Dario DiFrancesco

List of publications

Full papers

1. -DiFrancesco,D. & McNaughton,P.A. (1979) The effects of Calcium on outward membrane currents in the cardiac Purkinje fibres. **J.Physiol.** 289, 347-373
2. -Brown,H.F., DiFrancesco,D. & Noble,S.J. (1979a) How does adrenaline accelerate the heart? **Nature**, 280, 235-236
3. -DiFrancesco,D., Ohba,M. & Ojeda,C. (1979) Measurement and significance of the reversal potential for the pacemaker current i_{K2} in Purkinje fibres. **J.Physiol.** 297, 135-162
4. -Brown,H.F., DiFrancesco,D. & Noble,S.J. (1979b) Cardiac pacemaker oscillation and its modulation by autonomic transmitters. **J.Exp.Biol.** 81, 175-204
5. -DiFrancesco,D., Noma,A. & Trautwein,W. (1979) Kinetics and magnitude of the time-dependent potassium current in the rabbit sino-atrial node: effect of external potassium. **Pflügers Arch.** 381, 271-279
6. -DiFrancesco,D., Noma,A. & Trautwein,W. (1980) Separation of current induced by potassium accumulation from acetylcholine-induced relaxation current in the rabbit SA node. **Pflügers Arch.** 387, 83-90
7. -Brown,H.F., DiFrancesco,D., Noble,D. & Noble,S.J. (1980) The contribution of potassium accumulation to outward currents in frog atrium. **J.Physiol.** 306, 127-149
8. -DiFrancesco,D. & Noble,D. (1980) The time course of potassium current following potassium accumulation: analytical solution using a linear approximation. **J.Physiol.** 306, 151-173
9. -Brown,H.F. & DiFrancesco,D. (1980) Voltage-clamp investigations of membrane currents underlying pacemaker activity in rabbit sino- atrial node. **J.Physiol.** 308, 331-351
10. -DiFrancesco,D. & Ojeda,C. (1980) Properties of the current i_f in the sinoatrial node of the rabbit compared with those of the current i_{K2} in Purkinje fibres. **J.Physiol.** 308, 353-367
11. -DiFrancesco,D. (1981a) A new interpretation of the pacemaker current i_{K2} in calf Purkinje fibres. **J.Physiol.** 314, 359-376
12. -DiFrancesco,D. (1981b) A study of the ionic nature of the pacemaker current in calf Purkinje fibres. **J.Physiol.** 314, 377-393
13. -DiFrancesco,D. (1982) Block and activation of the pacemaker i_f channel in calf Purkinje fibres: effects of potassium, caesium and rubidium. **J.Physiol.** 329, 485-507
14. -DiFrancesco,D. & Ferroni,A. (1983) Delayed activation of the cardiac pacemaker current and its dependence on conditioning pre- hyperpolarization. **Pflügers Arch.** 396, 265-276
15. -DiFrancesco,D. (1984) Characterization of the pacemaker (i_f) current kinetics in calf Purkinje fibres. **J.Physiol.** 348, 341-367
16. -DiFrancesco,D. & Ferroni,A. & Visentin,S. (1984) Barium-induced blockade of the inward rectifier in calf Purkinje fibres. **Pflügers Arch.** 402, 446-453
17. -DiFrancesco,D. & Noble,D. (1985) A model of cardiac electrical activity incorporating ionic pumps and concentration changes. **Phil. Trans. R. Soc. Lond. B** 307, 353-398
18. -DiFrancesco,D., Ferroni,A., Visentin,S. & Zaza,A. (1985) Cadmium- induced blockade of the cardiac fast Na channels in calf Purkinje fibres. **Proc. R. Soc. Lond. B** 223, 475-484
19. -DiFrancesco,D. Ferroni,A., Mazzanti,M. & Tromba,C. (1986) Properties of the hyperpolarizing-activated current (i_f) in cells isolated from the rabbit sino-atrial node. **J. Physiol.** 377, 61-88
20. -DiFrancesco,D. (1986) Characterization of single pacemaker channels in cardiac sino-atrial node cells. **Nature** 324, 470-473
21. -DiFrancesco,D. & Tromba, C. (1987) Acetylcholine inhibits activation of the cardiac hyperpolarizing-activated current, i_f. **Pflügers Arch.** 410, 139-142

22. -DiFrancesco,D. & Tromba,C. (1988a) Inhibition of the hyperpolarizing -activated current, i_f, induced by acetylcholine in rabbit sino-atrial node myocytes. **J. Physiol.** 405, 477-491
23. -DiFrancesco,D. & Tromba,C. (1988b) Muscarinic control of the hyperpolarizing-activated current i_f in rabbit sino-atrial node myocytes. **J. Physiol.** 405, 493-510
24. -Mazzanti,M. & DiFrancesco,D. (1989) Intracellular Ca modulates K-inward rectification in cardiac myocytes. **Pflügers Arch.** 413, 322-324
25. -DiFrancesco,D., Ducouret,P. & Robinson,R.B. (1989) Muscarinic modulation of cardiac rate at low acetylcholine concentrations. **Science**, 243, 669-671
26. -Cohen,I.S., DiFrancesco,D., Mulrine,N.K. & Pennefather,P. (1989) Internal and external K^+ affect the gating of the inward rectifier in cardiac Purkinje myocytes. **Biophys. J.**, 55, 197-202
27. -Chang,F., Gao,J., Tromba,C., Cohen,I.S. & DiFrancesco,D. (1990) Acetylcholine reverses the effects of ß-agonists on the pacemaker current in canine Purkinje fibres but has no direct action. A difference between primary and secondary pacemakers. **Circulation Res.** 66, 633-636
28. -Visentin,S. & Zaza,A. , Ferroni,A., Tromba, C. & DiFrancesco,D. (1990) Sodium current block caused by group 2b cations in calf Purkinje fibres and in guinea-pig ventricular myocytes. **Pflügers Arch.** 417, 213-222
29. -DiFrancesco,D. (1991) The contribution of the "pacemaker" current (i_f) to the generation of spontaneous activity in rabbit sino-atrial node myocytes. **J. Physiol.** 434, 23-40
30. -DiFrancesco,D., Porciatti,F., Janigro,D., Maccaferri,G., Mangoni,M., Tritella,T., Chang,F. & Cohen,I.S. (1991) Block of the cardiac pacemaker current (i_f) in rabbit SA node and in the canine Purkinje fibres by 9-amino-1,2,3,4-Tetrahydroacridine. **Pflügers Arch.** 417, 611-615
31. -DiFrancesco,D. & Tortora,P. (1991) Direct activation of cardiac pacemaker channels by intracellular cyclic AMP. **Nature** 351, 145-147
32. -DiFrancesco,D., Porciatti,F. & Cohen,I.S. (1991) The effects of manganese and barium on i_f in the rabbit sino-atrial node myocytes. **Experientia**, 47, 449-452
33. -Zaza,A., Maccaferri,G., Mangoni,M. & DiFrancesco,D. (1991) Intracellular calcium does not directly modulate cardiac pacemaker (i_f) channels. **Pflügers Arch.**, 419, 662-664
34. -Chang,F., Cohen,I.S., DiFrancesco,D., Rosen,M.R. & Tromba,C. (1991) Effects of protein kinase inhibitors on canine Purkinje fibre pacemaker depolarization and the pacemaker current i_f. **J. Physiol.** 440, 367-384
35. -DiFrancesco,D., Ducouret,P. & Robinson,R.B. (1992) Differential effects of ACh on cardiac pacemaker cells. **Trends Neurosci**. 15, 249
36. -Noble,D., Denyer,J.C., Brown,H.F. and DiFrancesco,D. (1992) Reciprocal role of the inward currents $i_{b,Na}$ and i_f in controlling and stabilizing pacemaker frequency of rabbit sino-atrial node cells. **Proc. R. Soc. Lond. B** 250, 199-207
37. -Cui,J., Mandel,G., DiFrancesco,D., Kline,R.P., Pennefather,P., Datyner,N.B., Haspel,H.C. & Cohen,I.S. (1992) Expression and characterization of a canine hippocampal inwardly rectifying K^+ current in *Xenopous* oocytes. **J. Physiol.** 457, 229-246
38. -Maccaferri,G., Mangoni,M., Lazzari,A. & DiFrancesco,D. (1993) Properties of the hyperpolarization-activated current in rat hippocampal CA1 pyramidal cells. **J. Neurophysiol.** 69, 2129-2136
39. -DiFrancesco, D. & Mangoni,M. (1994) Modulation of single hyperpolarization-activated channels (i_f) by cAMP in the rabbit sino-atrial node. **J. Physiol**. 474, 473-482
40. -DiFrancesco,D. (1994) Some properties of the UL-FS 49 block of the hyperpolarization-activated (i_f) current in SA node myocytes. **Pflügers Arch**. 427, 64-70
41. -Maccaferri,G., Janigro,D., Lazzari,A. & DiFrancesco,D. (1994) Cesium prevents maintenance of long-term depression in hippocampal CA1 neurons. **NeuroReport** 5, 1813-1816
42. -DiFrancesco,D. (1995) Cardiovascular controversies: The pacemaker current, i_f, plays an important role in regulating SA node pacemaker activity. **Cardiovascular Res.** 30, 307-308
43. -DiFrancesco,D. (1995) Cesium and the pacemaker current. **J. Cardiov. Electrophysiol.** 6,

