

## CURRICULUM VITAE



### INFORMAZIONI PERSONALI

Nome **BOTTINELLI ROBERTO**  
Indirizzo **DIPARTIMENTO DI MEDICINA MOLECOLARE**  
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Nazionalità Italiana  
Data di nascita 20 APRILE 1956

### ESPERIENZA LAVORATIVA

Esperienze professionali (incarichi ricoperti e funzioni svolte)

**DIRETTORE DIPARTIMENTO DI MEDICINA MOLECOLARE DAL GENNAIO 2012**  
**PROFESSORE ORDINARIO DI FISILOGIA DAL 2001: DOCENTE DI FISILOGIA PER IL CORSO DI LAUREA IN MEDICINA E CHIRURGIA.**  
**COORDINATORE DEL LABORATORIO DI RICERCA DI FISILOGIA MUSCOLARE DEL DIPARTIMENTO DAL 2000. SVOLGE RICERCHE NELLO STESSO AMBITO DAL 1982.**  
**DIRETTORE DEL CENTRO DI RICERCA IN BIOLOGIA E MEDICINA DELLO SPORT DAL 2010.**  
**DIRETTORE SCUOLA DI SPECIALIZZAZIONE IN MEDICINA DELLO SPORT DAL 2003.**  
**DIRETTORE DIPARTIMENTO DI FISILOGIA (2008-2011).**  
**MEMBRO DELL'EDITORIAL BOARD DEL JOURNAL OF PHYSIOLOGY (LONDON) (2004-2011); SENIOR EDITOR (2006 -2011); MEMBRO DELL'EXECUTIVE COMMITTEE (2008-2011).**  
**SENIOR EDITOR DELLO EUROPEAN JOURNAL OF APPLIED PHYSIOLOGY (2003-2010).**  
**DIRETTORE DIPARTIMENTO DI MEDICINA SPERIMENTALE (2005-2008).**  
**DIRETTORE ISTITUTO INTERUNIVERSITARIO DI MIOLOGIA (2008-2011).**  
**PROFESSORE ASSOCIATO DI FISILOGIA (1998-2001): DOCENTE DI FISILOGIA PER IL CORSO DI LAUREA IN MEDICINA E CHIRURGIA.**  
**RICERCATORE (1992-1998).**

### ISTRUZIONE E FORMAZIONE

Titolo di studio Dottorato di Ricerca in Fisiologia (1988)  
Specializzazione in Medicina dello Sport (1986)  
Laurea in medicina e Chirurgia (1981)  
Maturità Classica (1975)

Altri titoli di studio e professionali

**CAPACITÀ LINGUISTICHE.**

PRIMA LINGUA

**ITALIANO**

ALTRE LINGUE

**INGLESE**

- Capacità di lettura
- Capacità di scrittura
- Capacità di espressione orale

ECCELLENTE

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CAPACITÀ E COMPETENZE  
NELL'USO DI TECNOLOGIE  
*Con computer, attrezzature specifiche,  
macchinari, ecc.*

OTTIMA CAPACITÀ DI UTILIZZO DI COMPUTER (PC E MAC)

OTTIMA CONOSCENZA PROGRAMMI OFFICE PER WINDOWS E MAC, DATA BASE SCIENTIFICI, PROGRAMMI DI GRAFICA SCIENTIFICA

OTTIMA CONOSCENZA ATTREZZATURE SCIENTIFICHE DI BASE PER LABORATORIO BIOMEDICO E MIOGRAFI PER STUDIO DELLA FUNZIONE MUSCOLARE

ALTRO / CAPACITÀ E  
COMPETENZE  
*Competenze non precedentemente  
indicate.*

[ Descrivere tali competenze e indicare dove sono state acquisite. ]

Pubblicazioni

94 pubblicazioni in extenso;  
H index 34 (ISI);  
4181 citazioni totali;  
608 impact factor totale;  
elenco delle pubblicazioni: vedi allegato

