

CURRICULUM VITAE DI EMANUELA BALESTRIERI

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Laurea nel 1997 in Scienze biologiche presso l’Università degli Studi di Roma “La Sapienza” con una tesi dal titolo “Analisi delle mutazioni indotte dalla Camptotecina nel gene *hgpri* in cellule di hamster cinese”.

Nel 2004 consegue il titolo di Dottore di ricerca in “Biologia e Biotecnologie Cellulari e Molecolari” presso l’Università di Messina (Italia) discutendo una tesi dal titolo “Attività antivirale di inibitori nucleosidici di nuova sintesi sulla trasmissione *in vitro* di HTLV-1 a linfomonociti periferici di adulto”.

Nel 2010 consegue il diploma di Specializzazione in Microbiologia e Virologia presso l’Università di Roma “Tor Vergata”, con una tesi dal titolo “*Valutazione dell’espressione di retrovirus endogeni (HERV) in pazienti autistici*”.

Dal 2004 al 2008 e dal 2011 ad oggi è titolare di assegni di ricerca presso il Dipartimento di Medicina Sperimentale e Scienze Biochimiche Università degli Studi di Roma “Tor Vergata” (Italia).

Dal 2008 al 2011 è titolare di un incarico di collaborazione coordinata e continuativa della durata di tre anni nell’ambito del progetto di ricerca FIRB dal titolo “Nuove terapie antitumorali basate sull’impiego di tecnologie innovative”

Dal 1998 ad oggi ha partecipato a numerosi progetti di ricerca riguardanti

- 1) Ruolo dei retrovirus endogeni umani nell’eziopatogenesi di patologie di diversa natura
- 2) Studio dell’attività di inibitori della trascrittasi inversa nella trasmissione di HTLV-1 e di HIV e di inibitori della replicazione di HCV
- 3) Studio dei meccanismi coinvolti nell’eziopatogenesi, nell’apoptosi e nella terapia delle infezioni virali

L’attività di ricerca è documentata da 39 pubblicazioni scientifiche su riviste internazionali.

Elenco delle pubblicazioni

1. **Balestrieri E.**, Zanier R., Degrassi F. Molecular characterization of camptothecin-induced mutations at the *hprt* locus in Chinese hamster cells. *Mutat. Res.* (2001); 476 (1-2): 63-69.