1152-1153
44. -Zaza, A., Robinson, R.B. & DiFrancesco, D. (1996) Basal responses of the L-type Ca2+ and hyperpolarization-activated currents to autonomic agonists in the rabbit sino-atrial node. **J. Physiol**. 491, 347-355
45. -Mazzanti, M., Assandri, R., Ferroni, A. & DiFrancesco, D. (1996) Cytoskeletal control of rectification and expression of 4 substates in cardiac inward-rectifier K^+ channels. **FASEB J.** 10, 357-361
46. -Baruscotti, M., DiFrancesco, D. & Robinson, R.B. (1996) A TTX-sensitive inward sodium current contributes to spontaneous activity in newborn rabbit sino-atrial node cells. **J. Physiol.** 492, 21-30
47. -Accili,E. A. & DiFrancesco, D. (1996) Inhibition of the hyperpolarization-activated current (i_f) of rabbit SA node myocytes by niflumic acid. **Pflügers Arch.** 431, 757-762
48. -Accili,E. A., Redaelli, G. & DiFrancesco, D. (1996) Activation of the hyperpolarization-activated current (i_f) in sino-atrial node myocytes of the rabbit by vasoactive intestinal peptide. **Pflügers Arch.** 431, 803-805
49. -Zaza,A., Rocchetti,M. & DiFrancesco,D. (1996) Modulation of the hyperpolarization activated current (I_f) by adenosine in rabbit sinoatrial myocytes. **Circulation** 94, 734-741
50. -Accili,E. A., Robinson, R.B. & DiFrancesco, D. (1997) Properties and modulation of the i_f current in newborn versus adult cardiac SA node. **Am. J. Physiol.** 272, H1549-H1552
51. -Accili,E. A., Redaelli, G. & DiFrancesco, D. (1997) Differential control of the hyperpolarization-activated (i_f) current by cAMP gating and phosphatase inhibition in rabbit sino-atrial node myocytes. **J. Physiol.** 500.3, 643-651
52. -Baruscotti, M., Westenbroek, R., Catterall, W.A., DiFrancesco, D. & Robinson, R. (1997) The newborn rabbit sino-atrial node expresses a neuronal type I-like Na^+ channel. **J. Physiol.** 498.3, 641-648
53. -Janigro, D., Gasparini, S., D'Ambrosio, R. , McKhann II, G. & DiFrancesco, D. (1997). Reduction of K^+ uptake in glia prevents LTD maintenance and causes epileptiform activity. **J. Neurosci.** 17(8), 2813-2824
54. -Bois,P., Renaudon,B., Baruscotti,M., Lenfant,J. & DiFrancesco,D. (1997) Activation of f-channels by cAMP analogs in macro-patches from rabbit SA node myocytes. **J. Physiol.** 501.3, 565-571
55. -Gasparini, S. & DiFrancesco, D. (1997) Action of the hyperpolarization-activated (I_h) current blocker ZD 7288 in hippocampal CA1 neurons. **Pflügers Arch.** 435, 99-106
56. -Accili, E.A., Redaelli, G. & DiFrancesco, D. (1998) Two distinct pathways of muscarinic current responses in rabbit sino-atrial node myocytes **Pflügers Arch** 437-1, 164-167
57. -DiFrancesco,D. (1999) Dual allosteric modulation of pacemaker (f) channels by cAMP and voltage in rabbit SA node. **J. Physiol.** 515.2, 367-376
58. -Gasparini,S. & DiFrancesco,D. (1999) Action of serotonin on the hyperpolarization-activated cation current (I_h) in rat CA1 hippocampal neurons. **Eur. J. Neurosci.** 11, 3093-3100
59. -Vaccari,T., Moroni,A., Rocchi,M., Gorza,L., Bianchi,M.E., Beltrame,M. & DiFrancesco,D. (1999) The human gene coding for HCN2, the pacemaker channel of the heart. **Biochim. Biophys. Acta** 1446/3, 419-425
60. -Barbuti, A., Baruscotti, M., Altomare, C., Moroni, A. & DiFrancesco, D. (1999) Action of internal pronase on the f-channel kinetics in the rabbit SA node. **J. Physiol.** 520-3, 737-744
61. -Plugge,B., Gazzarrini,S. Nelson,M. Cerana,R, Van Etten, J.L., Derst,C., DiFrancesco,D., Moroni, A. & Thiel,G. (2000) A new potassium channel protein encoded by Chlorella virus PBCV-1. **Science** 287, 1641-1644
62. -Moroni, A., Barbuti, A., Altomare, C., Viscomi, C., Morgan, J., Baruscotti,M. & DiFrancesco,D. (2000) Kinetic and ionic properties of the human HCN2 pacemaker channel. **Pflügers Arch.** 439, 618-626