Altri titoli

**ALLEGATI**

ELENCO DELLE PUBBLICAZIONI IN EXTENSO

## **Pubblicazioni in extenso**

**Roberto Bottinelli**

**Dipartimento Medicina Molecolare**

**Università di Pavia**

1. Farini A, Sitzia C, Navarro C, D'Antona G, Belicchi M, Parolini D, Del Fraro G, Razini P, Bottinelli R, Meregalli M & Torrente Y. (2012). Absence of T and B lymphocytes modulates dystrophic features in dysferlin deficient animal model. *Exp Cell Res* 318, 1160-1174.
2. Canepari M, Maffei M, Longa E, Geeves M & Bottinelli R. (2012). Actomyosin kinetic of pure fast and slow rat myosin isoforms studied by in vitro motility assay approach. *Exp Physiol*.
3. Tedesco FS, Hoshiya H, D'Antona G, Gerli MF, Messina G, Antonini S, Tonlorenzi R, Benedetti S, Berghella L, Torrente Y, Kazuki Y, Bottinelli R, Oshimura M & Cossu G. (2011). Stem cell-mediated transfer of a human artificial chromosome ameliorates muscular dystrophy. *Sci Transl Med* 3, 96ra78.
4. Pellegrino MA, Desaphy JF, Brocca L, Pierno S, Camerino DC & Bottinelli R. (2011). Redox homeostasis, oxidative stress and disuse muscle atrophy. *J Physiol* 589, 2147-2160.
5. Maffiuletti NA, Minetto MA, Farina D & Bottinelli R. (2011). Electrical stimulation for neuromuscular testing and training: state-of-the art and unresolved issues. *Eur J Appl Physiol* 111, 2391-2397.
6. Gondin J, Brocca L, Bellinzona E, D'Antona G, Maffiuletti NA, Miotti D, Pellegrino MA & Bottinelli R. (2011). Neuromuscular electrical stimulation training induces atypical adaptations of the human skeletal muscle phenotype: a functional and proteomic analysis. *J Appl Physiol* 110, 433-450.
7. Camerino GM, Pellegrino MA, Brocca L, Digennaro C, Camerino DC, Pierno S & Bottinelli R. (2011). Statin or fibrate chronic treatment modifies the proteomic profile of rat skeletal muscle. *Biochemical pharmacology* 81, 1054-1064.
8. Bottinelli R & Westerblad H. (2011). Reactive oxygen and nitrogen species in skeletal muscle: acute and long-term effects. *J Physiol* 589, 2117-2118.
9. Tricarico D, Mele A, Camerino GM, Bottinelli R, Brocca L, Frigeri A, Svelto M, George AL, Jr. & Camerino DC. (2010). The KATP channel is a molecular sensor of atrophy in skeletal muscle. *J Physiol* 588, 773-784.

