IL CURRICULUM VITAE

INFORMAZIONI PERSONALI

Nome		**Armando Bartolazzi**
Data di nascita		**11/02/1961**
Qualifica		**Dirigente Medico I livello - OSPEDALIERO**
Amministrazione		**Azienda Ospedaliera Snt'Andrea**
Incarico attuale		**Patologo (Tumor pathologist)**
Numero telefonico dell'ufficio		**0633775321**
Fax dell'ufficio		**0633776607**
E-mail istituzionale		**Armando.Bartolazzi@ki.se**

TITOLI DI STUDIO E PROFESSIONALI ED ESPERIENZE LAVORATIVE

Titolo di studio		Laurea in Medicina e Chirurgia
Altri titoli di studio e professionali		• Specializzazione in Anatomia Patologica; Specializzazione in Oncologia
Esperienze professionali (incarichi ricoperti)		**Current Position** 2001-Today: Dirigente First Level with high specialized profile in Thyroid Pathology. St. Andrea University Hospital, Rome, Italy (*Permanent Position*). **Previous Positions** May 1999- November 2001: Visiting Scientist and consultant pathologist Department of Oncology-Pathology, Cellular and Molecular Tumor Pathology, Cancer Centre Karolinska, CCK R8:04 Karolinska Hospital, Stockholm, Sweden (Prof. Olle Larsson Lab.) 1994-01 Assistant Professor of Pathology, Department of Pathology National Cancer Institute Regina Elena, Rome, Italy (*Permanent position).* 1993-94: - Post-doctoral fellow, at the Pathology Research Laboratory, Department of Pathology, Massachusetts General Hospital, Harvard Medical School, Boston MA, (USA). (Prof. Ivan Stamenkovic Lab.) Since 1994**:** P.I. of an independent research group at the NCI Regina Elena of Rome and St. Andrea University Hospital of Rome, the activity of which is focused on Cancer Research and Translational Research in Pathology and Oncology. 1988-92: Research fellow at the Immunology Laboratory, National Cancer Institute, Regina Elena of Rome, Italy. PhD Program in Clinical and Experimental Oncology.
Capacità linguistiche		• Inglese corrente
Capacità nell'uso delle tecnologie		• Buona, relativamente alle tecnologie necessarie per le attività cliniche e sperimentali delle propie specialità.

collaborazione a riviste, ecc., ed ogni altra informazione che il dirigente ritiene di dover pubblicare)		• **Vedi portafogli clinici e scientifici in allegato.** **Member of the Editorial Board** Rare Tumors **Referee** The Lancet Cancer Research Journal of Clinical Oncology International Journal of Cancer American Journal of Pathology European Journal of Cancer British Journal of Cancer British Journal of Dermatology Thyroid Journal of Endocrinology Investigation Molecular Endocrinology Histopathology *Others*..... **Società Scientifiche di appartenenza:** **Membro a vita dell UICC** (Unione Internazionale Contro il Cancro) Membro della **European Accademy of Pathology** Membro della **Melanoma Research Society** (USA)

SCIENTIFIC PORTFOLIO
Approved by the Board of Research, January 1st 2008
Karolinska Institute, Stockholm, Sweden

ARMANDO BARTOLAZZI M.D., Ph.D.

February 2009

Scientific production

Summary of all original scientific papers

1. Bigotti, G., Jacovelli, A., **Bartolazzi, A**., Sciarretta, F. (1987). Su tre casi di metastasi alla cervice uterina da carcinoma della mammella. Patol. Clin. Ostet. Ginec. 15, pp.238-242

2. **Bartolazzi, A**., Barbieri, R., Nastruzzi, C., Natali, PG., Gambari, R. (1989). Antitumor activity of the proteinase inhibitor Tetra-p-amidino-phenoxy-neopentane, in a nude mouse model of human melanoma. In Vivo 3, pp.383-388.

3. Natali, PG., Nicotra, MR., **Bartolazzi, A**., Coscia, N., Bigotti, A., Zardi, L. (1990) -Expression and production of tenascin in benign and malignant lesions of melanocytic lineage. Int. J. Cancer 46, pp. 586-590.

4. Kantor, RRS., Giardina, SL., **Bartolazzi, A**., Townsend, AJ., Myers, CE., Cowan, KH., Longo, DL and Natali, PG. (1991). Monoclonal antibodies to glutathione-S-transferase-p. Immunohistochemical analysis of human tissues and cancers. Int. J. Cancer 47, pp.193-201.

5. **Bartolazzi, A.,** Mottolese, M., Prat, M., Vocaturo, A., Vocaturo, G., Atlante, G and Natali, PG. (1991). Use of monoclonal antibodies in solid tumors diagnosis: Endometrial Carcinoma. Cytotechnology 5, pp.35-40.

6. Atlante, M and **Bartolazzi, A**. (1991). Considerazioni in tema di epidemiologia del carcinoma endometriale. Acta Oncologica 13, pp. 85-91.

7. **Bartolazzi, A.,** Mottolese, M., Vocaturo, A., Bigotti, A., Vocaturo, G., Atlante, G., Prat, M and Natali, PG. (1991). Expression of CAR-3 and TAG-72 macromolecules in normal and transformed endometrium. Potential diagnostic application in postmenopausal age. Cancer Res. 51, pp. 3001-3005.

8. **Bartolazzi, A**., Fraioli, R., Tarone, G and Natali, PG. (1991). Generation and characterization of the murine monoclonal antibody M-Kid 2 to Vla-3 integrin. Hybridoma 10, pp. 707-720.

9. Mariani, M., Bartolazzi**, A.,** Camagna, M., Parisi, A., Tarditi, L., Vassarotto, C. and Natali, PG. (1991). Monoclonal antibodies to a soluble metallic radioisotope chelator: development and characterization. Hybridoma 10, pp. 695-705.

10. Mottolese, M., Vocaturo, A., Bartolazzi**, A**., Vocaturo, G., Benevolo, M., Sedati, A., Atlante, G., Prat, M., Bigotti, A. and Natali, PG. (1992). Immunocytodiagnosis of atypical hyperplasia and endometrial carcinoma in post menopausal women. Int. J. Cancer 53, pp.1-4.

11. **Bartolazzi, A**., Cerboni, C., Full, C., Venturo, I., Valentini, C., Bigotti, A. and Natali, PG. (1993). Vla-3 distribution in normal and neoplastic non lymphoid human tissues. Pathol. Res. Pract 189, pp. 387-393.

12. **Bartolazzi, A**., Kaczmarek, J., Nicolo, G., Risso, AM., Tarone, G., Rossino, P., Defilippi, P. and Castellani, P. (1993). The localization of the a3b1 integrin in some common epithelial tumors of the ovary and in their normal equivalents. Anticancer Res. 13, pp. 1-12.

13. Natali, PG., Nicotra, MR., Bartolazzi**, A**., Cavaliere, R., Bigotti, A. (1993). Integrin expression in cutaneous malignant melanoma: Association of the a3b1 heterodimer with tumor progression. Int. J. Cancer 54, pp. 68-72.

14. Raponi, G., Lun, MT., Gaeta, A., Ghezzi, MC., Nazzari, C., Mancini, C., Filadoro, F., **Bartolazzi, A**., Natali, PG., Rozenberg Arska, M., Verhoef, J. (1993). Differential effect of human anti-murine polyclonal and monoclonal antisera on TNFa production by human monocytes. J. of Chemoth. 5, pp. 317-324.

15. **Bartolazzi, A**., Cerboni, C., Nicotra, MR., Mottolese, M., Bigotti, A., and Natali, PG. (1994). Transformation and tumor progression are frequently associated with the expression of the a3b1 heterodimer in solid tumors. Int. J. Cancer 58, pp. 488-491.

16. Lun, MT, Amatucci, AM, Raponi, G, Filadoro, F, **Bartolazzi, A**, Fraioli, R, Natali, PG, Mancini, C. (1994). Murine monoclonal antibody elicited with antibiotic exposed Escherichia coli, exert protective

capacity in experimental bacterial infections. J. Med. Microbiol. 41, pp. 179-183.

17. **Bartolazzi, A**., Peach, R., Aruffo, A., and Stamenkovic, I. (1994). CD44-hyaluronate interaction is implicated in the regulation of tumor growth. J. Exp. Med. 180, pp. 53-66.

18. **Bartolazzi, A.,** Cerboni, C., Flamini, G., Bigotti, A., Lauriola, L. and Natali, P.G. (1995). Expression of a3b1 integrin receptor and its ligands in human lung tumors. Int. J. Cancer 64, pp. 248-252.

19. Barletta, C., Bartolazzi**, A**., Cimino Reale, G., Gambari, R., Nastruzzi, C., Barbieri, R., Del Senno, L., Castagnoli, A. and Natali, P.G. (1995). Cytogenetic, molecular and phenotypic characterization of the newly established renal carcinoma cell line KJ29. Evidence of translocations for chromosomes 1 and 3. Anticancer Res. 15, pp. 2129-2136.

20. **Bartolazzi, A**., Jackson, D., Bennett, K., Aruffo, A., Dickinson, R., Shields, J., Whittle, N. and Stamenkovic, I. (1995). Regulation of growth and dissemination of a human lymphoma by CD44 splice variants. J. Cell Sci. 108, pp. 1723-1733.

21. Bennett, KL., Modrell, B., Greenfield, B., **Bartolazzi, A**., Stamenkovic, I., Peach, R., Jackson, G., Spring, F. and Aruffo, A. (1995). Regulation of CD44 binding to hyaluronan by glycosylation of variably spliced exons. J. Cell Biol. 131, pp. 1623-1633.