63. -Moroni, A., Gazzarrini, S., Cerana, R., Colombo, R., Sutter, J.-U., DiFrancesco, D., Gradmann, D. & Thiel, G. (2000) Mutation in pore domain uncovers cation- and voltage-sensitive recovery from inactivation in KAT1 channel. **Biophys. J**. 78, 1862-1871
64. -Altomare, C., Barbuti, A., Viscomi, C., Baruscotti,M. & DiFrancesco, D. (2000) Effects of dronedarone on Acetylcholine activated current in rabbit SAN cells. **Br. J. Pharmacol.** 130, 1315-1320
65. -Baruscotti,M., DiFrancesco,D. & Robinson,R.B. (2000) Na^+ current contribution to the diastolic depolarization in newborn rabbit SA node cells. **Am. J. Physiol.** 279, H2303-H2309
66. -Altomare, C., Bucchi, A., Camatini, E., Baruscotti, M., Viscomi, C., Moroni, A. & DiFrancesco, D. (2001) Integrated allosteric model of voltage gating of HCN channels. **J. Gen. Physiol.** 117, 519-532
67. -Baruscotti M, DiFrancesco D. & Robinson RB. (2001) Single-channel properties of the sinoatrial node Na^+ current in the newborn rabbit. **Pflügers Arch.**. 442, 192-196
68. Moroni, A., Gorza, L., Beltrame, M., Gravante, B., Vaccari, T., Bianchi, M.E., Altomare, C., Longhi, C., Heurteaux, C., Vitadello, M., Malgaroli, A. & DiFrancesco, D. (2001) Hyperpolarization-activated cyclic-nucleotide-gated channel 1 is a molecular determinant of the cardiac pacemaker current I_f. **J. Biol. Chem.** 276, 29233-29241
69. Protas,L., DiFrancesco,D. & Robinson, R.B. (2001) L-type but not T-type calcium current changes during postnatal development in rabbit sinoatrial node. **Am. J. Physiol.** 281, H1252-H1259
70. -Viscomi, C., Altomare, C., Bucchi, A., Camatini, E., Baruscotti, M., Moroni, A. & DiFrancesco, D. (2001) C-terminus-mediated control of voltage- and cAMP-gating of hyperpolarization-activated cyclic-nucleotide-gated channels. **J. Biol. Chem.** 276, 29930-29934
71. DiFrancesco, D. & Robinson, R,B. (2002) ß-modulation of heart rate: novel mechanism or novel mechanics of an old one? **Circ. Res.** 90, e69
72. Bucchi, A., Baruscotti, M. & DiFrancesco, D. (2002) Current-dependent block of rabbit sino-atrial node I_f channels by ivabradine. **J. Gen. Physiol.** 120, 1-13
73. Demontis, G.C, Moroni,A., Gravante,B., Altomare,C., Longoni, B., Cervetto, L. & DiFrancesco, D. (2002) Functional characterisation and subcellular localisation of HCN1 channels in rabbit retinal rod photoreceptors. **J. Physiol.** 542.1, 89-97
74. S. Gazzarrini, J.L. Van Etten, D. DiFrancesco, G Thiel and A. Moroni. (2002) Voltage-dependence of virus-encoded miniature K+ channel Kcv. **J. Memb. Biol.**, 187, 15-25
75. Qu, J., Altomare, C., Bucchi, A., DiFrancesco, D. & Robinson, R.B. (2002) Functional comparison of HCN isoforms expressed in ventricular and HEK 293 cells. **Pflügers Arch.** 444, 597-601
76. Moroni, A., Viscomi, C., Sangiorgio, V., Pagliuca, C., Meckel, T., Horwath, F., Gazzarrini, S., Valbuzzi, P., Van Etten, J.L., DiFrancesco, D. & Thiel, G. (2002) The short N-terminus is required for functional expression of the virus-encoded miniature K^+ channel Kcv. **FEBS Letters** 530, 65-69
77. Altomare, C., Terragni, B., Brioschi, C., Milanesi, R., Pagliuca, C., Viscomi, C. Moroni, A & DiFrancesco, D. (2003) Heteromeric HCN1-HCN4 channels: a comparison with native pacemaker channels from the rabbit sinoatrial node. **J. Physiol.** 549.2, 347-359
78. Bucchi, A., Baruscotti, M., Robinson, R.B. & DiFrancesco, D. (2003) I_f -dependent modulation of pacemaker rate mediated by cAMP in the presence of ryanodine in rabbit sinoatrial node cells. **J. Mol. Cell. Cardiol.** 35, 905-913
79. Gazzarrini S, Severino M, Lombardi M, Morandi M, DiFrancesco D, Van Etten JL, Thiel G, Moroni A. (2003) The viral potassium channel Kcv: structural and functional features. **FEBS Lett.** 552, 12-6
80. Robinson, R.B., Baruscotti, M. & DiFrancesco, D. (2003) Autonomic modulation of heart rate: pitfalls of nonselective channel blockade. **Am. J. Physiol.** 285, H2865-H2866
81. Kang, M., Moroni, A:, Gazzarrini, S., DiFrancesco, D., Thiel, G. Severino, M. & Van Etten,

J.L. (2004) Small potassium channel proteins encoded by Chlorella viruses. **Proc. Natl. Acad. Sci. USA** 101 (15), 5318-5324

82. Gazzarrini, S., Kang, M., Van Etten, J.L., DiFrancesco, D., Tayefeh, S., Kast, S.M., Thiel, G., and Moroni, A. (2004) Long-distance interactions within the potassium channel pore are revealed by molecular diversity of viral proteins. **J. Biol. Chem.**, 279 (27), 28443-28449
83. Gravante, B., Barbuti, A., Milanesi, R., Zappi, I., Viscomi, C. and DiFrancesco, D. (2004) Interaction of the pacemaker channel HCN1 with filamin A. **J. Biol. Chem.** 279(42), 43847-43853
84. Barbuti A., Gravante B., Riolfo M., Milanesi R., Terragni B. & DiFrancesco, D. (2004) Localization of pacemaker channels in lipid rafts regulates channel kinetics. **Circ. Res.** 94(10), 1325-1331
85. DiFrancesco, D. (2005) Letter Regarding Article by Michels et al, "Single-Channel Properties Support a Potential Contribution of Hyperpolarization-Activated Cyclic Nucleotide-Gated Channels and I_f to Cardiac Arrhythmias" **Circulation** 112, 72-73
86. Milanesi R., Baruscotti M., Gnecchi-Ruscone T. & DiFrancesco D. (2006) Familial sinus bradycardia associated with a mutated cardiac pacemaker channel. **New Engl. J. Med.** 354(2),151-157
87. Bucchi, A., Tognati, A, Milanesi, R., Baruscotti, M. and DiFrancesco, D. (2006) Properties of ivabradine-induced block of HCN1 and HCN4 pacemaker channels. **J. Physiol.** 572.2 335–346
88. Barbuti A., Terragni B., Brioschi, C. & DiFrancesco, D. (2007) Localization of f-channels to caveolae mediates specific β2-adrenergic receptor modulation of rate in sinoatrial myocytes. **J. Mol. Cell. Cardiol.** 42, 71-78
89. Bucchi, A., Baruscotti, M., Robinson, R.B. and DiFrancesco, D. (2007) Modulation of rate by autonomic agonists in SAN cells involves changes in diastolic depolarization and the pacemaker current. **J. Mol. Cell. Cardiol.** 43, 39-48
90. Galvez, B. G., Sampaolesi, M., Barbuti, A., Crespi, A., Covarello, D., Brunelli, S., Dellavalle, A., Crippa, S., Balconi, G., Cuccovillo, I., Molla, F., Staszewsky, L., Latini, R., DiFrancesco, D. & Cossu, G. (2008). Cardiac mesoangioblasts are committed, self-renewable progenitors, associated with small vessels of juvenile mouse ventricle. **Cell Death Differ.** 15, 1417-1428
91. Barbuti, A, Crespi, A., Capilupo, D., Mazzocchi, N., Baruscotti, M. & DiFrancesco, D. (2008) Molecular composition and functional properties of f-channels in murine embryonic stem cell-derived pacemaker cells. **J. Mol. Cell. Cardiol.** 46(3), 343-351
92. Brioschi, C., Micheloni, S., Tellez, J.O., Pisoni, G., Longhi, R., Moroni, P., Billeter, R., Barbuti, A., Dobrzynski, H., Boyett, M.R., DiFrancesco, D. & Baruscotti, M. (2009) Distribution of the pacemaker HCN4 channel mRNA and protein in the rabbit sinoatrial node. **J. Mol. Cell. Cardiol.** 47(2), 221-227
93. -Lakatta, E.G. & DiFrancesco, D. (2009) Point-Counterpoint. What keeps us ticking, a funny current, a Calcium clock, or both? **J. Mol. Cell. Cardiol.** 47(2), 157-170
94. Chandler, N.J., Greener, I.D., Tellez, J.O., Inada, S., Musa, H., Molenaar, P., DiFrancesco, D., Baruscotti, M., Longhi, R., Anderson, R.H., Billeter, R., Sharma, V., Sigg, D.C., Boyett, M.R., Dobrzynski, H. (2009). Molecular architecture of the human sinus node – insights into functioning of the pacemaker. **Circulation** 119, 1562-1575
95. -DiFrancesco, D. (2009) Editorial: More seafood to control heart rate? **Heart Rhythm** 6(10), 1493-1494)
96. -DiFrancesco, D. (2010) Considerations on the size of currents required for pacemaking. **J. Mol. Cell. Cardiol.** 48, 802–803
97. -Barbuti A, Galvez BG, Crespi A, Scavone A, Baruscotti M, Brioschi C, Cossu G, DiFrancesco D.(2010) Mesoangioblasts from ventricular vessels can differentiate in vitro into cardiac myocytes with sinoatrial-like properties. **J. Mol. Cell. Cardiol.** 48(2), 415-23
98. -Pisoni G, D'Amelio P, Sassi F, Manarolla G, Scaccabarozzi L, Locatelli C, Mazzocchi N, Baruscotti M, DiFrancesco D, Moroni P. (2010) Multinucleated giant cells with an osteoclast