10. Flati V, Caliaro F, Speca S, Corsetti G, Cardile A, Nisoli E, Bottinelli R & G DA. (2010). Essential amino acids improve insulin activation of AKT/MTOR signaling in soleus muscle of aged rats. *Int J Immunopathol Pharmacol* 23, 81-89.
11. Desaphy JF, Pierno S, Liantonio A, Giannuzzi V, Digennaro C, Dinardo MM, Camerino GM, Ricciuti P, Brocca L, Pellegrino MA, Bottinelli R & Camerino DC. (2010). Antioxidant treatment of hindlimb-unloaded mouse counteracts fiber type transition but not atrophy of disused muscles. *Pharmacol Res* 61, 553-563.
12. D'Antona G, Ragni M, Cardile A, Tedesco L, Dossena M, Bruttini F, Caliaro F, Corsetti G, Bottinelli R, Carruba MO, Valerio A & Nisoli E. (2010). Branched-chain amino acid supplementation promotes survival and supports cardiac and skeletal muscle mitochondrial biogenesis in middle-aged mice. *Cell Metab* 12, 362-372.
13. Canepari M, Pellegrino MA, D'Antona G & Bottinelli R. (2010). Skeletal muscle fibre diversity and the underlying mechanisms. *Acta Physiol (Oxf)* 199, 465-476.
14. Canepari M, Pellegrino MA, D'Antona G & Bottinelli R. (2010). Single muscle fiber properties in aging and disuse. *Scand J Med Sci Sports* 20, 10-19.
15. Brocca L, Pellegrino MA, Desaphy JF, Pierno S, Camerino DC & Bottinelli R. (2010). Is oxidative stress a cause or consequence of disuse muscle atrophy in mice? A proteomic approach in hindlimb-unloaded mice. *Exp Physiol* 95, 331-350.
16. Borina E, Pellegrino MA, D'Antona G & Bottinelli R. (2010). Myosin and actin content of human skeletal muscle fibers following 35 days bed rest. *Scand J Med Sci Sports* 20, 65-73.
17. Pansarasa O, Rinaldi C, Parente V, Miotti D, Capodaglio P & Bottinelli R. (2009). Resistance training of long duration modulates force and unloaded shortening velocity of single muscle fibres of young women. *J Electromyogr Kinesiol* 19, e290-300.
18. Durieux AC, D'Antona G, Desplanches D, Freyssenet D, Klossner S, Bottinelli R & Fluck M. (2009). Focal adhesion kinase is a load-dependent governor of the slow contractile and oxidative muscle phenotype. *J Physiol* 587, 3703-3717.
19. Canepari M, Rossi R, Pansarasa O, Maffei M & Bottinelli R. (2009). Actin sliding velocity on pure myosin isoforms from dystrophic mouse muscles. *Muscle Nerve* 40, 249-256.

20. Parente V, D'Antona G, Adami R, Miotti D, Capodaglio P, De Vito G & Bottinelli R. (2008). Long-term resistance training improves force and unloaded shortening velocity of single muscle fibres of elderly women. *Eur J Appl Physiol* 104, 885-893.
21. Benchaouir R, Meregalli M, Farini A, D'Antona G, Belicchi M, Goyenvalle A, Battistelli M, Bresolin N, Bottinelli R, Garcia L & Torrente Y. (2008). [Restoration of human dystrophin following transplantation of exon-skipping-engineered DMD patient stem cells into dystrophic mice]. *Med Sci (Paris)* 24, 99-101.
22. Torrente Y, Belicchi M, Marchesi C, Dantona G, Cogiamanian F, Pisati F, Gavina M, Giordano R, Tonlorenzi R, Fagiolari G, Lamperti C, Porretti L, Lopa R, Sampaolesi M, Vicentini L, Grimoldi N, Tiberio F, Songa V, Baratta P, Prella A, Forzenigo L, Guglieri M, Pansarasa O, Rinaldi C, Mouly V, Butler-Browne GS, Comi GP, Biondetti P, Moggio M, Gaini SM, Stocchetti N, Priori A, D'Angelo MG, Turconi A, Bottinelli R, Cossu G, Rebullia P & Bresolin N. (2007). Autologous transplantation of muscle-derived CD133+ stem cells in Duchenne muscle patients. *Cell transplantation* 16, 563-577.
23. Sampaolesi M, Blot S, Bottinelli R & Cossu G. (2007). Sampaolesi et al. reply. *Nature* 450, E23-25.
24. Farini A, Meregalli M, Belicchi M, Battistelli M, Parolini D, D'Antona G, Gavina M, Ottoboni L, Constantin G, Bottinelli R & Torrente Y. (2007). T and B lymphocyte depletion has a marked effect on the fibrosis of dystrophic skeletal muscles in the scid/mdx mouse. *The Journal of pathology* 213, 229-238.
25. D'Antona G, Pellegrino MA, Carlizzi CN & Bottinelli R. (2007). Deterioration of contractile properties of muscle fibres in elderly subjects is modulated by the level of physical activity. *Eur J Appl Physiol* 100, 603-611.
26. D'Antona G, Brocca L, Pansarasa O, Rinaldi C, Tupler R & Bottinelli R. (2007). Structural and functional alterations of muscle fibres in the novel mouse model of facioscapulohumeral muscular dystrophy. *J Physiol* 584, 997-1009.
27. Brunelli S, Sciorati C, D'Antona G, Innocenzi A, Covarello D, Galvez BG, Perrotta C, Monopoli A, Sanvito F, Bottinelli R, Ongini E, Cossu G & Clementi E. (2007). Nitric oxide release combined with nonsteroidal antiinflammatory activity prevents muscular dystrophy pathology and enhances stem cell therapy. *Proc Natl Acad Sci U S A* 104, 264-269.
28. Benchaouir R, Meregalli M, Farini A, D'Antona G, Belicchi M, Goyenvalle A, Battistelli M, Bresolin N, Bottinelli R, Garcia L & Torrente Y. (2007). Restoration of human dystrophin following transplantation of exon-skipping-engineered DMD