2. **Balestrieri E.**, Matteucci C., Bonmassar E. and Macchi B. Efficacy of 2',3'-Dideoxy-3-thiacytidine (3TC) in preventing transmission of HTLV-1 to peripheral blood mononuclear cells. A joint meeting of The International Society of Immunopharmacology and The Italian Association of Immunopharmacology. 14^o National Congress Florence, Italy Nov 10-11, 2000 *Journal of Chemotherapy* 12, S-6.Nov. (2000).
3. Macchi B., Matteucci C, **Balestrieri E.**, Pagnini V. and Mastino A. "Modulation of cell death by nucleoside inhibitors, azidothymidine." A joint meeting of The International Society of Immunopharmacology and The Italian association of Immunopharmacology. 14^o National Congress, Italy. *Journal of Chemotherapy* 12, S-6, Nov. (2000).
4. Zhang J., **Balestrieri E.**, Grelli S., Matteucci C., Pagnini V., D'Agostini C., Mastino A., Macchi B. Efficacy of 3'-azidothymidine (AZT) in preventing HTLV-1 transmission to human cord blood mononuclear cells. *Virus Res.* (2001), 78(1-2): 67-78.
5. Macchi B., Matteucci C., **Balestrieri E.**, Mastino A. Effect of nucleoside inhibitors on activation of cell death. XXX National Congress of the Italian Pharmacological Society. *Pharmacological Research Vol 43, Suppl A* (2001).
6. **Balestrieri E.**, Matteucci C., Mastino A. and Macchi B. Efficacy of 2',3'-Dideoxy-3-thiacytidine (3TC) in preventing transmission of HTLV-1 to peripheral blood mononuclear cells in vitro. 10^o International Conference on Human Retrovirology: HTLV and Related Viruses Dublin, Ireland June 25-29, 2001. *AIDS Res Human Retrov.* 17, S-29. (2001). **I.F. 2.020**
7. Matteucci C., **Balestrieri E.**, Tacconi S., Macchi B., Mastino A. Apoptosis and the Immortalization process driven by HTLV-1. 10^o International Conference on Human Retrovirology: HTLV and Related Viruses Dublin, Ireland June 25-29, 2001. *AIDS Res Human Retrov.* 17,S-29 (2001).
8. Matteucci C., Pagnini V., Tacconi S., **Balestrieri E.**, Macchi B., Mastino A. Modulation of apoptosis during HTLV-1 infection *in vitro*. The European HTLV Pathogenesis Meeting, in Potsdam, Germany, May 19-21, 2000; *Virus Research* 78,1-2,30 October (2001).
9. Franzese O., **Balestrieri E.**, Comandini A., Forte G., Macchi B., Bonmassar E. Telomerase activity of human peripheral blood mononuclear cells in the course of HTLV type 1 infection in vitro. *AIDS Res Hum Retroviruses* (2002); 18 (4): 249-251.
10. **Balestrieri E.**, Forte G., Matteucci C., Mastino A., Macchi B. Effect of lamivudine on transmission of human T-cell lymphotropic virus type 1 to adult peripheral blood mononuclear cells *in vitro*. *Antimicrob Agents Chemother* (2002); 46(9): 3080-3083.
11. Macchi B., **Balestrieri E.**, Matteucci C., Mastino A. Use of fluorescence in situ hybridisation (FISH) for assaying the effects of Nucleoside-based reverse transcriptase inhibitors on HTLV-1 infection in vitro. 11th International conference on Human retrovirology HTLV and related viruses. SD. Francisco USA June (2003). *AIDS Res Human Retrov.* 19, S-1. (2003).
12. **Balestrieri E.**, Forte G., Matteucci C., Mastino A., Macchi B. Author's reply to letter to Editor entitled "Lamivudine resistance in HTLV-1 might be due to a polymorphism at codon