phenotype derived from caprine peripheral blood mononuclear cells. **Vet J.** [Epub ahead of print] PubMed PMID: 20822938

99. -Baruscotti M, Bucchi A, Viscomi C, Mandelli G, Consalez G, Gnecchi-Rusconi T, Montano N, Casali KR, Micheloni S, Barbuti A, DiFrancesco D. (2011) Deep bradycardia and heart block caused by inducible cardiac-specific knockout of the pacemaker channel gene Hcn4. **Proc Natl Acad Sci USA**108(4):1705-1710
100. -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. (2011) Human cardiac and bone marrow stromal cells exhibit distinctive properties related to their origin. **Cardiovasc Res.** 89(3), 650-660
101. -Avitabile D, Crespi A, Brioschi C, Parente V, Toietta G, Devanna P, Baruscotti M, Truffa S, Scavone A, Rusconi F, Biondi A, D'Alessandra Y, Vigna E, DiFrancesco D, Pesce M, Capogrossi MC, Barbuti A. (2011) Human cord blood CD34+ progenitor cells acquire functional cardiac properties through a cell fusion process. **Am J Physiol Heart Circ Physiol.** 300, H1875-H1884
102. -DiFrancesco JC, Barbuti A, Milanesi R, Coco S, Bucchi A, Bottelli G, Ferrarese C, Franceschetti S, Terragni B, Baruscotti M, DiFrancesco D. (2011) Recessive loss-of-function mutation in the pacemaker HCN2 channel causing increased neuronal excitability in a patient with idiopathic generalized epilepsy. **J Neurosci.** 31(48):17327-37
103. Quinn TA, Granite S, Allessie MA, Antzelevitch C, Bollensdorff C, Bub G, Burton RA, Cerbai E, Chen PS, Delmar M, Difrancesco D, Earm YE, Efimov IR, Egger M, Entcheva E, Fink M, Fischmeister R, Franz MR, Garny A, Giles WR, Hannes T, Harding SE, Hunter PJ, Iribe G, Jalife J, Johnson CR, Kass RS, Kodama I, Koren G, Lord P, Markhasin VS, Matsuoka S, McCulloch AD, Mirams GR, Morley GE, Nattel S, Noble D, Olesen SP, Panfilov AV, Trayanova NA, Ravens U, Richard S, Rosenbaum DS, Rudy Y, Sachs F, Sachse FB, Saint DA, Schotten U, Solovyova O, Taggart P, Tung L, Varró A, Volders PG, Wang K, Weiss JN, Wettwer E, White E, Wilders R, Winslow RL, Kohl P. Minimum Information about a Cardiac Electrophysiology Experiment (MICEE): standardised reporting for model reproducibility, interoperability, and data sharing. **Prog Biophys Mol Biol.** 2011 Oct;107(1):4-10. doi: 10.1016/j.pbiomolbio.2011.07.001. Epub 2011 Jul 6. PMID: 21745496; PMCID: PMC3190048.
104. -Barbuti A, Scavone A, Mazzocchi N, Terragni B, Baruscotti M, DiFrancesco D. (2012) A Caveolin-Binding Domain in the HCN4 Channels Mediates Functional Interaction with Caveolin Proteins. **J. Molec. Cell. Cardiol.** 53(2):187-195
105. -Cappato R., Castelvecchio S., Bianco E., Vitali-Serdoz L., Gnecchi T., Pittalis M., De Ambroggi L., Baruscotti, M., Gaeta M., Ricci C., Furlanello F., DiFrancesco D., Lupo PP (2012) Clinical Efficacy of Ivabradine in Patients With Inappropriate Sinus Tachycardia: A Prospective Randomized Placebo-controlled Double-blind Crossover Evaluation. **J. Amer. Coll. Cardiol.** 60(15):1323-1329
106. -Severi S., Fantini M., Charawi, L.A., DiFrancesco. D. (2012) An updated computational model of rabbit sinoatrial action potential to investigate the mechanisms of heart rate modulation. **J. Physiol.** 590.18:4483-4499
107. -Vecellio M., Meraviglia V., Nanni S., Barbuti A., Scavone A., DiFrancesco D., Farsetti A., Pompilio G., Colombo G.I., Capogrossi M.C., Gaetano C., Rossini A. (2012) In Vitro Epigenetic Reprogramming of Human Cardiac Mesenchymal Stromal Cells into Functionally Competent Cardiovascular Precursors. **PLoS ONE** 7(12) e51694
108. -Bucchi A., Baruscotti M., Nardini M., Barbuti A., Micheloni S., Bolognesi M, DiFrancesco D. (2013) Identification of the molecular site of ivabradine binding to HCN4 channels. **PLoS ONE** 8(1):e53132
109. -Nawathe PA, Kryukova Y, Oren RV, Milanesi R, Clancy CE, Lu JT, Moss AJ, DiFrancesco D, Robinson RB. (2013) An LQTS6 MiRP1 Mutation Suppresses Pacemaker Current and is Associated with Sinus Bradycardia. **J Cardiovasc Electrophysiol.** 24:1021.1027

