes Mellitus Induces Bone Marrow Microangiopathy. *Arterioscler Thromb Vasc Biol* 30:498-508, 2010
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 60. Meloni M, Caporali A, Graiani G, Lagrasta C, Katare R, Van Linthout S, Spillmann F, Campesi I, Madeddu P, Quaini F, Emanuelli C. Nerve growth factor promotes cardiac repair following myocardial infarction. *Circ Res*. 106:1275-84, 2010
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 62. Rossini A, Frati C, Lagrasta C, Graiani G, Scopece A, Cavalli S, Musso E, Baccarin M, Di Segni M, Fagnoni F, Germani A, Quaini E, Mayr M, Xu Q, Barbuti A, Difrancesco D, Pompilio G, Quaini F, Gaetano C, Capogrossi MC. Human Cardiac and Bone Marrow Stromal Cells exhibit distinctive properties related to their origin. *Cardiovasc Res*. 89:650-60, 2011
 63. Mormile R, De Michele M, Squarcia U, Quaini F. Hypertrophic cardiomyopathy in neonates of diabetic mothers: indirect evidence for a model of apoptotic reversibility by survivin? *Int J Cardiol*. 146:244-5, 2011
 64. Van Linthout S, Spillmann F, Graiani G, Miteva K, Peng J, Van Craeyveld E, Meloni M, Tolle M, Escher F, Subasiguller A, Doehner W, Quaini F, De Geest B, Schultheiss HP, Tschoepe C. Down-regulation of endothelial TLR4 signalling after apo A-I gene transfer contributes to improved survival in an experimental model of lipopolysaccharide-induced inflammation. *J Mol Med*. 89:151-60, 2011
 65. Possenti R, Muccioli G, Petrocchi P, Cero C, Cabassi A, Vulchanova L, Riedl M, Manieri M, Frontini A, Giordano A, Cinti S, Govoni P, Graiani G, Quaini F, Ghe C, Bresciani E, Bulgarelli I, Torsello A, Locatelli V, Sanghez V, Larsen B, Petersen J, Palanza P, Parmigiani S, Moles A, Levi A, Bartolomucci A. Characterization of a novel peripheral pro-lipolytic mechanism in mice: role of VGF-derived peptide TLQP-21. *Biochem J*. 2011 441:511-22

66. Mormile R, Vittori G, De Michele M, Squarcia U, Quaini F. Is telomerase the final downstream effector of the escape of cardiomyocytes from the point-of-no-return of apoptosis in infants of diabetic mothers? *Int J Cardiol.* 2011;151:378-80
67. Mormile R, Vittori G, De Michele M, Squarcia U, Quaini F. Surviving acute myocardial infarction (IMA): a match ruled by insulin and mitochondria? *Int J Cardiol.* 2011;150:226
68. Mormile R, Vittori G, De Michele M, Squarcia U, Quaini F. Postnatal regression of hypertrophic cardiomyopathy in infants of diabetic mothers: a crosstalk between Hox genes and epidermal growth factor (EGF) gene polymorphism? *Int J Cardiol.* 2011;150:340
69. Bocchi L, Savi M, Graiani G, Rossi S, Agnetti A, Stillitano F, Lagrasta C, Baruffi S, Berni R, Frati C, Vassalle M, Squarcia U, Cerbai E, Macchi E, Stilli D, Quaini F, Musso E. Growth factor-induced mobilization of cardiac progenitor cells reduces the risk of arrhythmias, in a rat model of chronic myocardial infarction. *PLoS One.* 2011;18;6(3):e17750
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73. Mormile R, Vittori G, De Michele M, Squarcia U, Quaini F. Is a deceptive role of IGF-1 in Sirt1-PARP1 interactions the primary step of postnatal regression of hypertrophic cardiomyopathy in infants of diabetic mothers? *Int J Cardiol.* 2012 Jan 12;154(1):87-8. Epub 2011 Nov 7.
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75. Carnevali L, Mastorci F, Graiani G, Razzoli M, Trombini M, Pico-Alfonso MA, Arban R, Grippo AJ, Quaini F, Sgoifo A. Social defeat and isolation induce clear signs of a depression-like state, but modest cardiac alterations in wild-type rats. *Physiol Behav.* 2012 May 15;106(2):142-50. Epub 2012 Feb 7.
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78. Delucchi F, Berni R, Frati C, Cavalli S, Graiani G, Sala R, Chaponnier C, Gabbiani G, Calani L, Del Rio D, Bocchi L, Lagrasta C, Quaini F, Stilli D. Resveratrol

- Treatment Reduces Cardiac Progenitor Cell Dysfunction and Prevents Morpho-Functional Ventricular Remodeling in Type-1 Diabetic Rats. *PLoS One*. 2012;7(6):e39836. Epub 2012 Jun 29.
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 82. Carnevali L, Trombini M, Rossi S, Graiani G, Manghi M, Koolhaas JM, Quaini F, Macchi E, Nalivaiko E, Sgoifo A. Structural and electrical myocardial remodeling in a rodent model of depression. *Psychosom Med*. 2013 Jan;75(1):42-51.
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