22. **Bartolazzi, A**., Nocks, A., Aruffo, A., Spring, F., and Stamenkovic, I. (1996). Glycosylation of CD44 is implicated in CD44-mediated cell adhesion to hyaluronan. J. Cell Biol. 132, pp. 1199-1208

23. Coli, A., Bigotti, G.. and **Bartolazzi, A**. (1998) Malignant oncocitoma of the major salivary glands. Report of a post-irradiation case and review of the literature. J. Exp. Clin. Cancer Res. 17, pp.1-6.

24. Martegani, M.P., Del Prete, F., Gasbarri, A., Natali, P.G., and **Bartolazzi, A**. (1999). Structural variability of CD44v molecules and reliability of immunodetection of CD44 isoforms, using mAbs specific for CD44 variant exon products. Am. J. Pathol. 154, pp. 291-300.

25. Bigotti, G., Gasbarri, A., Castagnola, D., Madonna, V., **Bartolazzi, A .** (1999). Angiomyofibroblastoma and aggressive angiomyxoma: two benign mesenchymal neoplasms of the female genital tract. An immunohistochemical study. Pathol. Res. Pract. 195, pp. 39-44.

26. Gasbarri, A., Martegani, M.P., Del Prete, F., Lucante, T. Natali, P.G. and **Bartolazzi, A.** (1999): Galectin-3 and CD44v6 isoforms in the pre-operative evaluation of thyroid nodules. J. Clin. Oncol.17, pp. 3494-3502.

27. Spugnini, E.P., and **Bartolazzi A** (1999): Seminoma with cutaneous metastasis in a dog. JAAHA 36, pp.253-256.

28. Badaracco, G., Venuti, A., Bartolazzi**, A**., Morello, R., Marzetti, F., Marcante, M.L. (2000): Overexpression of p53 and bcl-2 proteins and the presence of HPV infection are independent events in head and neck cancer. J. Oral. Pathol. Med. 29 pp.173-179.

29. Pietrangeli A., Milella M., De Marco S., **Bartolazzi A**., Mottolese M., Zompetta C., Jandolo B. (2000). Brachial plexus neuropathy as unusual onset of diffuse neurolymphomatosis. Neurol. Sciences 21:241-45.

30. **Bartolazzi, A**. (2000): Improving accuracy of cytology for nodular thyroid lesions. The Lancet 355 pp.1661-1662.

31. Girnita, L., Girnita, A., Brodin, B., Xie, Y., Nilsson, G., Lundeberg, J., Wejde, J., **Bartolazzi, A**., Wiman, C., and Larsson, O. (2000): Increased expression of Insulin-like growth factor-1 receptor (IGF-1R) in malignant cells expressing aberrant p53. Functional impact. Cancer Res. 60:5278-5283.

32. **Bartolazzi, A**. and Gasbarri A. (2000): Thyroid disease classification. The Lancet 356:2010-11.

33. **Bartolazzi, A**., Gasbarri, A., Papotti, M., Bussolati, G., Lucante, T., Khan, A., Inohara, H., Marandino, F., Orlandi, F., Nardi, F., Vecchione, A., Larsson, O., and the Thyroid Cancer Study Group. (2001). Application of an immunodiagnostic method for improving the preoperative diagnosis of nodular thyroid lesions. The Lancet 357: 1644-50.

34. Brodin, B., Haslam, K., **Bartolazzi, A**., Xie, Y., Starborg, M., Lundeberg, J., Larsson, O. (2001): Cloning and characterisation of spliced fusion transcript variants of synovial sarcoma: SYT/SSX4,

SYT/SSX4v, and SYT/SSX2v. Possible regulatory role of the fusion gene product in wild type SYT expression. Gene 268:173-82.

35. Spugnini, EP., Ruslander, D., and **Bartolazzi, A** (2001). Extraskeletal osteosarcoma in a cat. JAVMA 219:60-62.

36. Ericsson, CB, Seregard, S., **Bartolazzi, A**., Liwitsky, E., Ferrone S., Kiessling, R., and Larsson, O. (2001): Expression of HLA classes in uveal melanoma and their correlation to survival. I.O.V.S. 42:2153-2156.

37. Brodin B., Tornkvist M., Haslam K., Xie Y., **Bartolazzi A**., Larsson O. (2001). A novel type of SYT-SSX4 fusion transcript in synovial sarcoma J. Natl. Cancer Inst. 93:1347-1349.

38. Ericsson, CB., Girnita, L., Seregard, S., **Bartolazzi, A**., Jager, MJ., and Larsson, O. (2001). Insulin-like growth factor-1 receptor (IGF-1R) in uveal melanoma: A potential therapeutic target and predictor for metastatic disease. I.O.V.S. 43:1-8.

39. Sjolin H., Tomasello E., Mousavi-Jazi M., **Bartolazzi A**., Vivier E., Karre K., and Cerboni C. (2002): Pivotal role of KARAP/DAP12 adaptor molecule in the natural killer cell-mediated resistance to murine cytomegalovirus infection. J. Exp. Med. 195:825-834.

40. Tornkvist, M., Brodin, B., **Bartolazzi, A**., Larsson, O. (2002): A novel type of SYT-SSX fusion; Methodological and Biological implications. Modern Pathology 15:679-685.

41. Xie Y., Skytting B., Nilsson G., Gasbarri A., Haslam K., **Bartolazzi A**., Brodin B., Mandahl N., and Larsson O. (2002): SYT-SSX fusion gene is critical for expression of cyclin D1 in synovial sarcoma cells. Cancer Res. 62:3861-3867.

42. Martegani MP, Gasbarri A, **Bartolazzi A**, Ruco L. (2002) La diagnosi molecolare del sarcoma sinoviale. Pathologica 94:257-262.

43. **Bartolazzi A**, Papotti M, Orlandi F. (2003) Methodological considerations regarding the use of galectin-3 expression analysis in preoperative evaluation of thyroid nodules.
J. Clin. Endocrinol. Metab. 88:950.

44. Gasbarri A, Del Prete F, Girnita L, Martegani MP, Natali PG, and **Bartolazzi A.:** (2003) CD44s-adhesive function, spontaneous and PMA inducible CD44 cleavage, are regulated at posttranslational level in cells of melanocytic lineage. Melanoma Res. 13:325-337.

45. Girnita A, Girnita L, del Prete F, **Bartolazzi A**, Larsson O, Axelson M. (2004). Cyclolignans as inhibitors of the insulin-like growth factor-1 receptor and malignant cell growth. Cancer Res. 64:236-42.

46. Volante M, Bozzalla-Cassione F, DePompa R, Saggiorato E, **Bartolazzi A**, Orlandi F, Papotti M. (2004). Galectin-3 and HBME-1 expression in oncocytic cell tumors of the thyroid. Virchows Arch. 445(2):183-8.

47. Gasbarri A, Marchetti C, Iervasi G, Bottoni A, Nicolini A, **Bartolazzi A**, Carpi A. (2004). From the bench to the bedside. Galectin-3 immunodetection for improving the preoperative diagnosis of the follicular thyroid nodules. Biomed Pharmacother. 58:356-9.

48. Gasbarri A, Sciacchitano S, Marasco A, Papotti M, Di Napoli A, Marzullo A, Yushkov P, Ruco L, **Bartolazzi A**. (2004). Detection and molecular characterization of thyroid cancer precursor lesions in a specific subset of Hashimoto's thyroiditis. Br J Cancer. 91:1096-104.

49. Iushkov PV, Antonova SS, **Bartolazzi A**. (2004). Galectin-3 in differential diagnosis and prognosis of follicular tumors of the thyroid gland. Arkh Patol. 66:39-42. Russian.

50. Papotti M, Rodriguez J, Pompa RD, **Bartolazzi A**, Rosai J. (2005).
Galectin-3 and HBME-1 expression in well-differentiated thyroid tumors with follicular architecture of uncertain malignant potential. Mod Pathol. 18:541-6.

51. Economou MA, All-Ericsson C, Bykov V, Girnita L, **Bartolazzi A**, Larsson O, Seregard S. (2005).
Receptors for the Liver Synthesized Growth Factors IGF-1 and HGF/SF in Uveal Melanoma: Intercorrelation and Prognostic Implications. Invest Ophthalmol Vis Sci. 46:4372-5.

52. Indrizzi E, Terenzi V, Renzi G, Bonamini M, **Bartolazzi A**, Fini G. (2005).
The rare condition of maxillary osteomyelitis. J Craniofac Surg. 16:861-4.

53. **Bartolazzi A.** and Bussolati G. (2006). Galectin-3 does not reliably distinguish benign from malignant

thyroid neoplasms. Histopathology 48:212-3 Doi: 10.1111/j.1365-2559.2005.02214.x

54. A. Carpi, A.G. Naccarato, G. Iervasi, G. Bevilacqua, A. Nicolini, P. Viacava, P. Collecchi, L. Lavra, C. Marchetti, S. Sciacchitano & **A. Bartolazzi** (2006). Large needle aspiration biopsy and galectin-3 determination in selected thyroid nodules with indeterminate FNA-cytology. Br J Cancer. 95:204-9.

55. B. Cecchinelli, L. Lavra, C. Rinaldo, S. Iacovelli, A. Gurtner, A. Gasbarri, A. Ulivieri, F. del Prete, M. Trovato, G Piaggio, **A. Bartolazzi,*** S. Soddu, & S. Sciacchitano. (2006). Repression of the antiapoptotic molecule Galectin-3 by homeodomain-interactin protein kinase 2-activated p53 is required for p53-induced apoptosis. Mol Cell Biol 26:4746-57. *(* Corresponding author*)

56. S. Persechino, [C]. Caperchi and **A. Bartolazzi.** (2007). A suspicious pigmented lesion mimicking a superficial spreading melanoma on pre-existing tattoo. JAAD 57; (5 Suppl): S122-3.).