- 118 (V/L) of the Reverse Transcriptase. *Antimicrob Agents Chemother* (2003); 47(5): 1774-1775.
13. Macchi B., **Balestrieri E.**, Mastino A. Effect of nucleoside-based antiretroviral chemotherapy on human T-cell leukaemia/lymphotropic virus type 1 (HTLV-1) infection *in vitro*. *J Antimicrob Chemother.* (2003) 51(6): 1327-1330.
 14. Medici MA., Sciortino MT., Perri D., Amici C., Avitabile E., Ciotti M., **Balestrieri E.**, De Smaele E., Franzoso G., Mastino A. Protection by herpes simplex virus glycoprotein D against Fas-mediated apoptosis: Role of nuclear factor kappaB. *J Biol Chem* (2003); 278(38): 36059-36067.
 15. Matteucci C., **Balestrieri E.**, Macchi B., Mastino A. Modulation of apoptosis during HTLV-1 mediated immortalization process *in vitro*. *J. Med. Virol.* (2004); 74(3):473-83. **I.F. 2.232**
 16. Tacconi S., Perri R., **Balestrieri E.**, Grelli S., Bernardini S., Annichiarico R., Mastino A., Caltagirone C., Macchi B. Increased caspase activation in peripheral blood mononuclear cells of patients with Alzheimer's disease. *Exp Neurol.* (2004); 190(1):254-62. **I.F. 3.974**
 17. Chiacchio U., **Balestrieri E.**, Macchi B., Iannazzo D., Piperno A., Rescifina A., Romeo R., Saglimbeni M., Sciortino MT., Valveri V., Mastino A., Romeo G. Synthesis of phosphonated carbocyclic 2'-oxa-3'-aza-nucleosides: novel inhibitors of reverse transcriptase. *J. Med. Chem.* (2005); 48 (5): 1389-94.
 18. **Balestrieri E.**, Sciortino MT., Mastino A., Macchi B. Protective effect of the acyclic nucleoside phosphonate tenofovir toward human T-cell leukemia/lymphotropic virus type 1 infection of human peripheral blood mononuclear cells *in vitro*. *Antiviral Res.* (2005); 68(3):154-62.
 19. **Balestrieri E.** Marino Merlo F., Romeo G., Chiacchio U., Mastino A., Macchi B. A novel, rapid assay for evaluating the inhibitory activity of new compounds towards HTLV-1 reverse transcriptase activity. *AIDS Res Human Retrov.* 21, 5. (2005).
 20. Romeo G., Iannazzo D., Piperno A., Romeo R., Saglimbeni M., Chiacchio MA., **Balestrieri E.**, Macchi B., Mastino A. Synthesis and biological evaluation of phosphonated dihydroisoxazole nucleosides. (2006) *Bioorg Med Chem.*14(11): 3818-24.
 21. Grelli S., **Balestrieri E.**, Matteucci C., Minutolo A., d'Ettore G., Lauria F., Montella F., Vullo V., Vella S., Favalli C., Mastino A., Macchi B. Apoptotic cell signaling in lymphocytes from HIV+ patients during successful therapy. *Ann N Y Acad Sci.* (2006) 1090:130-7.
 22. Serafino A., **Balestrieri E.**, Pierimarchi P., Matteucci C., Rasi G., Moroni G., Mastino A., Garaci E., Sinibaldi Vallebona P. Activation of human endogenous retrovirus -K and production of infectious viral-like particles in human melanoma cells. Perspectives in Melanoma X and The Third Annual International Melanoma Research Congress Noordwijk, Olanda 14-16 Set.2006. *Melanoma Research* Vol. 16, Sup. 1 (2006).
 23. Macchi B., Ascolani A., **Balestrieri E.**, Mosti S., Mastino A., Caltagirone C. Transcriptional profiling of inflammatory and apoptotic genes in peripheral blood mononuclear cells from

patients with Alzheimer disease. Alzheimer's and Parkinson's diseases: Progress and new perspectives. 8th international congress AD7PD Salzburg, Austria, March 14-18, 2007. *Neurodegenerative disease*. Vol. 4, suppl. 1 2007.