110. – DiFrancesco,D., Nawathe,P.A., Robinson, R.B. (2013) Multifactorial impact of channel beta-subunit gene mutation on automaticity. **J Cardiovasc Electrophysiol.** 24:E26-E27
111. -Scavone A, Capilupo D., Mazzocchi N, Crespi A., Zoia S., Bucchi A., Milanesi R., Baruscotti M:, Benedetti S., Messina G:, DiFrancesco D., Barbuti, A. (2013) Embryonic stem cell-derived CD166+ precursors develop into a fully functional sinoatrial-like tissue **Circulation Research** 113:389-398
112. - D'Souza A, Bucchi A, Johnsen AB, Logantha SJ, Monfredi O, Yanni J, Prehar S, Hart G, Cartwright E, Wisloff U, Dobryznski H, DiFrancesco D, Morris GM, Boyett MR. (2014) Exercise training reduces resting heart rate via downregulation of the funny channel HCN4. **Nat Commun.** 5:3775. doi: 10.1038/ncomms4775.
113. -Lolicato M, Bucchi A, Arrigoni C, Zucca S, Nardini M, Schroeder I, Simmons K, Aquila M, DiFrancesco D, Bolognesi M, Schwede F, Kashin D, Fishwick CW, Johnson AP, Thiel G, Moroni A. (2014) Cyclic dinucleotides bind the C-linker of HCN4 to control channel cAMP responsiveness. **Nat Chem Biol**.10(6):457-62
114. - Barbuti A, DiFrancesco D. (2014) The 'funny' side of sepsis. **J Physiol.** 592(Pt 6):1171
115. -Meraviglia V., Wen J., Piacentini L, Campostrini G, Wang C, Florio M C, Azzimato V, Fassina L, Langes M, Wong J, Miragoli M, Gaetano C, Pompilio G, Barbuti A, DiFrancesco D, Mascalzoni D, Pramstaller P P, Colombo G I, Chen H-S V, Rossini A. (2016) Higher cardiogenic potential of iPSCs derived from cardiac versus skin stromal cells. **Frontiers in Bioscience** (Landmark Ed) 21:719-43
116. – Ravagli E, Bucchi A, Bartolucci C, Paina M, Baruscotti M, DiFrancesco D, Severi S. (2016) Cell-specific Dynamic Clamp analysis of the role of funny I_f current in cardiac pacemaking. **Progress in Biophysics & Molecular Biology** 120: 50-66
117. Re A, Nanni S, Aiello A, Granata S, Colussi C, Campostrini G, Spallotta F, Mattiussi S, Pantisano V, D'Angelo C, Biroccio A, Rossini A, Barbuti A, DiFrancesco D, Trimarchi F, Pontecorvi A, Gaetano C, Farsetti A. (2016) Anacardic acid and thyroid hormone enhance cardiomyocytes production from undifferentiated mouse ES cells along functionally distinct pathways. **Endocrine** 2015 Nov 7. [Epub ahead of print] PubMed PMID: 26547215.
118. - Biel S, Aquila M, Hertel B, Berthold A, Neumann T, DiFrancesco D, Moroni A, Thiel G, Kauferstein S (2016) Mutation in S6 domain of HCN4 channel in patient with suspected Brugada syndrome modifies channel function. **Pflügers Archiv** 468(10):1663-71.
119. -Baruscotti M, Bucchi A, Milanesi R, Paina M, Barbuti A, Gnecchi-Ruscone T, Bianco E, Vitali.Serdoz L, Cappato R, DiFrancesco D. (2017) A gain-of-function mutation in the cardiac pacemaker HCN4 channel increasing cAMP sensitivity is associated with familial Inappropriate Sinus Tachycardia. **European Heart Journal** 38(4):280-288. doi: 10.1093/eurheartj/ehv582
120. – Campostrini Giulia, Bonzanni Mattia, Lissoni Alessio, Bazzini Claudia, Milanesi Raffaella, Vezzoli Elena, Francolini Maura, Baruscotti Mirko, Bucchi Annalisa, Rivolta Ilaria, Fantini Matteo, Severi Stefano, Cappato Riccardo, Crotti Lia, Schwartz Peter, DiFrancesco Dario, and Barbuti Andrea (2017) The expression of the rare caveolin-3 variant T78M alters cardiac ion channels function and membrane excitability. **Cardiovascular Research** 113(10):1256-1265
121. –Yavari A, Bellahcene M, Bucchi A, Sirenko S, Pinter K, Herring N, Jung JJ, Tarasov KV, Sharpe EJ, Wolfien M, Czibik G, Steeples V, Ghaffari S, Nguyen C, Stockenhuber A, Clair JRS, Rimmbach C, Okamoto Y, Yang D, Wang M, Ziman BD, Moen JM, Riordon DR, Ramirez C, Paina M, Lee J, Zhang J, Ahmet I, Matt MG, Tarasova YS, Baban D, Sahgal N, Lockstone H, Puliyadi R, de Bono J, Siggs OM, Gomes J, Muskett H, Maguire ML, Beglov Y, Kelly M, Dos Santos PPN, Bright NJ, Woods A, Gehmlich K, Isackson H, Douglas G, Ferguson DJP, Schneider JE, Tinker A, Wolkenhauer O, Channon KM, Cornall RJ, Sternick EB, Paterson DJ, Redwood CS, Carling D, Proenza C, David R, Baruscotti M, DiFrancesco D, Lakatta EG, Watkins H, Ashrafian H. (2017) Mammalian γ2 AMPK regulates intrinsic heart rate. **Nature Communications** 8(1):1258.
122. -Gambini E, Perrucci GL, Bassetti B, Spaltro G, Campostrini G, Lionetti MC, Pilozzi A, Martinelli F, Faruggia A, DiFrancesco D, Barbuti A, Pompilio G. (2018) Preferential

myofibroblast differentiation of cardiac mesenchymal progenitor cells in the presence of atrial fibrillation. **Translational Research** 192:54-67