57. Ulivieri A, Lavra L, Dominici R, Giacomelli L, Brunetti E, Sciacca L, Trovato M, Barresi G, Foukakis T, Jia-Jing L, Larsson C, **Bartolazzi A**, Sciacchitano S. (2008). Frizzled-1 is down regulated in follicular thyroid tumors and modulates growth and invasiveness. J Pathol. 215(1): 87-96.

58. Carlesimo M, Mari E, Caperchi C, Pietra ML, Pranteda G, **Bartolazzi A**, Camplone G. (2008). Angiomatoid lesions revealing an atrial myxoma. Eur J. Dermatol. 18(2): 203-4.

59. **Bartolazzi A**, Orlandi F, Saggiorato E, Volante M, Arecco F, Rossetto R, Palestini N, Ghigo E, Papotti M, Bussolati G, Martegani MP, Pantellini F, Carpi A, Giovagnoli MR, Monti S, Toscano V, Sciacchitano S, Pennelli GM, Mian C, Pelizzo MR, Rugge M, Troncone G, Palombini L, Chiappetta G, Botti G, Vecchione A, Bellocco R; Italian Thyroid Cancer Study Group (ITCSG). (2008). Galectin-3-expression analysis in the surgical selection of follicular thyroid nodules with indeterminate fine-needle aspiration cytology: a prospective multicentre study. The Lancet Oncol. 9(6): 543-9. Epub 2008 May 19.

60. Melotti F, Mari E, Giorgiana F, Fidanza L, Carlesimo M, Pilozzi E, Raffa E, Camplone G, **Bartolazzi A**. (2008). Actinic Reticulosis with clonal TCR (T-cell receptor) gene rearrangement. Eur J Dermatol. 18(5):598-600.

61. **Bartolazzi A**, D'Alessandria C, Parisella MG, Signore A, Del Prete F, Lavra L, Braesch-Andersen S, Massari R, Trotta C, Soluri A, Sciacchitano S, Scopinaro F. (2008). Thyroid cancer imaging in vivo by targeting the anti-apoptotic molecule galectin-3. PLoS ONE. 3(11): e3768. Epub 2008 Nov20.

62. Economou MA, All-Ericsson C, Bykov V, Girnita L, **Bartolazzi A**, Larsson O, Seregard S. (2008). Receptors for the liver synthesized growth factors IGF-1 and HGF/SF in uveal melanoma: intercorrelation and prognostic implications. Acta Ophthalmol. 86 Thesis 4:20-5.

63. Lavra L, Ulivieri A, Rinaldo C, Dominici R, Volante M, Luciani E, **Bartolazzi A***, Frasca F, Soddu S, Sciacchitano S. Galectin-3 is stimulated by gain-of-function p53 mutations and modulates chemoresistance in anaplastic thyroid carcinomas J.Pathol 218:66-75. *(*Corresponding author).*

64. Iacovelli S, Ciuffini L, Lazzari C, Bracaglia G, Rinaldo C, Prodosmo A, **Bartolazzi A,** Sacchi A, Soddu S. (2009). HIPK2 is involved in cell proliferation and its suppression promotes growth arrest independently of DNA damage. Cell Proliferation 42:373-384.

65. Salvi PF, Santanelli F, Ferri M, Dente M, Paolini G, **Bartolazzi A**, Iannicelli E, Ziparo V. (2009). Rectal and gynecologic amputation for a giant eccrine porocarcinoma of the pelvic floor.
Am Surg. 75(3):269-72.

66. Carlesimo M, Fidanza L, Mari E, Feliziani G, Narcisi A, De Marco G, **Bartolazzi A,** Camplone G. (2009). Wells' syndrome with multiorgan involvement mimicking hypereosinophilic syndrome, Case Rep Dermatol. 1:44-48, 2009 .

67. Pranteda G, Osti MF, Cox MC, Cacchi C, Carlesimo M, Grimaldi M, **Bartolazzi A.** (2009). A primary cutaneous Hodgkin's lymphoma. JAAD (in press 2010).

68. Carpi A, Rossi G, Di Coscio GD, Iervasi G, Nicolini A, Carpi F, Mechanick JI, **Bartolazzi A** (2010). Galectin-3 detection on large needle aspiration biopsy improves preoperative selection of thyroid nodules: A prospective cohort study. Ann Med 42:70-78.

Summary of overview articles and chapters in textbooks

Overview article:
Bartolazzi, A. (2000): Improving accuracy of cytology for nodular thyroid lesions. The Lancet 355:1661-1662.

Book's chapters:
1. Conti, EMS., Bartolazzi**, A**., Diotallevi, F., Crespi, M. (1987). Lineamenti di epidemiologia del carcinoma dell'endometrio. XIII Congresso Nazionale di Oncologia (S.I.P.D.T.) - I tumori dell'utero, dell'ovaio e della vulva- Monduzzi Edit. Vol. 1: pp. 461-473

2. **Bartolazzi, A**., Mottolese, M., Prat, M., Vocaturo, A., Vocaturo, G., Atlante, G., Natali, PG. (1990). Potenziale immunodiagnostico degli AcMo AR-3 e B72.3 nel carcinoma dell'endometrio. - Atti della societa' Italiana di Ginecologia ed Ostetricia. - Class International Edition. Brescia

3. Natali, PG., Mottolese, M., Venturo, I., Salzano, M., Bartolazzi**, A**., **Perrone** Donnorso, R., Bigotti, A. (1990). Improvement of cytodiagnosis of solid tumors using a panel of monoclonal antibodies. In: Biological response modifiers. Application in clinical medicine. Indivieri, F., Puppo, F., Sudelletti, M.: Editors, pp. 314-323. Esculapio Bologna

4. Parisi, A., Bartolazzi**, A**., Bonino, C., Camagna, M., De Monte, LB., Lombardi, A., Natali, PG., Paganelli, G., Tarditi, L., Vassarotto, C., Malavasi, F. and Mariani, M. (1992). BIS-1: a novel bispecific monoclonal antibody for CEA-expressing carcinoma radioimmunoscintigraphy and radio immunotherapy. - In: New generation of monoclonal antibodies in diagnosis and therapy. Biotech RIA (Karger ed.)

5. **Bartolazzi, A**. (1999): CD44 ed acido ialuronico nella crescita e progressione neoplastica. *In*: Giavazzi, R., Lollini, PL., Bevilacqua, G. Invasione e metastasi Ed. da Pacini Editore; pp. 57-75.

6. Natali, PG, **Bartolazzi, A**. (1999). : Le molecole di adesione nella fisiopatologia della crescita e della progressione del melanoma cutaneo.. *In*: Giavazzi, R., Lollini, PL., Bevilacqua, G. Invasione e metastasi Ed. da Pacini Editore; pp. 207-222.

7. **Bartolazzi, A** (2004): Thyroid Fine Needle Aspiration Cytology. In Encyclopedia of Endocrinology and Endocrine Diseases. L. Martini Editor, Academic Press San Diego, CA, USA.

8. **Bartolazzi, A** (2009):. Non-small cell lung carcinoma: EGFR gene mutations and response to gefitinib. In Methods of Cancer Diagnosis, Therapy and Prognosis. M.A. Hayat Editor, Springer 1020 pgg.

Other scientific merits
November, 1998: Winner of "Piero Trivella Award" from Associazione Oncologica Pisana for Research Activity.

International Congress Organizer: Highlights of Thyroid Cancer Pathology and Molecular Biology (Invited speakers and Moderators: Bussolati G., Papotti M., LiVolsi V., Rosai J., Sobrinho Simoes M., Volante M, Bartolazzi A., Sciacchitano S., Nikiforov Y., Tallini G., Fusco A., Sntoro M.) Sala della Protomoteca in Campidoglio, February 13th 2009, Rome, Italy.

Credits from the Italian Minister of Public Health, Work and Social Politics for the Clinical and Scientific activities on Thyroid Cancer Rome, February 13th, 2009

Total amount of quotations in scientific publications in the past 10 years, and a list of the ten most frequently-quoted articles

Total citations: 1617 (65 publications total).
Total citations publications 1998-2009: 769 (45 publications total).

