

Curriculum scientifico: S. Beninati

L'attività scientifica è articolata in tre fasi: I- Studi sulle poliammine come fattori di crescita e messa a punto di metodiche analitiche: poliammine (Anal.Biochem., 1977), gamma-glutamyl poliammine (J. Chrom., 1988), ipusina (Anal.Biochem., 1990); II- Poliammine come substrati delle Transglutaminasi (Tgasi) e studio della loro funzione biologica: crescita cellulare (B.B.A., 1988), differenziamento (J.B.C., 1988), crescita tumorale (Intl. J. Cancer, 1993) e metastaticità (Eur. J. Cancer, 2000); III- differenziamento da attivazione della Tgasi in melanomi sperimentali. sintesi di molecole per lo studio del ruolo cellulare della Tgasi. Con tali molecole è stata dimostrata la modificazione post-traduzionale dell'aspartil proteasi dell'HIV-1 (B.B.R.C. 1992), fosfolipasi A2 (J. Biochem.

1993), osteopontina (J. Biochem. 1994), fattore eIF5A (Biochem. J. 1995) e della troponina (B.B.R.C. 1995). L'inibizione della Tgasi con cistamina, ha portato all'inibizione della replicazione dell'HIV-1 in vivo (J.Clin.Inv. 1994), mentre l'attivazione con metilxantine ha permesso di correlare la Tgasi con il differenziamento e soprattutto con la metastaticità tumorale (Intl.J.Cancer, 1993; Cancer J., 1997, Melanoma Res., 1998, Eur. J. Cancer, 2000, Exp. Cell Res., 2001, J. Biochem., 2002).

1982-2007 – Ricercatore Dipartimento di Biologia, Università Tor Vergata Roma Italia
1984 - "Guest researcher" presso i National Institutes of Health, con un programma in collaborazione del Dr. J.E.Folk, capo della "Enzyme Chemistry section, laboratory of Oral biology and Physiology" Bethesda, MD, USA.

1985-1989 - "Visiting Associate" dal Dr. J.E.Folk, "Cellular Development and Oncology", NIH, USA.

1990-1991 - "Visiting Scientist" dal Dr. A.B.Mukherjee, "Section on Developmental Genetics Human Genetics Branch", NIH, Bethesda, MD USA

2007 – Professore Associato di Citologia e Istologia Dip. Biologia Univ. Tor Vergata Roma Italia

Curriculum in inglese

The scientific activity is divided in three periods of time: I- study on polyamines as cellular growth factors and preparation of analytical methods for polyamine (Anal.Biochem., 1977), gamma-glutamyl polyamines (J.Chrom., 1988), hypusine (Anal.Biochem., 1990); II- Polyamines as substrates of Tgases and investigations on some related biological aspects: cell growth (B.B.A., 1988), keratinocytes differentiation (J.B.C., 1988), and cancer (Intl.J.Cancer, 1993); III- Ongoing activity: study on cell differentiation induced by the activation of Tgase in experimental melanomas. The training time spent at NIH working in the laboratory of Dr. Folk, considered the father of Tgases, led to the synthesis of model peptides useful to follow the Tgase reaction without the interference of other amino acids. It has been demonstrated the post-translational modification of HIV-1 aspartyl protease (B.B.R.C., 1992), phospholipase A2 (J.Biochem., 1993), osteopontin (J.Biochem., 1994), eIF5A (Biochem.J., 1995) and troponin (B.B.R.C., 1995). The inhibition of Tgase with cystamine led to the impairment of HIV-1 replication (J.Clin.I., 1994), while the activation with methylxanthines related Tgase with differentiation and metastatic potential in cancer cells (Intl.J.Cancer, 1993; Cancer J., 1997; Melanoma Res., 1998).

1982-2007 – Researcher Department of Biology University Tor Vergata Rome Italy

1985-86 Guest researcher, Laboratory of oral biology and physiology NIDR, NIH Bethesda, MD USA (chief dr. J.E.Folk).

1986-90 Visiting Associate, Laboratory of Oral biology and Physiology NIDR NIH Bethesda MD USA (Chief Dr. J.E.Folk).

1990-91 Visiting Scientist, Laboratory of Human Genetic NIH Bethesda USA (chief Dr. A.B.Mukherjee).

2007 – Associate Professor of Cytology and Histology Dept Biology university Tor Vergata Rome Italy