123. -Meraviglia V, Benzoni P, Landi S, Murano C, Langione M, Motta BM, Baratto S, Silipigni R, Di Segni M, Pramstaller PP, DiFrancesco D, Gazzerro E, Barbuti A, Rossini A. (2018) Generation of human induced pluripotent stem cells (EURACi001-A, EURACi002-A, EURACi003-A) from peripheral blood mononuclear cells of three patients carrying mutations in the CAV3 gene. **Stem Cell Research** 27:25-29
124. - Saponaro A, Cantini F, Porro A, Bucchi A, DiFrancesco D, Maione V, Donadoni C, Introini B, Mesirca P, Mangoni ME, Thiel G, Banci L, Santoro B, Moroni A. (2018) A synthetic peptide that prevents cAMP regulation in mammalian hyperpolarization-activated cyclic nucleotide-gated (HCN) channels. **Elife** 7. pii: e35753. doi: 10.7554/eLife.35753.
125. - Campostrini G, DiFrancesco JC, Castellotti B, Milanesi R, Gnecchi-Ruscone T, Bonzanni M, Bucchi A, Baruscotti M, Ferrarese C, Franceschetti S, Canafoglia L, Ragona F, Freri E, Labate A, Gambardella A, Costa C, Gellera C, Granata T, Barbuti A, DiFrancesco D. (2018) A Loss-of-Function HCN4 Mutation Associated With Familial Benign Myoclonic Epilepsy in Infancy Causes Increased Neuronal Excitability. **Frontiers in Molecular Neuroscience** 11:269. doi: 10.3389/fnmol.2018.00269.
126. -Bonzanni M, DiFrancesco JC, Milanesi R, Campostrini G, Castellotti B, Bucchi A, Baruscotti M, Ferrarese C, Franceschetti S, Canafoglia L, Ragona F, Freri E, Labate A, Gambardella A, Costa C, Rivolta I, Gellera C, Granata T, Barbuti A, DiFrancesco D. (2018) A novel de novo HCN1 loss-of-function mutation in genetic generalized epilepsy causing increased neuronal excitability. **Neurobiology of Disease** 118:55-63.
127. -Marini C, Porro A, Rastetter A, Dalle C, Rivolta I, Bauer D, Oegema R, Nava C, Parrini E, Mei D, Mercer C, Dhamija R, Chambers C, Coubes C, Thévenon J, Kuentz P, Julia S, Pasquier L, Dubourg C, Carré W, Rosati A, Melani F, Pisano T, Giardino M, Innes AM, Alembik Y, Scheidecker S, Santos M, Figueiroa S, Garrido C, Fusco C, Frattini D, Spagnoli C, Binda A, Granata T, Ragona F, Freri E, Franceschetti S, Canafoglia L, Castellotti B, Gellera C, Milanesi R, Mancardi MM, Clark DR, Kok F, Helbig KL, Ichikawa S, Sadler L, Neupauerová J, Laššuthova P, Šterbová K, Laridon A, Brilstra E, Koeleman B, Lemke JR, Zara F, Striano P, Soblet J, Smits G, Deconinck N, Barbuti A, DiFrancesco D, LeGuern E, Guerrini R, Santoro B, Hamacher K, Thiel G, Moroni A, DiFrancesco JC, Depienne C. (2018) HCN1 mutation spectrum: from neonatal epileptic encephalopathy to benign generalized epilepsy and beyond. **Brain** 141(11):3160-3178
128. -DiFrancesco JC, Castellotti B, Milanesi R, Ragona F, Freri E, Canafoglia L, Franceschetti S, Ferrarese C, Magri S, Taroni F, Costa C, Labate A, Gambardella A, Solazzi R, Binda A, Rivolta I, Di Gennaro G, Casciato S, D'Incerti L, Barbuti A, DiFrancesco D, Granata T, Gellera C. (2019) HCN ion channels and accessory proteins in epilepsy: genetic analysis of a large cohort of patients and review of the literature. **Epilepsy Research** 153:49-58
129. -DiFrancesco D. (2019) Comparing pathways for long-term heart rate modulation by the funny current. **Journal of General Physiology** 151(9):1066-1069
130. -Benzoni P, Campostrini G, Landi S, Bertini V, Marchina E, Iascone M, Ahlberg G, Olesen MS, Crescini E, Mora C, Bisleri G, Muneretto C, Ronca R, Presta M, Poliani PL, Piovani G, Verardi R, Pasquale ED, Consiglio A, Raya A, Torre E, Lodrini AM, Milanesi R, Rocchetti M, Baruscotti M, DiFrancesco D, Memo M, Barbuti A, Dell'Era P. (2019) Human iPSC modeling of a familial form of atrial fibrillation reveals a gain of function of I_f and I_{CaL} in patient-derived cardiomyocytes. **Cardiovascular Research** 116(6):1147-1160. doi: 10.1093/cvr/cvz217
131. -D'Souza A, Wang Y, Anderson C, Bucchi A, Baruscotti M, Olieslagers S, Mesirca P, Johnsen AB, Mastitskaya S, Ni H, Zhang Y, Black N, Cox C, Wegner S, Bano-Otalora B, Petit C, Gill E, Logantha SJRJ, Dobrzynski H, Ashton N, Hart G, Zhang R, Zhang H, Cartwright EJ, Wisloff U, Mangoni ME, da Costa Martins PA, Piggins HD, DiFrancesco D, Boyett MR. (2021) A circadian clock in the sinus node mediates day-night rhythms in Hcn4 and heart rate. **Heart Rhythm** 2021 May;18(5):801-810. doi:10.1016/j.hrthm.2020.11.026. Epub 2020 Dec 3. PMID:

33278629; PMCID: PMC8073545
132. -Piantoni C, Carnevali L, Molla D, Barbuti A, DiFrancesco D, Bucchi A, Baruscotti M (2021) Age-related changes in cardiac autonomic modulation and heart rate variability in mice. **Frontiers in Neuroscience** 15:617698. doi: 10.3389/fnins.2021.617698
133. Saponaro A, Bauer D, Giese MH, Swuec P, Porro A, Gasparri F, Sharifzadeh AS, Chaves-Sanjuan A, Alberio L, Parisi G, Cerutti G, Clarke OB, Hamacher K, Colecraft HM, Mancia F, Hendrickson WA, Siegelbaum SA, DiFrancesco D, Bolognesi M, Thiel G, Santoro B, Moroni A. (2021) Gating movements and ion permeation in HCN4 pacemaker channels. **Mol Cell.** 81(14):2929-2943
134. -Piantoni C, Paina M, Molla D, Liu S, Bertoli G, Jiang H, Wang Y, Wang Y, Wang Y, DiFrancesco D, Barbuti A, Bucchi A, Baruscotti M. (2022) Chinese natural compound decreases pacemaking of rabbit cardiac sinoatrial cells by targeting second messenger regulation of f-channels. **Elife** 11: e75119.
135. -Zhang S, Wang Y, Yu M, Shang Y, Chang Y, Zhao H, Kang Y, Zhao L, Xu L, Zhao X, DiFrancesco D, Baruscotti M, Wang Y. (2022) Discovery of Herbacetin as a Novel SGK1 Inhibitor to Alleviate Myocardial Hypertrophy. **Adv Sci** (Weinh) 9: e2101485.

Reviews

136. -DiFrancesco,D. (1985) The cardiac hyperpolarizing-activated current, i_f. Origins and developments. **Prog. Biophys. molec. Biol.** 46, 163-183
137. -DiFrancesco,D. (1987) The pacemaker current in the sinus node. **Europ. Heart J.** 8, suppl, 19-23
138. -DiFrancesco,D. (1991) Generation and control of cardiac pacing: the pacemaker current. **Trends Cardiovasc. Med.** 1, 250-255
139. -DiFrancesco,D. (1991c) Role of if current in pacemaker cells. Prog. Pharmacol. Res. 1, 39
140. -DiFrancesco,D. & Zaza, A. (1992) The cardiac pacemaker current, i_f. **J. Cardiovasc. Electrophysiol.** 3, 334-344
141. -DiFrancesco,D. (1993) Pacemaker mechanisms in cardiac tissue. **Ann. Rev. Physiol.** 55, 455-472
142. -Zaza,A. & DiFrancesco,D. (1993) Ionic mechanisms in the autonomic modulation of sinoatrial pacemaking. In "Basic problems of cardiac automaticity" Prog. Pharmacol. Res. vol. 2. Ed. B. Guth, ULM, Biberach, pp. 45-56
143. -DiFrancesco,D. (1995a) The onset and autonomic regulation of cardiac pacemaker activity: relevance of the f-current. **Cardiovascular Res.** 29, 449-456
144. -DiFrancesco,D. (1995b) Cardiac pacemaker: 15 years of "new" interpretation. **Acta Cardiologica** Vol. L, 6, 413-427
145. -DiFrancesco,D. (1999) The funny current. **The Physiological Society Magazine** 37, 4-5
146. -Accili,E.A., Proenza,C., Baruscotti,M. & DiFrancesco, D. (2002) From funny current to HCN channels: 20 years of excitation. **News Physiol. Sci.** 17, 32-37
147. -DiFrancesco, D. (2002) Sino-atrial I_f current: a target for specific heart rate reduction. **Medicographia** 24-3, 218-224
148. -DiFrancesco, D. (2003) I_f inhibition: a novel mechanism of action **Eur. Heart J. Supplements** 5, Issue suppl. G, 1 Sept 2003, G19-G25 https://doi.org/10.1016/S1520-765X(03)90004-6
149. -DiFrancesco, D. & Camm, J.A. (2004) Heart Rate Lowering by Specific and Selective I_f Inhibition with Ivabradine: A New Therapeutic Perspective in Cardiovascular Disease. **Drugs** 64 (16), 1-10
150. -Baruscotti,M. & DiFrancesco,D. (2004) Pacemaker channels. **Ann. N.Y. Acad. Sci.** 1015:111-21