1. **Bartolazzi, A**., Peach, R., Aruffo, A., and Stamenkovic, I. (1994). CD44-hyaluronate interaction is implicated in the regulation of tumor growth. J. Exp. Med. 180, pp. 53-66. ***(Times cited 247).***

2. **Bartolazzi, A**., Gasbarri, A., Papotti, M., Bussolati, G., Lucante, T., Khan, A., Inohara, H., Marandino, F., Orlandi, F., Nardi, F., Vecchione, A., Larsson, O., and the Thyroid Cancer Study Group. (2001). Application of an immunodiagnostic method for improving the preoperative diagnosis of nodular thyroid lesions. The Lancet 357: 1644-50. ***(Times cited 181).***

3. 21. Bennett, KL., Modrell, B., Greenfield, B., **Bartolazzi, A**., Stamenkovic, I., Peach, R., Jackson, G., Spring, F. and Aruffo, A. (1995). Regulation of CD44 binding to hyaluronan by glycosylation of variably spliced exons. J. Cell Biol. 131, pp. 1623-1633. ***(Times cited 103).***

4. **Bartolazzi, A**., Nocks, A., Aruffo, A., Spring, F., and Stamenkovic, I. (1996). Glycosylation of CD44 is implicated in CD44-mediated cell adhesion to hyaluronan. J. Cell Biol. 132, pp. 1199-1208. ***(Times cited 101).***

5. Girnita A, Girnita L, del Prete F, **Bartolazzi A**, Larsson O, Axelson M. (2004). Cyclolignans as inhibitors of the insulin-like growth factor-1 receptor and malignant cell growth. Cancer Res. 64:236-42. ***(Times cited 95).***

6. Natali, PG., Nicotra, MR., **Bartolazzi, A**., Cavaliere, R., Bigotti, A. (1993). Integrin expression in cutaneous malignant melanoma: Association of the a3b1 heterodimer with tumor progression. Int. J. Cancer 54, pp. 68-72. ***(Times cited 93).***

7. Gasbarri, A., Martegani, M.P., Del Prete, F., Lucante, T. Natali, P.G. and **Bartolazzi, A.** (1999): Galectin-3 and CD44v6 isoforms in the pre-operative evaluation of thyroid nodules. J. Clin. Oncol.17, pp. 3494-3502. ***(Times cited 80).***

8. Sjolin H., Tomasello E., Mousavi-Jazi M., **Bartolazzi A**., Vivier E., Karre K., and Cerboni C. (2002): Pivotal role of KARAP/DAP12 adaptor molecule in the natural killer cell-mediated resistance to murine cytomegalovirus infection. J. Exp. Med. 195:825-834. ***(Times cited 63).***

9. Kantor, RRS., Giardina, SL., **Bartolazzi, A**., Townsend, AJ., Myers, CE., Cowan, KH., Longo, DL and Natali, PG. (1991). Monoclonal antibodies to glutathione-S-transferase-p. Immunohistochemical analysis of human tissues and cancers. Int. J. Cancer 47, pp.193-201. ***(Times cited 55).***

10. **Bartolazzi, A**., Jackson, D., Bennett, K., Aruffo, A., Dickinson, R., Shields, J., Whittle, N. and Stamenkovic, I. (1995). Regulation of growth and dissemination of a human lymphoma by CD44 splice variants. J. Cell Sci. 108, pp. 1723-1733. ***(Times cited 53).***

Short summary of the findings in the 10 most important articles in the past ten years and the quotations of these articles. (Papers enclosed).

1. Gasbarri, A., Martegani, M.P., Del Prete, F., Lucante, T. Natali, P.G. and **Bartolazzi, A.** (1999): Galectin-3 and CD44v6 isoforms in the pre-operative evaluation of thyroid nodules. J. Clin. Oncol.17, pp. 3494-3502. (Times cited 80).
In this paper the authors showed at phenotypic and molecular level the possibility to use the galectin-3 expression analysis in the preoperative characterization of thyroid lesions. Galectin-3 expression was demonstrated to be restricted to thyroid carcinomas whereas CD44v6 variant, a CD44 isoforms involved in tumor progression and metastatization in different tumor models (i.e. lymphoma, head and neck cancer and pancreatic carcinoma) was demonstrated to be expressed in different benign and malignant thyroid conditions, CD44v6 was expressed in all the proliferative lesions, including hyperplasia, but not in normal resting follicular thyroid cells.

2. **Bartolazzi, A**. (2000): Improving accuracy of cytology for nodular thyroid lesions. The Lancet 355 pp.1661-1662. (Times cited 24).
In this letter the author stressed, for the first time, the necessity to resolve the important clinical problem of the preoperative characterization of thyroid nodules and proposed a strategy for improving the diagnostic performance of conventional thyroid FNA-cytology, opening an interesting clinical discussion in many diagnostic laboratories.

3. Girnita, L., Girnita, A., Brodin, B., Xie, Y., Nilsson, G., Lundeberg, J., Wejde, J., **Bartolazzi, A**., Wiman, C., and Larsson, O. (2000): Increased expression of Insulin-like growth factor-1 receptor (IGF-1R) in malignant cells expressing aberrant p53. Functional impact. Cancer Res. 60:5278-5283. (Times cited 39).

We investigated the functional impact of p53 on insulin-like growth factor I receptor (IGF-IR) expression in malignant cells. Using the BL-41tsp53-2 cell line, a transfectant carrying temperature-sensitive (ts) p53 and endogenous mutant p53 (codon 248), we demonstrated a drastic down-regulation of plasma membrane-bound IGF-IRs on induction of wild-type p53. However, a similar response was obtained by treatment of BL-41tsp53-2 cells expressing mutant ts p53 with a p53 antisense oligonucleotide. Thus, even if the negative effect of wild-type p53 predominates under a competitive condition, these data indicate that mutant p53 may be important for up-regulation of IGF-IR. To further elucidate this issue, three melanoma cell lines (BE, SK-MEL-5, and SK-MEL-28) that over expressed p53 were investigated. The BE cell line has a "hot spot" mutation (codon 248) and expresses only codon 248-mutant p53. SK-MEL-28 has a point mutation at codon 145. SK-MEL-5 cells did not exhibit any p53 mutations, but the absence of p21Waf1 expression suggested functionally aberrant p53. Our data suggest that interaction with Mdm-2 may underlie p53 inactivation in these cells. Using p53 antisense oligonucleotides, we demonstrated a substantial down-regulation of cell surface expression of IGF-IR proteins in all melanoma cell lines after 24 h. This was paralleled by decreased tyrosine phosphorylation of IGF-IR and growth arrest, and, subsequently, massive cell death was observed (this was also seen in BL-41tsp53-2 cells with mutant conformation of ts p53). Taken together, our results suggest that up-regulation of IGF-IR as a result of expression of aberrant p53 may be important for the growth and survival of malignant cells.

4. **Bartolazzi, A**., Gasbarri, A., Papotti, M., Bussolati, G., Lucante, T., Khan, A., Inohara, H., Marandino, F., Orlandi, F., Nardi, F., Vecchione, A., Larsson, O., and the Thyroid Cancer Study Group. (2001). Application of an immunodiagnostic method for improving the preoperative diagnosis of nodular thyroid lesions. The Lancet 357: 1644-50. (Times cited 181).

This is the first important International multicentre study, proposed and co-ordinated by the applicant, in which the galectin-3 expression analysis was performed retrospectively on 1006 well-characterized histological thyroid samples. This study was performed by the applicant at Karolinska Hospital, Stockholm, Sweden and involved two Italians Thyroid Centers in Rome and Turin, a Thyroid Institute in Osaka (Japan) and the University of Massachusetts, Boston, USA. The statistical analysis demonstrated that galectin-3 test method had a sensitivity and specificity of 94% and 98% respectively, PPV 98%, NPV 94% and a diagnostic accuracy of 96%. The rationale and the potential application of galectin-3 expression analysis in the preoperative evaluation of thyroid nodules were finally demonstrated.

5. Sjolin H., Tomasello E., Mousavi-Jazi M., **Bartolazzi A**., Vivier E., Karre K., and Cerboni C. (2002): Pivotal role of KARAP/DAP12 adaptor molecule in the natural killer cell-mediated resistance to murine cytomegalovirus infection. J. Exp. Med. 195:825-834. (Times cited 63).

Natural killer (NK) cells are major contributors to early defense against infections. Their effector functions are controlled by a balance between activating and inhibiting signals. To date, however, the involvement of NK cell activating receptors and signaling pathways in the defense against pathogens has not been extensively investigated. In mice, several NK cell activating receptors are co expressed with and function through the immunoreceptor tyrosine-based activation motif (ITAM)-bearing molecule KARAP/DAP12. Here, we have analyzed the role of KARAP/DAP12 in the early antiviral response to murine cytomegalovirus (MCMV). In KARAP/DAP12 mutant mice bearing a nonfunctional ITAM, we found a considerable increase in viral titers in the spleen (30-40-fold) and in the liver (2-5-fold). These effects were attributed to NK cells. The formation of hepatic inflammatory foci appeared similar in wild type and mutant mice, but the latter more frequently developed severe hepatitis with large areas of focal necrosis. Moreover, the percentage of hepatic NK cells producing interferon gamma was reduced by 56 +/- 22% in the absence of a functional KARAP/DAP12. This is the first study that shows a crucial role for a particular activating signaling pathway, in this case the one induced through KARAP/DAP12, in the NK cell-mediated resistance to an infection. Our results are discussed in relation to recent reports demonstrating that innate resistance to MCMV requires the presence of NK cells expressing the KARAP/DAP12-associated receptor Ly49H.

6. Girnita A, Girnita L, del Prete F, **Bartolazzi A**, Larsson O, Axelson M. (2004). Cyclolignans as inhibitors of the insulin-like growth factor-1 receptor and malignant cell growth. Cancer Res. 64:236-42. (Times cited 95).

The insulin-like growth factor-1 receptor (IGF-1R) plays a pivotal role in transformation, growth, and survival of malignant cells, and has emerged as a general and promising target for cancer treatment. However, no fully selective IGF-1R inhibitors have thus far been found. This is explained by the fact that IGF-1R is highly homologous to the insulin receptor, co-inhibition of which may cause diabetic response. The receptors are both tyrosine kinases, and their ATP binding sites are identical, implying that ATP inhibitors cannot discriminate between them. Therefore, the current strategy has been to identify compounds interfering with receptor autophosphorylation at the substrate level. In this study we investigated the effects of cyclolignans and related molecules on IGF-1R activity. We report that certain cyclolignans are potent and selective inhibitors of tyrosine phosphorylation of the IGF-1R. Of particular interest was picropodophyllin (PPP), which is almost nontoxic (LD (50) >500 mg/kg in rodents). PPP efficiently blocked IGF-1R activity, reduced pAkt and phosphorylated extracellular signal regulated kinase 1 and 2 (pErk1/2), induced apoptosis in cultured IGF-1R-positive tumor cells, and caused complete tumor regression in xenografted and allografted mice. PPP did not affect the insulin receptor or compete with ATP in an in vitro kinase assay, suggesting that it may inhibit IGF-1R

autophosphorylation at the substrate level. This is also in agreement with our molecular model of how the cyclolignans may act on the IGF-1R kinase. Our results open the possibility to use PPP or related compounds with inhibitory effects on IGF-1R as lead compounds in development of anticancer agents.