Aggiorna

Selected Publication : S. Beninati

```
article{a.lentini2000,  
  author={A.LENTINI and F.AUTUORI and P.MATTIOLI and M.CARAGLIA and A.ABBRUZZESE and  
  BENINATI S.},  
  issn={0959-8049},  
  journal={EUROPEAN JOURNAL OF CANCER},  
  note={New procedure for the evaluation of the rate of inhibition of growth and the anti-invasive capability  
of new antineoplastic molecules.},  
  pages={1572--1577},  
  title={Evaluation of the efficacy of potential antineoplastic drugs on tumour metastasis by a computer-  
assisted image analysis},  
  volume=36,  
  year=2000,  
}  
@article{f.facchiano2001,  
  abstract={Polyamines and intracellular transglutaminase activation are involved in a novel regulatory  
pathway of cell viability and apoptosis in human neoplastic diseases.},  
  author={F.FACCHIANO and D. D'ARCANGELO and A. RICCOMI and A. LENTINI and BENINATI S. and  
AND M. CAPOGROSSI},  
  issn={0014-4827},  
  journal={EXPERIMENTAL CELL RESEARCH},  
  pages={118--129},  
  title={Transglutaminase activity is involved in polyamine-induced programmed cell death.},  
  volume=271,  
  year=2001,  
}  
@article{m.2002,  
  abstract={Theophylline induces elevated intracellular cAMP levels that activate PKA causing apoptosis. The  
use of agents that increase the activity of transglutaminases could be proposed for the treatment of tumours.},  
  author={M. CARAGLIA and M. MARRA and G. GIUBERTI and A.M. D'ALESSANDRO and BENINATI S.  
and A. LENTINI and S. PEPE and M. BOCCCELLINO AND A. ABBRUZZESE},  
  issn={0021-924X},  
  journal={JOURNAL OF BIOCHEMISTRY},  
  pages={45--52},  
  title={Theophylline-induced apoptosis is paralleled by protein kinase A-dependent tissue transglutaminase  
activation in cancer cells.},  
  volume=132,  
  year=2002,  
}  
@article{lentini1998,  
  author={LENTINI A. and KLEINMAN H.K. and MATTIOLI P. and AUTUORI-PEZZOLI V. and NICOLINI  
L. and PIETRINI A. and ABBRUZZESE A. and CARDINALI M. and BENINATI S.},  
  issn={0960-8931},  
  journal={MELANOMA RESEARCH},  
  note={Activation of intracellular transglutaminase in vivo and reduction of the proliferation and metastatic  
potential of an experimental melanoma.},  
  pages={131--137},  
  title={Inhibition of melanoma pulmonary metastasis by methylxanthines due to decreased invasion and  
proliferation.},  
  volume=8,  
  year=1998,  
}  
@article{a.2000,  
  author={A. LENTINI and F. VIDALVANACLOCHA and F.FACCHIANO and M.CARAGLIA and  
A.ABBRUZZESE and BENINATI S.},  
  issn={0960-8931},  
  journal={MELANOMA RESEARCH},  
  note={New information for the potential clinical application of theophylline as a chemotherapeutic agent  
against malignant melanoma},  
  pages={1--9},
```

```

        title={Theophylline administration markedly reduces hepatic and pulmonary implantation of B16-F10
melanoma cells in mice},
        volume=10,
        year=2000,
    }
    @article{caraglia2004,
        author={CARAGLIA M. and VITALE G. and MARRA M. and DEL PRETE S. and LENTINI A. and
BUDILLON A. and BENINATI S.},
        issn={0939-4451},
        journal={AMINO ACIDS},
        pages={409--417},
        title={Translational and post-translational modifications of proteins as a new mechanism of action of alpha-
interferon},
        volume={26(4)},
        year=2004,
    }
    @article{costantino2005,
        author={COSTANTINO M. and CARAGLIA M. and BENINATI S. and GIUBERTI G. and DALESSANDRO
A. and LENTINI A. and ABRUZZESE A. and BOVE G. and LANDOLFI F. and ROSSI F. AND LAMPA E.},
        issn={1226-3613},
        journal={EXPERIMENTAL AND MOLECULAR MEDICINE},
        pages={476--481},
        title={Alternative therapy of old earth elements increases the chondroprotective effects of chondroitin-
sulfate in mice.},
        volume={37(5)},
        year=2005,
    }
    @article{lentini2007,
        author={LENTINI A and FORNI C and BENINATI S.},
        doi={10.1007/s00726-006-0304-3},
        issn={0939-4451},
        journal={AMINO ACIDS},
        pages={95--100},
        title={Enhancement of transglutaminase activity and polyamine depletion in B16-F10 melanoma cells by
flavonoids naringenin and hesperitin correlate to reduction of the in vivo metastatic potential},
        url={http://dx.medra.org/10.1007/s00726-006-0304-3},
        volume=32,
        year=2007,
    }
    @article{baldini2006,
        author={BALDINI P.M and DE VITO P and LENTINI A and MATTIOLI P and PROVENZANO B and
BENINATI S.},
        issn={0960-8931},
        journal={MELANOMA RESEARCH},
        pages={501--507},
        title={Decrease of polyamine levels and enhancement of transglutaminase activity in selective reduction of
B16-F10 melanoma cell proliferation induced by atrial natriuretic peptide (ANP).},
        volume={16(6)},
        year=2006,
    }
    @article{nikolic2007,
        author={NIKOLIC J and STOJANOVIC I and PAVLOVIC R and BENINATI S.},
        doi={10.1007/s00726-006-0309-y},
        issn={0939-4451},
        journal={AMINO ACIDS},
        pages={127--131},
        title={Role of L-arginine in toxic liver failure: interrelation of arginase, polyamine catabolic enzymes and
nitric oxide synthase.},
        url={http://dx.medra.org/10.1007/s00726-006-0309-y},
        volume=32,
        year=2007,
    }

```

```
@article{lentini2007-1,  
  author={LENTINI A and MATTIOLI and P and PROVENZANO B and ABBRUZZESE A and BENINATI S.},  
  issn={0300-5127},  
  journal={BIOCHEMICAL SOCIETY TRANSACTIONS},  
  pages={396--400},  
  title={Role of th FAD-dependent polyamine oxidase in the selective formation of N1,N8-bis(gamma-  
glutamyl)spermidine protein cross-links},  
  volume=35,  
  year=2007,  
}  
@article{bjelakovic2007,  
  author={BJELAKOVIC G and BENINATI S. and PAVLOVIC D and STOJANOVIC I and JEVTOVIC T and  
BJELAKOVIC G.B and NIKOLIC J. AND BASIC J},  
  doi={10.1007/s00726-006-0392-0},  
  issn={0939-4451},  
  journal={AMINO ACIDS},  
  pages={525--529},  
  title={Selenomethionine induces polyamine biosynthesis in regenerating rat liver tissue},  
  url={http://dx.medra.org/10.1007/s00726-006-0392-0},  
  volume=33,  
  year=2007,  
}
```