151. -Baruscotti,M., Bucchi, A. & DiFrancesco,D. (2005) Physiology and pharmacology of the cardiac pacemaker ("funny") current. **Pharmacology & Therapeutics** 57(1), 59-79
152. -DiFrancesco, D. (2005) Cardiac pacemaker I_f current and its inhibition by heart rate–reducing agents **Curr Med Res Opin** 21(7): 1115-22
153. -DiFrancesco, D. (2005) I_f current in cardiology. **Advances in Heart Rate Reduction** N. 4, 4-7
154. -DiFrancesco, D. (2006) Serious workings of the funny current. **Prog. Biophys. Mol. Biol.** 90, 13–25
155. -DiFrancesco, D. (2006) Cardiac pacemaker (I_f) current: physiological and pharmacological properties. **Hospital Chronicles (Nosokomeiaka Chronika)** 1(1), 151-155
156. -DiFrancesco, D. (2006) Funny channels in the control of cardiac rhythm and mode of action of selective blockers. **Pharmacological Research** 53, 399-406
157. -Bucchi, A., Barbuti, A., Baruscotti, M & DiFrancesco, D. (2007) Heart rate reduction via selective 'funny' channel blockers. **Curr. Opin. Pharmacol.** 7, 208-213
158. -Barbuti, A., Baruscotti, M & DiFrancesco, D. (2007) The Pacemaker Current: From Basics to the Clinics. **J. Cardiovasc. Electrophysiol.** 18, 1-6
159. -DiFrancesco, D. & Borer, J.S. (2007) The Funny current: cellular basis for control of heart rate. **Drugs** 67 Supp. 2, 1-11
160. -DiFrancesco, D. (2007) The pacemaker funny channel: a tool to control heart rate **Medicographia** 29(4) 319-325
161. -Barbuti, A. & DiFrancesco, D. (2008) Control Of Cardiac Rate by "Funny" Channels In Health And Disease. **Ann. N.Y. Acad. Sci.** 1123, 213-223
162. -DiFrancesco,D. (2010) Viewpoint: Funny channel-based pacemaking. **Heart Rhythm** 7(2):276-279
163. -DiFrancesco, D. (2010) The role of the funny current in pacemaker activity. **Circulation Research** 210: 434-446
164. -Baruscotti M, Bottelli G, Milanesi R, DiFrancesco JC, DiFrancesco D. (2010) HCN-related channelopathies. **Pflügers Arch.** 460(2):405-15.
165. Quinn TA, Bollensdorff C, Bub G, Burton RAB, DiFrancesco,D, Earm YE, Fink M, Hunter PJ, Garny A, Granite S, Hannes T, Lord P, McCulloch AD, Mirams GR, Noble D, Rosenbaum DS, Trayanova NA, Ravens U, Wang K, Winslow RL, Kohl P (2011) Minimum Information about a Cardiac Electrophysiology Experiment (MICEE): Standardised Reporting for Model Reproducibility, Interoperability, and Data Sharing. **Progress in Biophysics and Molecular Biology** 107: 4-10
166. –DiFrancesco, D., Noble, D. (2012) The funny current has a major pacemaking role in the sinus node. **Heart Rhythm** 9(2):299-301
167. -DiFrancesco, D., Noble, D. (2012) Rebuttal to "The funny current in the context of the coupled clock pacemaker cell system" by Victor A. Maltsev and Edward G. Lakatta **Heart Rhythm** 9(3):457:458
168. –Bucchi A., Barbuti A., DiFrancesco D. & Baruscotti M. (2012) Funny current and cardiac rhythm: insights from HCN knockout mouse models. **Frontiers in Physiology** 3(240):1-10
169. -DiFrancesco, D. (2013) Funny channel gene mutations associated with arrhythmias. **J. Physiol.** 591.17: 4117–4124
170. -DiFrancesco D. (2013) The "funny" current of cardiac pacemaker. **pH** 2:30-41
171. –DiFrancesco D. (2015) HCN4, Sinus Bradycardia and Atrial Fibrillation. **Arrhythmia & Electrophysiology Review** 4(1):9-13
172. DiFrancesco J.C., DiFrancesco D. (2015) Dysfunctional HCN ion channels in neurological diseases. **Frontiers in Cellular Neuroscience 9:71.** doi: 10.3389/fncel.2015.00071
173. –Baruscotti M., Bianco E., Bucchi, A., DiFrancesco, D. (2016) Current understanding of the pathophysiological mechanisms responsible for inappropriate sinus tachycardia: role of the I_f "funny" current. **Journal of Interventional Cardiac Electrophysiology** 46(1):19-28
174. –DiFrancesco D. (2020) A brief history of pacemaking. Minireview **Frontiers in Physiology** 2020 Jan 22;10:1599. doi: 10.3389/fphys.2019.01599. PMID: 32038284; PMCID:

PMC6987461.doi: 10.3389/fphys.2019.01599

175. -DiFrancesco,D, Noble, D. (2023) Silvio Weidmann: laying the foundations for unravelling the mechanism of heart rhythm. **Phil. Trans. Roy. Soc. B** (in press)

Other articles

-Denis Noble, Dario DiFrancesco and Diego Zancani (2014) Leonardo da Vinci and the origin of semen. **Notes & Records: the Royal Society journal of the history of science**. 2014 68 391-402; DOI: 10.1098/rsnr.2014.0021
-Bucchi A., Barbuti A., DiFrancesco D. (2014) Il cuore lento dell'atleta. **Sport e medicina** 4 Luglio-Agosto 2014 pp. 41-44
-DiFrancesco D., Brown, H.F. (2015) Obituary of Susan Noble. **Physiology News** 101
-DiFrancesco D. (2016) Come batte il cuore: canali "funny" e controllo del ritmo cardiaco. **Istituto Lombardo Accademia di Scienze e Lettere** -Ciclo di lezioni "Questioni di cuore, dalle prime ricerche alle nuove frontiere".