7. Papotti M, Rodriguez J, Pompa RD, **Bartolazzi A**, Rosai J. (2005). Galectin-3 and HBME-1 expression in well-differentiated thyroid tumors with follicular architecture of uncertain malignant potential. Mod Pathol. 18:541-6. (Times cited 25).

Well-differentiated encapsulated tumors of the thyroid gland with a follicular architecture may cause diagnostic difficulties. Questionable vascular or capsular penetration may raise the possibility of a follicular carcinoma, while focal nuclear clearing and grooves may suggest a diagnosis of papillary carcinoma. A proposal has recently been made to designate cases showing suggestive but not conclusive morphological evidence of malignancy along these lines as well-differentiated or follicular tumors of uncertain malignant potential. The aim of the present study was to investigate the expression and diagnostic role in well-differentiated or follicular tumors of uncertain malignant potential of Galectin-3 and HBME-1, two malignancy-related markers. A total of 21 tumors fulfilling the criteria of well-differentiated or follicular tumors of uncertain malignant potential were collected from two institutions, including eight cases with questionable vascular and/or capsular invasion and 13 cases with some degree of nuclear changes in the form of clearing, grooves, and/or pseudo inclusions. Tumors in the first group expressed HBME-1 and Galectin-3 focally (less than 25% of tumor cells) in 5/8 and 3/8 cases, respectively, with 62.5% of cases reacting for at least one marker. Cases in the second category expressed HBME-1 and Galectin-3 in 9/13 and 10/13 cases, respectively, with 92.3% of cases having at least one marker expressed. These findings indicate that HBME-1 and Galectin-3 are heterogeneously distributed in these borderline tumors, but that a strong and diffuse expression of HBME-1 and to a lower extent of Galectin-3 was preferentially observed in the group characterized by nuclear changes which were similar but less developed than those of conventional papillary carcinoma. The relationship found between the markers investigated and these nuclear changes suggest that the tumors containing them are pathogenetically linked to papillary carcinomas.

8. B. Cecchinelli, L. Lavra, C. Rinaldo, S. Iacovelli, A. Gurtner, A. Gasbarri, A. Ulivieri, F. del Prete, M. Trovato, G Piaggio, **A. Bartolazzi,*** S. Soddu, & S. Sciacchitano. (2006). Repression of the antiapoptotic molecule Galectin-3 by homeodomain-interactin protein kinase 2-activated p53 is required for p53-induced apoptosis. Mol Cell Biol 26:4746-57. *(* Corresponding author*).
(Times cited 14).

Here we show that p53-induced apoptosis is associated with transcriptional repression of Gal-3. Previously, it has been reported that phosphorylation of p53 at Ser46 is important for transcription of proapoptotic genes and induction of apoptosis and that homeodomain-interacting protein kinase 2 (HIPK2) is specifically involved in these functions. We show that HIPK2 cooperates with p53 in Gal-3 repression and that this cooperation requires HIPK2 kinase activity. Gene-specific RNA interference demonstrates that HIPK2 is essential for repression of Gal-3 upon induction of p53-dependent apoptosis. Furthermore, expression of a nonrepressible Gal-3 prevents HIPK2- and p53-induced apoptosis. These results reveal a new apoptotic pathway induced by HIPK2-activated p53 and requiring repression of the antiapoptotic factor Gal-3.

9. **Bartolazzi A**, Orlandi F, Saggiorato E, Volante M, Arecco F, Rossetto R, Palestini N, Ghigo E, Papotti M, Bussolati G, Martegani MP, Pantellini F, Carpi A, Giovagnoli MR, Monti S, Toscano V, Sciacchitano S, Pennelli GM, Mian C, Pelizzo MR, Rugge M, Troncone G, Palombini L, Chiappetta G, Botti G, Vecchione A, Bellocco R; Italian Thyroid Cancer Study Group (ITCSG). (2008). Galectin-3-expression analysis in the surgical selection of follicular thyroid nodules with indeterminate fine-needle aspiration cytology: a prospective multicentre study. The Lancet Oncol. 9(6): 543-9. Epub 2008 May 19. (Times cited 4).

This is the prospective multicentre study, in which galectin-3 test method was finally validated for the clinical use. This study, proposed and co-ordinate by the applicant was carried out at National level and involved 11 Italian Thyroid Institution and 465 patients bearing thyroid proliferations classified as Thy3 at conventional cytology (according to the British Thyroid Association) and than referred to surgery. The galectin-3 test-method was applied to all the lesions on FNA-derived cellblocks, before surgery. Histological diagnosis was considered as the gold standard. A central blind review of histological diagnosis was performed by two independent pathologists (J. Rosai and V. LiVolsi). The statistical analysis demonstrated a sensitivity and specificity of 78% and 93% respectively, PPV 82%, NPV 91% and a diagnostic accuracty of 88%. A diagnostic kit for galectin-3 test method becomes commercially available.

10. **Bartolazzi A**, D'Alessandria C, Parisella MG, Signore A, Del Prete F, Lavra L, Braesch-Andersen S, Massari R, Trotta C, Soluri A, Sciacchitano S, Scopinaro F. (2008). Thyroid cancer imaging in vivo by targeting the anti-apoptotic molecule galectin-3. PLoS ONE. 3(11): e3768. Epub 2008 Nov20. (Times cited n.a.).

In this paper, A.B. proposed a new idea for thyroid cancer imaging in vivo, by using a galectin-3 based radio-immunoscintigraphy. Conventional thyroid scintigraphy with iodine, does not provide biological information on thyroid nodules but only functional information related to the iodide uptake (cold or hot nodules). By using galectin-3 positive thyroid cancer xenografts in nude mice, we demonstrated that a ^{99}Tc radio labeled mAb to galectin-3 provides in vivo imaging of thyroid cancer when injected intravenously in xenografted mice. The galectin-3 based radio-immunoscintigraphy provides biological information about thyroid nodules and represents a useful guide to correctly identify those thyroid proliferations that should be cytologically evaluated and/or promptly excised. The possibility to apply this method for imaging and treatment of other galectin-3 expressing

tumors seems also realistic. If the proposed diagnostic approach will prove successful a targeted radio-ablation of galectin-3 expressing tumors might also be explored by using galectin-3 specific mAbs conjugated to different radio compounds (i.e. ^{186}Re, ^{177}Lu or ^{90}Y, ^{64}Cu, ^{67}Cu). (Patented).

Scientific collaboration and external research grants

External grants for Research

Present Research Group:

Armando Bartolazzi, MD
Salvatore Sciacchitano MD,
Luca Lavra MD,
Alessandra Ulivieri
Enzo D'Ambrosio, MD-student.
Emidio Luciani Techn.
Fabrizio Del Prete, Techn.
Flavia Melotti MD Pathologist
Maria Giubettini MD Pathologist
Lucia Spath PhD

Grants and awards:

Recipient of grants from National and International Research Agencies

TOTAL AMOUNT IN EURO (1995-2009)……. 863.000

Six National competitions as *project leader* in the past five years four of which founded by Italian Cancerfonden (AIRC) (with International peer review) 2005-2008, one from Compagnia di San Paolo (four years grant 2003-2006); one out of five failed (2004).

One National competition as *joint applicant* in the past five years founded by the Italian Ministry of Public Health (2004)

National and International research projects:

i) **International Multicentre Study** entitled: ***Galectin-3 and CD44v6 isoforms in the preoperative evaluation of thyroid nodules*****,** in which a new immuno-diagnostic method for thyroid nodules has been validated (1999-2001). Participants: (Italy, USA, Japan, Sweden) (A.B. was the proponent and coordinator, see The Lancet 357: 1644-50, 2001).

ii) ***Structural and functional characterization of SYT and SSX proteins, and SYT-SSX fusion protein in synovial sarcoma and other tumor malignancies. (Since 1999)***
Collaboration with Prof. Olle Larsson, Cellular and Molecular Tumor Pathology, Cancer Center Karolinska CCK R8:04, Karolinska Hospital, Stockholm, Sweden 1999-2001 (see Cancer Res. 62:3861-3867; Modern Pathology 15:679-685) .

iii) **National (Italian) Prospective Multicentre Study entitled: From the bench to the bedside: galectin-3 Thyrotest for improving the diagnostic accuracy of conventional thyroid FNA cytology.**
Supported from Compagnia di San Paolo (2002-2006).
The aims of this translational study were: validation for the clinical use of a new diagnostic test-method for the preoperative characterization of thyroid nodules and definition of the clinical and therapeutic guidelines for patients bearing thyroid nodules.
15 Italian University Hospitals and more then 60 Medical Doctors, Biologists and Scientists were involved (A.B. played as proponent and study coordinator, see The Lancet Oncology 9(6): 543-9. Epub 2008 May 19th).

iv) **Development of radiolabeled galectin-3 mAbs for in vivo imaging of thyroid tumors (since January 2005).** Collaboration with Prof. Francesco Scopinaro Dept. of Nuclear Medicine University La Sapienza, Rome, and Prof. Alessandro Soluri, Dept of Physic at the National Research Council, Rome. (A. B. proponent and study coordinator, see PLoS ONE. 3(11):e3768. Epub 2008 Nov20th.).