24. **Balestrieri E.**, Grelli S., Matteucci C., Minutolo A., d'Ettoire G., Di Sora F., Montella F., Vullo V., Vella S., Favalli C., Macchi B., Mastino A. Apoptosis-associated gene expression in HIV-infected patients in response to successful antiretroviral therapy. *J. Med. Virol.* (2007); 79(2):111-7.
25. Chiacchio U., Rescifina A., Iannazzo D., Piperno A., Romeo R., Borello L., Sciortino MT., **Balestrieri E.**, Macchi B., Mastino A., Romeo G. Phosphonated carbocyclic 2'-oxa-3'-azanucleosides as new antiretroviral agents. *J. Med. Chem.* (2007) 50(15):3747-50.
26. Matteucci C., Minutolo A., **Balestrieri E.**, Macchi B., Mastino A. HTLV-1 infected cell lines are susceptible to cell death induced by combination treatment with AZT and pharmacological inhibitors of NF- κ B. *AIDS Res Human Retrov.* 23, 4. (2007).
27. **Balestrieri E.**, Matteucci C., Ascolani A., Piperno A., Romeo R., Romeo G., Chiacchio U., Mastino A. and Macchi B. Effect of phosphonated carbocyclic 2'-oxa-3'-aza-nucleoside toward HTLV-1 infection *in vitro*. *Antimicrob Agents Chemother* (2008) 52(1):54-64.
28. **Balestrieri E.**, Ascolani A, Igarashi Y, Oki T, Mastino A, Balzarini J, Macchi B. Inhibition of cell-to-cell transmission of human T-cell lymphotropic virus type 1 *in vitro* by carbohydrate-binding agents. *Antimicrob Agents Chemother.* (2008); 52(8):2771-9.
29. Iannazzo D, Piperno A, Romeo G, Romeo R, Chiacchio U, Rescifina A, **Balestrieri E.**, Macchi B, Mastino A, Cortese R. 3-amino-2(5H)furanones as inhibitors of subgenomic hepatitis C virus RNA replication. *Bioorg Med Chem.* (2008); 16(21):9610-5.
30. Serafino A, **Balestrieri E.**, Pierimarchi P, Matteucci C, Moroni G, Oricchio E, Rasi G, Mastino A, Spadafora C, Garaci E, Sinibaldi Vallebona P. The activation of human endogenous retrovirus K (HERV-K) is implicated in melanoma cell malignant transformation. *Exp Cell Res.* (2009); 315(5):849-62.
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32. Matteucci C., Minutolo A., **Balestrieri E.**, Ascolani A., Grelli S., Macchi B., Mastino A. Effector caspase activation, in the absence of a conspicuous apoptosis induction, in mononuclear cells treated with azidothymidine. *Pharmacol Res* (2009); 59: 125-133.
33. Matteucci C, Minutolo A, **Balestrieri E.**, Marino-Merlo F, Bramanti P, Garaci E, Macchi B, Mastino A. Inhibition of NF- κ B activation sensitizes U937 cells to 3'-azido-3'-deoxythymidine induced apoptosis. *Cell Death Dis.* (2010); 1:e8
34. **Balestrieri E.**, Pizzimenti F, Ferlazzo A, Giofrè SV, Iannazzo D, Piperno A, Romeo R, Chiacchio MA, Mastino A, Macchi B. Antiviral activity of seed extract from *Citrus bergamia* towards human retroviruses. *Bioorg Med Chem.* (2011); 19(6):2084-9.

35. Ascolani A, **Balestrieri E**, Minutolo A, Mosti S, Spalletta G, Bramanti P, Mastino A, Caltagirone C, Macchi B. Dysregulated NF- κ B Pathway in Peripheral Mononuclear Cells of Alzheimer's Disease Patients. *Curr Alzheimer Res.* (2011).
36. Pica F, **Balestrieri E**, Serafino A, Sorrentino R, Gaziano R, Moroni G, Moroni N, Palmieri G, Mattei M, Garaci E, Sinibaldi-Vallebona P. Antitumor effects of the benzophenanthridine alkaloid sanguinarine in a rat syngeneic model of colorectal cancer. *Anticancer Drugs.* (2011)
37. **Balestrieri E**, Arpino C, Matteucci C, Sorrentino R, Pica F, Alessandrelli R, Coniglio A, Curatolo P, Rezza G, Macciardi F, Garaci E, Gaudi S, Sinibaldi-Vallebona P. HERVs expression in Autism Spectrum Disorders. *PLoS One* (2012).
38. Romeo R, Giofrè SV, Macchi B, **Balestrieri E**, Mastino A, Merino P, Carnovale C, Romeo G, Chiacchio U. Truncated reverse isoxazolidinyl nucleosides: a new class of allosteric HIV-1 reverse transcriptase inhibitors. *ChemMedChem.* (2012)
39. Garaci E, Pica F, Serafino A, **Balestrieri E**, Matteucci C, Moroni G, Sorrentino R, Zonfrillo M, Pierimarchi P, Sinibaldi-Vallebona P. Thymosin α 1 and cancer: action on immune effector and tumor target cells. *Ann N Y Acad Sci.* (2012).
40. Macchi B, **Balestrieri E**, Ascolani A, Hilburn S, Martin F, Mastino A, Taylor GP. Susceptibility of primary HTLV-1 isolates from patients with HTLV-1-associated myelopathy to reverse transcriptase inhibitors. *Viruses* (2011).