patient stem cells into dystrophic mice. *Cell stem cell* 1, 646-657.

29. Vanzi F, Capitanio M, Sacconi L, Stringari C, Cicchi R, Canepari M, Maffei M, Piroddi N, Poggesi C, Nucciotti V, Linari M, Piazzesi G, Tesi C, Antolini R, Lombardi V, Bottinelli R & Pavone FS. (2006). New techniques in linear and non-linear laser optics in muscle research. *J Muscle Res Cell Motil* 27, 469-479.
30. Sampaolesi M, Blot S, D'Antona G, Granger N, Tonlorenzi R, Innocenzi A, Mognol P, Thibaud JL, Galvez BG, Barthelemy I, Perani L, Mantero S, Guttinger M, Pansarasa O, Rinaldi C, Cusella De Angelis MG, Torrente Y, Bordignon C, Bottinelli R & Cossu G. (2006). Mesoangioblast stem cells ameliorate muscle function in dystrophic dogs. *Nature* 444, 574-579.
31. Nyitrai M, Rossi R, Adamek N, Pellegrino MA, Bottinelli R & Geeves MA. (2006). What limits the velocity of fast-skeletal muscle contraction in mammals? *J Mol Biol* 355, 432-442.
32. Mourkioti F, Kratsios P, Luedde T, Song YH, Delafontaine P, Adami R, Parente V, Bottinelli R, Pasparakis M & Rosenthal N. (2006). Targeted ablation of IKK2 improves skeletal muscle strength, maintains mass, and promotes regeneration. *J Clin Invest* 116, 2945-2954.
33. Minetti GC, Colussi C, Adami R, Serra C, Mozzetta C, Parente V, Fortuni S, Straino S, Sampaolesi M, Di Padova M, Illi B, Gallinari P, Steinkuhler C, Capogrossi MC, Sartorelli V, Bottinelli R, Gaetano C & Puri PL. (2006). Functional and morphological recovery of dystrophic muscles in mice treated with deacetylase inhibitors. *Nat Med* 12, 1147-1150.
34. Maffiuletti NA, Zory R, Miotti D, Pellegrino MA, Jubeau M & Bottinelli R. (2006). Neuromuscular adaptations to electrostimulation resistance training. *Am J Phys Med Rehabil* 85, 167-175.
35. Gelfi C, Vigano A, Ripamonti M, Pontoglio A, Begum S, Pellegrino MA, Grassi B, Bottinelli R, Wait R & Cerretelli P. (2006). The Human Muscle Proteome in Aging. *J Proteome Res* 5, 1344-1353.
36. Gabellini D, D'Antona G, Moggio M, Prella A, Zecca C, Adami R, Angeletti B, Ciscato P, Pellegrino MA, Bottinelli R, Green MR & Tupler R. (2006). Facioscapulohumeral muscular dystrophy in mice overexpressing FRG1. *Nature* 439, 973-977.
37. Denti MA, Rosa A, D'Antona G, Sthandier O, De Angelis FG, Nicoletti C, Allocca M, Pansarasa O, Parente V, Musaro A, Auricchio A, Bottinelli R & Bozzoni I. (2006). Chimeric adeno-associated virus/antisense U1 small nuclear RNA

effectively rescues dystrophin synthesis and muscle function by local treatment of mdx mice. *Hum Gene Ther* 17, 565-574.