v) Collaboration with University of Rome Tor Vergata Department of Bio-Engeneering (prof. Arnaldo D'Amico, Prof. Giorgio Pennazza, Prof. Corrado Di Natale) **Application of sensor microarrays in the clinical practice. Lung Carcinoma and Melanoma diagnosis.** (A.B. is responsible of the biological and medical part of this study) January 2006- running project).

vi) **Galectin-3 mediated molecular interactions in NSCLC (since January 2008).** Collaboration with Prof. Rolf Lewensohn KBC Karolinska Hospital Solna.
The aberrant expression of galectin-3 in tumor cells has been demonstrated to be critical for the resistance to chemotherapy in several tumor models. Experiments of galectin-3 transfection in thyroid and breast carcinoma cell lines demonstrated that cells expressing galectin-3 are less sensitive to specific chemotherapy. Our preliminary results on NSCLCs tissue microarrays, obtained in collaboration with Rolf Lewensohn 's group at KBC, Karolinska Institute, Stockholm, Sweden, demonstrate that about 50% of Lung adenocarcinomas and squamous cell carcinomas express this molecule.
Considering the fact that no efficient chemotherapy treatment for NSCLCs is currently available, we think that this tumor model represents a good target for studying the biological effects mediated by galectin-3. In this project that will be articulated in different tasks we want to investigate the biological significance of galectin-3 expression in these lesions by using *in vivo* and *in vitro* experimental models with the aim to demonstrate the potential prognostic value of this marker and eventually a biological rationale for a molecular targeted therapy.
(A.B. is the proponent and responsible of this specific study) January 2008- running project).

vii) **St. Andrea Melanoma Working Group (SAMWG).** Since January 2008 A.B. created a multidisciplinary working group on melanoma at St. Andrea Hospital, in which basic scientists, oncologists, dermatologists and pathologists interact each other.
Lab meetings, seminars and clinical rounds are organized twice for month at the Department of Pathology. Meetings and seminars are open to the Medical students, residential students and Ph.D. students. Potential research projects, thesis and Ph.D programs are considered, discussed and assigned after a multidisciplinary evaluation).

Invited Faculty Opponent for PhD Dissertation

Daria Cosaceanu: The use of IGF-1R Inhibitors in cancer therapy- A potential approach for sensitizing tumor cells to ionizing radiation. Friday October 6th 2006 Karolinska Institute, Stockholm, Sweden.

Postgraduate teaching and Specialist training

2001-present: -***Adjunct Professor of Surgical Pathology for the Residential Course*** in Surgical and Anatomic Pathology, St. Andrea University Hospital, University La Sapienza, Rome, Italy (full year).

2001-present: -***Adjunct Professor of Surgical Pathology for the Residential Course*** in Dermatopathology, St.Andrea University Hospital, University La Sapienza, Rome Italy (full year).

2002-2006: - ***Adjunct Professor of Surgical Pathology for Medical Students*** (Pathology of the Endocrine diseases). St. Andrea University Hospital, University La Sapienza, Rome, Italy (more then 80 students/year).

2002-2006: - ***Adjunct Professor of Surgical Pathology for Medical Students*** (Pathology of the Skin and Plastic Surgery). St. Andrea University Hospital, University La Sapienza, Rome Italy (more then 80 students/year).

- Referee duties for research applications at an international level

Since year 2000: Member of the Commission of experts for evaluation of EU grants applications (Ref: EE1998 1B02438) (on call)

- Referee duties for research applications at a national level.

Occasional role as referee for the Italian Association for Cancer Research fellowships

- Work as an external opponent:

Daria Cosaceanu: The use of IGF-1R Inhibitors in cancer therapy- A potential approach for sensitizing tumor cells to ionizing radiation . Friday October 6th 2006 Karolinska Institute, Stockholm, Sweden.

Collaboration with the Community

Participation in pharmaceutical evaluation / recommendations, pharmaceutical committee work.
1988: Participation in several commissioned studies for characterization of mAbs to be used in clinical practice (i.e. immunohistochemistry, immunoscintigraphy etc...). (Contracts Legge 46, NIH-Industry, Sorin Biomedica).

Field visits and information to non-professionals

November, 8th 1998: National day Against Cancer (organized by the Italian Association for Cancer Research). All the Italian Institutions for Cancer Research were opened to the public. The applicant was selected as Italian researcher to present his research program in a half day meeting.

Mass-Media citations, Articles in National, International newspapers and on-line, in which the applicant's research achievements are mentioned.

1. Strategia in quattro fasi per battere il cancro. Tiroide.
Corriere della Sera (Italian newspaper) May 31th, 2001

2. Tiroide: E' Italiana una nuova tecnica di diagnosi. Noduli svelati. ***Corriere Salute*** (*Suppl. Corriere della Sera),* October 21 st 2001.

3. Nytt test hittar sköldkörtelcancer.
Dagens Medicine., Tisdag 12 Juni 2001, (Sweden)

4. New test may reduce Unnecessary surgeries on noncancerous thyroid tissues. Top stories of July , July 23th , 2001. ***American Cancer Society web-site.***

5.Tiroide: La verita' sul nodulo. (Info/salute 2) ***Io Donna*** (*Suppl. Corriere della Sera*) December 1st, 2001.

6. Cancro alla tiroide, basta un test. **Il Tempo** (Italian newspaper) February, 12th,2002.

7. Tumori alla Tiroide, un marker li "vede" prima. **Repubblica (inserto salute)** (Italian newspaper) March 7th,, 2002

8. Innovativa diagnosi per le lesioni follicolari. Due Guardie per la Tiroide. **TEMPO MEDICO** n.713, 27 Settembre, 2001

9. **TG3-RAI, Italian Television, Interview, February 2002.**

Galectin-3 thyrotest for the preoperative diagnosis of thyroid cancer

10. Un test per scoprire il tumore alla tiroide. **Il Giornale di Napoli** (Italian newspaper) December 11th, 2002

11. Noduli alla tiroide: sempre piu' concreta la possibilita' di una diagnosi precoce non invasiva. **Salute Europa. News,** 19-11-2004

12. **RAI1, UnoMattina. Italian Television, Interview,** The electronic nose in oncology. 18 September, 2007.

13. Scoperta Italiana per la diagnosi del tumore alla tiroide
Salute Europa News 11/9/2008.

14. Scoperta Italiana per la diagnosi del tumore alla tiroide
Italia Salute.it 18/10/2008.

15. Tiroide, un test per evitare interventi superflui.
Corriere della Sera – Sportello Cancro 19 May, 2008.

16. No more unnecessary surgery for thyroid nodules
AllinfoDir Health Articles and News May 19th, 2008.

17. Gene test may improve thyroid cancer diagnosis.
Medical News May 19th, 2008.

18. Test could improve diagnosis of thyroid nodules.
Modern Medicine May 20th , 2008.

19. New thyroid nodule test could significantly reduce unnecessary surgeries. **eCancer.tv** May 18th, 2008.

20. Analisis de presencia de galectina-3 puede eliminar ciertas intervenciones. **Yahoo Mexico Noticias.** Mayo 18th, 2008.

21. Galectin-3 test could decrease the number of unnecessary surgical procedures. **EUREKALERT** May 18th, 2008.

22. Menzionato come autore e group leader di uno dei migliori 12 progetti finanziati dall'AIRC nel 2008 i cui risultati sono stati pubblicati su riviste Internazionali con alto fattore di impatto. **Corriere della Sera e Repubblica,** 26 Luglio 2009.

PORTAFOGLIO CLINICO
Approved by the Board of Research, del KAROLINSKA INSTITUTE January 1st 2008

ARMANDO BARTOLAZZI M.D., Ph.D.

Ottobre 2009

COMPETENZE CLINICHE E FORMAZIONE

Corsi di Laurea, Specializzazioni e perfezionamento

- 1987: Laurea in Medicina e Chirurgia. I° Facoltà di Medicina, Università "La Sapienza", Roma, (summa cum laude).

-1987: Abilitazione alla Professione Medica, Università "La Sapienza", Roma,

- Internship in Internal Medicine, (1987-1988), I° Clinica Medica
Policlinico Umberto I, University "La Sapienza", Rome, Italy.

-1988: General Doctor USL/Roma 3, June1988-July1988, with full responsibility for more than 100 patients.

- **1991: Diploma di Specializzazione in Oncologia Clinica** (1987-1991) (*summa cum laude*). University "La Sapienza" of Rome, Italy.

- **1999: Diploma di Specializzazione in Anatomia ed Istologia Patologica** (1994-1999), (*summa cum laude).* University "La Sapienza" of Rome, Italy.

Attività Clinica come Specialista

Dal 1991: A.B. ha esercitato attività Specialistica nel settore diagnostico e nel follow up di pazienti oncologici (Outpatient care).

Dal Dicembre 1993 al Novembre 2001: ***Dirigente Medico di I° Livello*** **presso l'Istituto Tumori Regina Elena di Roma** (40.000 preparati istologici/anno, 9000 diagnosis intraoperaorie/anno ripartite per 5 patologi in servizio presso il Dipartimento (Primario Prof. Aldo Bigotti). Due anni di esperienza di lavoro sono stati maturati presso il Servizio di Citologia dello stesso Istituto. (Inpatient and outpatient care)

Dal Gennaio 1997 al Marzo 99: ***patologo di riferimento*** per il gruppo di studio multidisciplinare (clinico e sperimentale) per il Carcinoma Mammario presso lo stesso Istituto (600 casi/anno). (Inpatient and outpatient care)

Dal Gennaio 1997 al Marzo 99: ***patologo di riferimento*** per il gruppo di studio multidisciplinare (clinico e sperimentale) per il Cancro del Colon presso lo stesso Istituto (180 casi/anno). (Inpatient and outpatient care)

Dal Gennaio 1997 al Marzo 99: ***patologo di riferimento*** per il gruppo di studio multidisciplinare (clinico e sperimentale) per il Melanoma presso lo stesso Istituto (110 casi/anno). (Inpatient and outpatient care).