Chapters in books

176. -DiFrancesco,D. & Ojeda,C. (1980) Properties of the current i_f which underlies adrenaline action in the SA node. Comparison with i_{K2} in the Purkinje fibre. In "Developments of Biophysical research" Eds A. Borsellino et al., Plenum Press, N.Y., pp. 67-81
177. -DiFrancesco,D. (1982) The current i_{K2} in Purkinje fibres re- interpreted and identified with the current i_f in the SA node. In "Cardiac rate and rhythm: physiological, morphological and developmental aspects". Eds. L.N. Boumann and H.J. Jongsma, M.Nijhoff, TheHague, pp. 69-91
178. -DiFrancesco,D. & Noble,D. (1982) Implications of the reinterpretation of i_{K2} for the modelling of the electrical activity of the pacemaker tissues in the heart. In "Cardiac rate and rhythm: physiological, morphological and developmental aspects". Eds. L.N. Boumann and H.J. Jongsma, M.Nijhoff, TheHague, 93-128
179. -DiFrancesco,D. (1985) The ionic currents underlying pacemaker activity. In "Pathobiology of cardiovascular injury". Eds. H.L. Stone and W.B. Weglicki, Nijhoff, Boston, pp. 63-83
180. -Noble,D., Noble,S.J., DiFrancesco,D. & Hilgemann,D. (1988) Models of excitation in Purkyne fibres and other tissues in the heart. In "Jan Evangelista Purkyne in Science and Culture", Vol. 2. Ed J. Purs, Czechoslovak Academy of Science, pp. 801-825
181. -DiFrancesco,D. & Noble, D. (1989) Current i_f and its contribution to cardiac pacemaking. In "Neuronal and cellular oscillators" Ed. J.W. Jacklet, Dekker, New York, pp. 31-57
182. -Noble,D., DiFrancesco,D. & Denyer,J. (1989) Ionic mechanisms in normal and abnormal cardiac pacemaker activity. In "Neuronal and cellular oscillators" Ed. J.W. Jacklet, M. Dekker, New York, pp. 59-85
183. -DiFrancesco,D. & Tromba,C. (1989) Channel activity related to pacemaking. In "Isolated adult cardiomyocytes" Vol. II, Ed. G. Isenberg and H.M. Piper, CRC, Boca Raton, pp. 97-115
184. -DiFrancesco,D. (1990a) Current i_f and the modulation of heart rate. In "Cardiac Electrophysiology: from cell to bedside" Ed. D.P. Zipes & J. Jalife, W.B. Saunders, Philadelphia, pp. 28-35
185. -DiFrancesco,D. (1990b) The hyperpolarization-activated current, i_f, and cardiac pacemaking. In "Cardiac Electrophysiology: a textbook" Ed. M.R. Rosen, M.J. Janse and A.L. Wit, Futura, New York, pp. 117-132
186. -DiFrancesco,D. (1992) Cyclic AMP regulation of the pacemaker (i_f) current in heart. In

"Intracellular regulation of ion channels", Eds M. Morad & Z. Agus, NATO ASI Series, Vol. H60, pp. 241-246, Springer-Verlag, Berlin.

187. -DiFrancesco,D. (1992) Modulazione da parte del cAMP del canale attivato da iperpolarizzazioni (i_f). In "Approcci molecolari allo studio di canali ionici" Eds A. Volterra e G. Racagni, Pythagora Press, Milano, pp. 189-197
188. -DiFrancesco,D. (1994a) Regulation of the pacemaker current by acetylcholine. In "Vagal control of the heart: experimental basis and clinical implications". Eds. M.N. Levy and P.J. Schwartz, Futura, Armonk, pp. 207-220
189. -DiFrancesco,D. (1994b) Hyperpolarization-activated (i_f) current in heart. In "Handbook of membrane channels: molecular and cellular physiology" Ed. C. Peracchia, Academic Press, New York, pp. 335-343
190. -DiFrancesco,D. (1994c) Nervous control of cardiac function: modulation of pacemaker activity. In "Bioelectrochemistry IV: nerve-muscle function- Bioelectrochemistry, mechanisms, bioenergetics and control", Ed. B.A. Melandri, G. Milazzo & M. Blank, NATO ASI Series A, Vol. 267, pp. 219-223, Plenum, New York
191. -DiFrancesco,D., Mangoni,M. & Maccaferri,G. (1994) The pacemaker current in cardiac cells. In "Cardiac Electrophysiology: from cell to bedside" Vol. 2. Ed. D.P. Zipes & J. Jalife, W.B. Saunders, Philadelphia, pp. 96-103
192. -Zaza, A., Mangoni, M. & DiFrancesco,D. (1995) Pacemaker currents and their neural modulation. In "Pacemaker activity and intracellular communication" Ed. J.D. Huizinga, CRC, Boca Raton, pp. 117-131
193. Accili, E.A. & DiFrancesco, D. (1995) The "funny" current and some of its properties. In "Potassium channels in normal and pathological conditions". Eds. J. Vereecke, PP van Bogaert & F Verdonck, Leuven University Press pp 416-419
194. -DiFrancesco, D. (1996) The hyperpolarization-activated (I_f) current: autonomic regulation and the control of pacing. In "Molecular physiology and pharmacology of cardiac ion channels and transporters". Eds. M. Morad, S. Ebashi, W. Trautwein and Y. Kurachi, Kluwer Academic Publishers, Dordrecht, pp. 31- 37
195. -Gasparini,S., Maccaferri,G., D' Ambrosio,R. & DiFrancesco, D. (1996) The hyperpolarization-activated current (I_q/I_h) in rat hippocampal neurons. In: Neurobiology: ionic channels, neurons, and the brain. Ed. V. Torre & F. Conti, NATO ASI Series A Vol. 289, pp. 63-74, Plenum, New York
196. -DiFrancesco, D. (1998) Come le cellule rispondono ai mediatori chimici: II. I segnali elettrici. In "Frontiere della Biologia", Enciclopedia Treccani
197. -DiFrancesco,D, Moroni,A., Baruscotti,M. & .Accili,E.A. (2000) Cardiac pacemaker currents. In "Heart Physiology and Pathophysiology" IV Edition, Ed. N. Sperelakis, Y. Kurachi, A. Terzic & M. V. Cohen, pp. 357-372, Academic Press, New York
198. -Robinson,R.B. & DiFrancesco,D. (2001) Sinoatrial node and impulse initiation. In "Foundations of Cardiac Arrhythmias: basic concepts and clinical approaches", Eds. Spooner, P.M. and Rosen, M.R., Marcel Dekker, New York
199. -DiFrancesco,D. (2001) How cells respond to chemical mediators: Electrical signals. In "Frontiers of Life 4- Vol II Cells and Organisms", Academic Press, Baltimore
200. -DiFrancesco,D. (2003) I_f current: state of the art. In "Selective and specific I_f inhibition in cardiovascular disease", Eds. Bramah N. Singh & Paul M. Vanhoutte, Lippincot Williams & Wilkins, London, pp. 1-10.
201. . DiFrancesco,D. (2003) Pacemaker channels and normal automaticity. In "Cardiac Electrophysiology: from cell to bedside" IV ed., Eds. D. P. Zipes & J. Jalife, Saunders, Philadelphia, Chapter 12, pp. 103-111.
202. -DiFrancesco,D. (2004) If current inhibitors: properties of drug-channel interaction. In "Selective and specific I_f inhibition in cardiology", Ed. K. Fox, Science Press, London, pp. 1-14.

203. -Baruscotti,M., Gnecchi-Ruscone T. & DiFrancesco, D. (2006) Familiar Sinus Bradycardia-Bradicardia sinusale familiare. In Enciclopedia Medica Italiana, Aggiornamento III, pp. 450-454
204. -Barbuti, A., Bucchi, A., Baruscotti, M. & DiFrancesco, D. (2010) The “funny” pacemaker current. In “Novel Therapeutic Targets for Antiarrrhythmic Drugs”, Ed. G. E. Billman, John Wiley & Sons, pp. 59-99
205. -Barbuti A., Bucchi A., Milanesi R., Bottelli G., Crespi A. & DiFrancesco D. (2011). The "funny" pacemaker current in "Heart Rate and Rhythm-Molecular Basis, Pharmacological Modulation and Clinical Implications". Eds. Onkar Tripathi, Ursula Ravens, Mike Sanguinetti; Springer-Verlag, pp. 59-81–Bucchi A., Piantoni C., Barbuti A., DiFrancesco, D. & Baruscotti, M. (2018) HCN channels and cardiac pacemaking. In “Channelopathies in Heart Disease”, Eds. D. Thomas & C.A. Remme, Cardiac and Vascular Biology, Springer International Publishing AG, part of Springer Nature, pp. 97-126