38. Denti MA, Rosa A, D'Antona G, Sthandier O, De Angelis FG, Nicoletti C, Allocca M, Pansarasa O, Parente V, Musaro A, Auricchio A, Bottinelli R & Bozzoni I. (2006). Body-wide gene therapy of Duchenne muscular dystrophy in the mdx mouse model. *Proc Natl Acad Sci U S A* 103, 3758-3763.
39. D'Antona G, Lanfranconi F, Pellegrino MA, Brocca L, Adami R, Rossi R, Moro G, Miotti D, Canepari M & Bottinelli R. (2006). Skeletal muscle hypertrophy and structure and function of skeletal muscle fibres in male body builders. *J Physiol* 570, 611-627.
40. Capitanio M, Canepari M, Cacciafesta P, Lombardi V, Cicchi R, Maffei M, Pavone FS & Bottinelli R. (2006). Two independent mechanical events in the interaction cycle of skeletal muscle myosin with actin. *Proc Natl Acad Sci U S A* 103, 87-92.
41. Rossi R, Maffei M, Bottinelli R & Canepari M. (2005). Temperature dependence of speed of actin filaments propelled by slow and fast skeletal myosin isoforms. *J Appl Physiol* 99, 2239-2245.
42. Pellegrino MA, Brocca L, Dioguardi FS, Bottinelli R & D'Antona G. (2005). Effects of voluntary wheel running and amino acid supplementation on skeletal muscle of mice. *Eur J Appl Physiol* 93, 655-664.
43. Canepari M, Rossi R, Pellegrino MA, Orrell RW, Cobbold M, Harridge S & Bottinelli R. (2005). Effects of resistance training on myosin function studied by the in vitro motility assay in young and older men. *J Appl Physiol* 98, 2390-2395.
44. Torrente Y, Belicchi M, Sampaolesi M, Pisati F, Meregalli M, D'Antona G, Tonlorenzi R, Porretti L, Gavina M, Mamchaoui K, Pellegrino MA, Furling D, Mouly V, Butler-Browne GS, Bottinelli R, Cossu G & Bresolin N. (2004). Human circulating AC133(+) stem cells restore dystrophin expression and ameliorate function in dystrophic skeletal muscle. *J Clin Invest* 114, 182-195.
45. Toniolo L, Patruno M, Maccatrozzo L, Pellegrino MA, Canepari M, Rossi R, D'Antona G, Bottinelli R, Reggiani C & Mascarello F. (2004). Fast fibres in a large animal: fibre types, contractile properties and myosin expression in pig skeletal muscles. *J Exp Biol* 207, 1875-1886.
46. Polla B, D'Antona G, Bottinelli R & Reggiani C. (2004). Respiratory muscle fibres: specialisation and plasticity. *Thorax* 59, 808-817.