Dal Gennaio 1997 al Marzo 99: ***patologo di riferimento*** per il servizio autoptico presso lo stesso Istituto.

Anni 1996-1998: ***Consulente patologo*** presso l'Ospedale Regionale S.S. Salvatore, USL RM/25 Roma. (Inpatient and outpatient care); 5155 diagnosi istologiche effettuate personalmente.

2001: ***Consulente patologo (part-time)*** per il melanoma presso il Dipartimento di Oncologia ed Antomia Patologica del Karolinska Hospital, Stockholm, Sweden.

Dal Novembre 2001- ad oggi: Dirigente Primo Livello

Sant' Andrea University Hospital, II° Faculty of Medicine, University La Sapienza, Rome, Italy (12.000 casi Istologici/anno) con conferimento di incarico di alta specializzazione .

Experience of on-call services
16 anni di esperienza nelle diagnosi intraoperatorie
Istituto Tumori Regina Elena di Roma e Sant' Andrea University Hospital, Rome

Competenze Cliniche Speciali /Profilo professionale
- Patologia Tumorale (particolare esperienza sub-specialistica nei tumori del distretto testa-collo inclusa la tiroidee, per la quale possiede Referenze Internazionali, e nei tumori cutanei incluso i melanomi e lesioni pigmentate in generale).

-Diagnosi in Oncologia (Diagnosi Istopatologiche e Cliniche, Immunodiagnosi, Diagnostica Molecolare).

-Diagnosi istologiche intraoperatorie.

- Diagnosi autoptiche.

-Gestione clinica dei pazienti oncologici durante la fase diagnostica e di follow-up

- Diagnostica Istopatologica comparata (veterinaria)

Attività di ricerca traslazionale nel settore oncologico ed istopatologico: 18 anni di esperienza nella produzione, caratterizzazione ed applicazione clinica di anticorpi monoclonali specifici per antigeni tumore associati. Alcuni di questi reagenti sono correntemente in uso nei laboratori di ricerca e di Istopatologia di Istituzioni Nazionali ed Internazionali che operano nel settore oncologico e vengono applicati routinariamente per migliorare la diagnosi istopatologica e citopatologica dei tumori umani.

- Sviluppo e validazione clinica di kit diagnostici (vedi *tireotest alla galectina-3* per la caratterizzazione properatoria dei noduli tiroidei e per il miglioramento della scintigrafia tiroidea – brevettato) .

- Messa a punto di metodiche per la diagnosi molecolare dei tumori umani (vedi specifiche referenze sulla traslocazione SYT-SSX nei sarcomi sinoviali, collaborazione con il Karolinska Institute di Stoccolma). *(Portafoglio scientifico)*.
Microarrays tessutali per la diagnostica istopatologica e molecolare dei tumori solidi (vedi progetto sui carcinomi del polmone in collaborazine con il Karolinska Institute di Stoccolma). *(Portafoglio scientifico)*.

- 20 anni di esperienza nello svolgimento di studi struttura-funzione su molecole critiche per lo sviluppo del cancro, sui processi adesivi cellula-cellula e cellula-matrice extracellulare (*vedi specifiche referenze bibliografiche incluse nel portafoglio scientifico*).

- Esperienza ventennale competitiva nell'allestimento di modelli sperimentali in vitro ed in vivo (tumor xenografts) di tumori umani, per testare gli effetti di nuovi farmaci, dell' mRNA interferenza specifica, e del silenziamento di geni target *(Vedi dettagli nella pubblicistica riportata nel portafoglio scientifico)*.

Attivita di sviluppo Clinico

- **Sviluppo ed implementazione di nuove strategie diagnostiche e terapeutiche nel settore oncologico**

A.B. ha maturato oltre 20 anni di esperienza nella produzione e caratterizzazione di anticorpi monoclonali per uso diagnostico e sperimentale al fine di migliorare le tecniche diagnostiche istologiche e citologiche convenzionali.
Come riportato in dettaglio nel portafoglio scientifico, alcuni di questi reagenti sono attualmente utilizzati in fase diagnostica in molti Centri Oncologici, incluso l'Istituto Tumori Regina Elena di Roma.

Alcuni esempi specifici:

i) **Studio Internazionale Multicentrico dal titolo: Galectin-3 and CD44v6 isoforms in the preoperative evaluation of thyroid nodules** nel quale il test diagnostico per la caratterizzazione preoperatoria dei noduli tiroidei, basato sulla determinazione dell'espressione di galectina-3 su materiale bioptico, è stato proposto e validato retrospettivamente. (1999-2001). Nazioni Participanti: (Italy, USA, Japan, Sweden) (A.B. è stato promotore e coordinatore dello studio. Vedi: A. Bartolazzi et al. The Lancet 357: 1644-50, 2001).

ii) **Studio Nazionale Multicentrico prospettico dal titolo: From the bench to the bed side: galectin-3 Thyrotest for improving the diagnostic accuracy of conventional thyroid FNA cytology**. Finanziato dalla Compagnia di San Paolo con 207.000,00 euro (2002-2006). In questo studio traslazionale il metodo test alla galectina-3 è stato validato per l'uso clinico su materiale citologico ottenuto per ago-aspirazione di noduli tiroidei. Le linee guida per la gestione dei pazienti con noduli tiroidei edite nel 2009 includono il test alla galectina-3.

15 Centri Italiani partecipanti ed oltre 60 medici, biologi, ricercatori di base e biostatistici coinvolti nello studio. (A.B. è stato proponente e coordinatore Nazionale dello Studio. Vedi: A. Bartolazzi et al. The Lancet Oncology 9(6):543-9. Epub 2008 May 19th).

iii) **Development of radiolabeled galectin-3 mAbs for in vivo imaging of thyroid tumors (since January 2005).** Progetto nel quale è stata messa a punto e brevettata una nuova tecnica di *tumor imaging in vivo* basata sull'immunotargeting della molecola galectina-3. Collaborazione con il Prof. Francesco Scopinaro Dept. of Nuclear Medicine, University La Sapienza, Rome, e con il Prof. Alessandro Soluri, Dept. of Physic at the National Research Council, Rome. (A. B. proponente e cordinatore dello studio. Vedi: PLoS ONE. 3(11):e3768. Epub 2008 Nov20th.).

iv) dall'applicante: **Application of sensor microarrays in the clinical practice. Lung Carcinoma and Melanoma diagnosis.** Progetto nel quale è stato messo a punto un naso elettronico per il rilevamento dei composti volatili emessi dai tumori umani. Il metodo apre nuove frontiere nell'ambito delle tecniche diagnostiche non invasive. Collaborazione con il Prof. Arnaldo D'Amico, II° Università di Roma Tor Vergata, Department of Bio-Engeneering. (A.B. è responsabile della sezione biologica e medica del progetto. Dal Gennaio 2006, *running project*). *(Intervista RAI-1 unomattina 2009).*

v) dall'applicante: **Galectin-3 mediated molecular interactions in NSCLC (since January 2008).** L'espressione aberrante della galectina-3 in alcuni tipi tumorali svolge un ruolo chiave nei meccanismi di resistenza all'apoptosi e quindi alla chemioterapia. Esperimenti specifici di transfezione di galectina-3 in cellule tumorali di tiroide e mammella dimostrano che i tumori galectina-3 positivi sono più resistenti ai farmaci chemioterapici. Nostri risultati preliminari ottenuti su oltre 600 casi di tumori polmonari del tipo NSCLC (su microarrays tessutali), dimostrano che circa il 50% di carcinomi polmonari squamosi ed adenocarcinomi esprimono galectina-3. In considerazione del fatto che a tutt'oggi non esiste un efficace trattamento chemioterapico per queste neoplasie, stiamo tentando di modulare l'espressione di galectina-3 per verificare gli effetti biologici che ne derivano, in particolare nella regolazione dell'apoptosi e della chemiosensibilità ai farmaci. Sono stati allestiti a questo fine modelli sperimentali *in vitro* ed *in vivo* di carcinomi polmonari non microcitomi da utilizzare come substrati per esperimenti di transfezione, mRNA interferenza e chemiosensibilità. Lo scopo finale è quello di dimostrare il valore prognostico del marcatore galectina-.3 ed eventualmente impostare protocolli di *molecular targeted therapy* in associazione con terapie convenzionali.
Progetto di patologia molecolare e proteomica in collaborazione con il Prof. Rolf Lewensohn KBC Karolinska Hospital, Solna.
(A,B. è proponente e responsabile dello studio) Gennaio 2008- *running project*).

- **Sviluppo di programmi clinico-terapeutici.**

1997-1999. A.B. ha contribuito a definire i protocolli clinici-terapeutici per il carcinoma della mammella presso l'Istituto Tumori Regina Elena di Roma.

1997-1999. A.B. ha contribuito a definire i protocolli clinici-terapeutici per il carcinoma del Colon Retto presso l'Istituto Tumori Regina Elena di Roma.

1997-1999. A.B. ha contribuito a definire i protocolli clinici-terapeutici per il Melanoma, presso l'Istituto Tumori Regina Elena di Roma

2001-2006: A.B. ha contribuito a definire i protocolli clinici-terapeutici per la diagnosi preoperatoria del nodulo tiroideo a livello Nazionale ed Internazionale, ed ha introdotto il test alla galectina-3 nella pratica clinica *(vedi specifici lavori sul Lancet 2001 e Lancet Oncology 2008 nel portafoglio scientifico).*

2003- oggi: A.B. ha contribuito a definire i protocolli diagnostici e le schede multiparametriche biologiche per il melanoma presso l' Ospedale Sant' Andrea , Università La Sapienza – Rome).