47. Pellegrino MA, D'Antona G, Bortolotto S, Boschi F, Pastoris O, Bottinelli R, Polla B & Reggiani C. (2004). Clenbuterol antagonizes glucocorticoid-induced atrophy and fibre type transformation in mice. *Exp Physiol* 89, 89-100.
48. Linari M, Bottinelli R, Pellegrino MA, Reconditi M, Reggiani C & Lombardi V. (2004). The mechanism of the force response to stretch in human skinned muscle fibres with different myosin isoforms. *J Physiol* 554, 335-352.
49. Sampaolesi M, Torrente Y, Innocenzi A, Tonlorenzi R, D'Antona G, Pellegrino MA, Barresi R, Bresolin N, De Angelis MG, Campbell KP, Bottinelli R & Cossu G. (2003). Cell therapy of alpha-sarcoglycan null dystrophic mice through intra-arterial delivery of mesoangioblasts. *Science* 301, 487-492.
50. Pellegrino MA, Canepari M, Rossi R, D'Antona G, Reggiani C & Bottinelli R. (2003). Orthologous myosin isoforms and scaling of shortening velocity with body size in mouse, rat, rabbit and human muscles. *J Physiol* 546, 677-689.
51. D'Antona G, Pellegrino MA, Adami R, Rossi R, Carlizzi CN, Canepari M, Saltin B & Bottinelli R. (2003). The effect of ageing and immobilization on structure and function of human skeletal muscle fibres. *J Physiol* 552, 499-511.
52. D'Antona G, Megighian A, Bortolotto S, Pellegrino MA, Ragona RM, Staffieri A, Bottinelli R & Reggiani C. (2002). Contractile properties and myosin heavy chain isoform composition in single fibre of human laryngeal muscles. *J Muscle Res Cell Motil* 23, 187-195.
53. Weiss S, Rossi R, Pellegrino MA, Bottinelli R & Geeves MA. (2001). Differing ADP Release Rates from Myosin Heavy Chain Isoforms Define the Shortening Velocity of Skeletal Muscle Fibers. *J Biol Chem* 276, 45902-45908.
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57. Reggiani C, Bottinelli R & Stienen GJ. (2000). Sarcomeric Myosin Isoforms: Fine



Tuning of a Molecular Motor. *News Physiol Sci* 15, 26-33.

58. He ZH, Bottinelli R, Pellegrino MA, Ferenczi MA & Reggiani C. (2000). ATP consumption and efficiency of human single muscle fibers with different myosin isoform composition. *Biophys J* 79, 945-961.
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60. Bottinelli R & Reggiani C. (2000). Human skeletal muscle fibres: molecular and functional diversity. *Prog Biophys Mol Biol* 73, 195-262.
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62. Bottinelli R, Pellegrino MA, Canepari M, Rossi R & Reggiani C. (1999). Specific contributions of various muscle fibre types to human muscle performance: an in vitro study. *J Electromyogr Kinesiol* 9, 87-95.
63. Sartorio A, Narici M & Bottinelli R. (1998). Different impairment of muscle strength in adults with childhood-onset and acquired GH deficiency. *J Clin Endocrinol Metab* 83, 712.
64. Harridge SD, Bottinelli R, Canepari M, Pellegrino M, Reggiani C, Esbjornsson M, Balsom PD & Saltin B. (1998). Sprint training, in vitro and in vivo muscle function, and myosin heavy chain expression. *J Appl Physiol* 84, 442-449.
65. Bottinelli R, Coviello DA, Redwood CS, Pellegrino MA, Maron BJ, Spirito P, Watkins H & Reggiani C. (1998). A mutant tropomyosin that causes hypertrophic cardiomyopathy is expressed in vivo and associated with an increased calcium sensitivity. *Circ Res* 82, 106-115.
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76. Bottinelli R, Canepari M, Cappelli V & Reggiani C. (1995). Maximum speed of shortening and ATPase activity in atrial and ventricular myocardia of hyperthyroid rats. *Am J Physiol* 269, C785-790.
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85. Cappelli V, Bottinelli R, Polla B & Reggiani C. (1990). Altered contractile properties of rat cardiac muscle during experimental thiamine deficiency and food deprivation. *J Mol Cell Cardiol* 22, 1095-1106.
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89. Altringham JD & Bottinelli R. (1985). The descending limb of the sarcomere

length-force relation in single muscle fibres of the frog. *J Muscle Res Cell Motil* 6, 585-600.

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<b>DIRETTORE DI DIPARTIMENTO</b>	<b>Indennità di Carica</b>	<b>Gettone di presenza per seduta</b>
<b>Prof. Roberto Bottinelli</b>		