- **Attività di supervisore e co-supervisore clinico per i corsi specialistici dal 2002**

- **Participation in pharmaceutical recommendations, pharmaceutical committee work.**

1988-1991

A.B. ha partecipato a diversi studi commissionati dal Ministero della Salute-Industria per la caratterizzazione e validazione di anticorpi monoclonali di uso diagnostico (immunoistochimica, immunoscintigrafia etc.) presso l'Istituto Tumori Regina Elena di Roma, Centro Ricerche Sperimentali. Contratto Legge 46, NIH-Industry, Sorin Biomedica).

Idoneità Primariali Nazionali ed Internazionali

1) ***Idoneità alla carica di Direttore di Struttura Complessa*** in Istologia ed Anatomia Patologica Presso ***L'Istituto Tumori di Genova, IST*** *(1 Giugno 2004***,** Prof. Juan Rosai in commissione di valutazione).

2) ***Idonietà internazionale alla copertura di un posto di Lecturer/full professor in Anatomia Patologica ed Istologia*** **presso il** ***Karolinska Institute di Stoccolma,*** Svezia 23 Gennaio,2001 (3° Classificato concorso Internazionale con 7 candidati nel rank finale – unico candidato Italiano) – vedi report della Commissione di valutazione Prof. V.P, Collins).

3) ***Idoneità Internazionale alla posizione di Project leader in Biomedicine*** **presso il** ***Karolinska Insitute di Stoccolma,*** Svezia (27 Maggio, 2002)
(IV° classificato concorso Internazionale con 33 candidati, - unico candidato Italiano, vedi vedi report della Commissione di valutazione Prof. O.P Ottersen).

4) ***Idoneita Internazionale per la selezione di un posto di Professore Ordinario di Anatomia ed Istologia Patologica presso*** **il** ***Karolinska Institute and Karolinska University di Stoccolma, Svezia***
(III° idoneo su 7 candidati selezionati per la valutazione finale. - unico candidato Italiano.
Novembre 2009)

PORTAFOGLIO PER LA VALUTAZIONE DELLE CAPACITA' GESTIONALI, LEADERSHIP, SVILUPPO E RELAZIONI NEL POSTO DI LAVORO.

Approved by the Board of Research, January 1st 2008

ARMANDO BARTOLAZZI M.D., Ph.D.

July 2009

CAPACITA' GESTIONALI E POSIZIONI DI LEADERSHIP

1. **DAL 1994**: **Responsabile di un gruppo di ricerca sul Cancro con finanziamenti indipendenti** e completa autonomia organizzativa e gestionale. Il gruppo di lavoro di circa 10 persone tra tecnici e laureati in biologia e medicina.
N.C.I- Regina Elena of Rome and St. Andrea University Hospital, Rome, Italy. (*Vedi portafoglio scientifico per i dettagli e per i finanziamenti ottenuti).*

2. 1999-2001- *Proponente, organizzatore e coordinatore di uno studio Internazionale Multicentrico* che ha coinvolto U.S.A, Giappone, Italia e Svezia , per la diagnosi preoperatoria dei Carcinomi tiroidei. (vedi *The Lancet 357: 1644-50, 2001 e portafoglio scientifico per i dettagli).*

3. 2002-2008 - *Proponente, organizzatore e coordinatore di uno studio Nazionale Multicentrico* Prospettico che ha coinvolto 12 Centri Italiani ed oltre 60 operatori Sanitari e Ricercatori, per la validazione clinica del test alla galectina-3 e la definizione delle linee guida per la gestione del nodulo tiroideo. (vedi *The Lancet Oncology 9(6):543-9. Epub 2008 May 19th e portafoglio scientifico per i dettagli).*

4. **1998-2001, Membro Eletto del Comitato Tecnico Scientifico dell'Istituto Tumori Regina Elena di Roma**

5. Dal Gennaio 2008 l'applicante è promotore del **Multidisciplinary Working Group on Melanoma at St. Andrea Hospital, ROMA,** gruppo di studio multidisciplinare nel quale ricercatori di base, oncologi, patologi e dermatologi interagiscono per il miglioramento della diagnosi e cura del melanoma cutaneo.
Organizzazione di meetings su base bi-settimanale, attività di ricerca di base, follow up dei pazienti, tesi di specializzazione e seminari interni ed esterni.
FONDATORE E PROMOTORE DEL GRUPPO DI STUDIO.

Organizzatore di eventi Scientifici Internazionali

Organizzatore di un Convegno Internazionale in Campidoglio, ROMA: Con il Patrocinio del Comune di Roma, del Ministero della Salute del Welfare e delle Politiche Sociali.

Armando Bartolazzi § Salvatore Sciacchitano:
Highlights of Thyroid Cancer Pathology and Molecular Biology
(Invited speakers and Moderators: Bussolati G., Papotti M., LiVolsi V., Rosai J., Sobrinho Simoes M., Volante M, Bartolazzi A., Sciacchitano S., Nikiforov Y., Tallini G., Fusco A., Santoro M.) *Sala della Protomoteca in Campidoglio, February 13th 2009, Rome, Italy.*

Supervisore/mentore

Since 1994 l'applicante è stato supervisore e /o mentore di oltre 30 medici specializzadi, neolaureati in medicina, biologi, ricercatori di base e tecnici di laboratorio in Istituzioni sia Italiane che Estere.

3.3 Relazioni sul posto di lavoro

*dal **1998-2001,*** membro eletto del comitato tecnico scientifico dell'Istituto Tumori Regina Elena di Roma.

Specifiche referenze relative alle relazioni sul posto di lavoro sono documentate da lettere di personalità scientifiche e mediche di caratura Internazionale.

Anders Zetterberg MD, Ph.D, Professor,
MEMBRO DELLA COMMISSIONE NOBEL.
Cancer Center Karolinska, CCK R8:04
Karolinska Hospital, S-17176, Stockholm, Sweden.
phone: + 46 8 517 752 50; fax:+ 46 8 321047; E-mail: Anders.Zetterberg@onkpat.ki.se

Ivan Stamenkovic M.D., Ph.D, Professor: Past Director of the Molecular Pathology Unit, at MGH, Harvard Medical School, Boston, Usa. Professor of Experimental Pathology, Division of Experimental Pathology, Institute of Pathology, CHUV, Lausanne, Switzerland. **Ivan.Stamenkovic@chuv.hospvd.ch**

Ada Sacchi Ph.D.,
Chief of the Dept. of Experimental Research, National Cancer Institute Regina Elena of Rome, Director of Molecular biology Laboratory at C.R.S. – I.R.E. via delle Messi d'Oro 156, Rome, Italy. E-mail: Sacchi@ifo.it Phone: +39-06-52661

Pier Giorgio Natali M.D., Ph.D.,
Past Scientific Director of the N.C.I. Regina Elena, Rome, Italy. Director of Immunology Laboratory and Molecular Pathology Lab. at C.R.S. – I.R.E. via delle Messi d'Oro 156, Rome, Italy. E-mail: Natali@ifo.it
Phone: +39-06-52661

Olle Larsson M.D., Ph.D., Professor
Professor of Pathology, Chief of the Cellular and Molecular Tumor Pathology Laboratory, Cancer Centre Karolinska, Karolinska Hospital, Stockholm, Sweden.
E-Mail: Olle.Larsson@onkpat.ki.se
Fax: +46-8-321047

Competenze strategiche

Promuovere l'attività di ricerca traslazionale nel settore oncologico ed anatomopatologico al fine di migliorare la diagnosi, la cura e la qualità di vita dei pazienti colpiti da tumore.

A) A.B. ha già dato un contributo sostanziale al miglioramento della performance diagnostica della citologia ed istologia convenzionale per la diagnosi dei tumori tiroidei, con la creazione di un test-diagnostico attualmente utilizzato in fase clinica routinaria a livello Internazionale ***(J. Clin. Oncol. 1999; Lancet 2000; Lancet 2001; Lancet Oncol. 2008)***

B) Ha contribuito a definire tecniche di diagnosi molecolare per i sarcomi sinoviali attualmente in uso clinico **(Gene 2001; Cancer Res. 2002; J. Natl. Cancer Inst. 2001; Modern Pathol. 2002)**

C) Ha contribuito a creare nuove strategie terapeutiche per il trattamento dei tumori solidi umani, basate sul concetto di *molecular targeted therapy*, in particolare sull'inibizione della fosforilazione del IGFr. In fase di sperimentazione clinica (**Cancer Res 2000; Cancer Res. 2004).**

Esperienze di innovazione

Brevetti: Anticorpi monoclonali anti-galectina-3 radio marcati per visualizzazione e radio-ablazione in vivo di tumori galectina-3 positivi.

Inventore: Armando Bartolazzi

Co-inventori: Francesco Scopinaro

Alberto Signore

Rome February 2nd 2008, Patent. N. RM2008A000097

Creazione di kit diagnostici (in uso clinico).

IN SINTONIA CON LE DIRETTIVE MINISTERIALI PROPOSTE DAL MINISTRO BRUNETTA RIGUARDO MERITOCRAZIA A COMPETENZE, A.B. IN QUALITA' DI DIRIGENTE MEDICO-OSPEDALIERO, SVOLGE LE SUE ATTIVITA' PROFESSIONALI CLINICO-SCIENTIFICHE NELL'AMBITO DELL'AZIENDA OSPEDALIERA (UNIVERSITARIA) SANT'ANDREA, IN PIENO ANONIMATO ED IN ASSENZA DI INCARICHI DIREZIONALI.

Roma 5 Agosto, 2010