PERSONAL INFORMATION

Nome e cognome:	**Alessandro Tossi**
Indirizzo:	Dipartimento Scienze della Vita, Università di Trieste, Edificio Q, Stanza 107, Via Giorgieri 5, 34127 Trieste, Italy
Telefono:	+39 0405588705
E-mail:	atossi@units.it
Cittadinanza:	Italiana
Luogo e data nascita:	21/02/1960 Chiari (Brescia) Italy

RUOLO ACCADEMICO

Settore:	05/E1 – Biochimica generale e clinica
SSD:	BIO/10 – Biochimica
Ruolo:	PA
Abilitazione naz.	PO BIO/10 2014-2020
Ateneo:	Università di Trieste
Dipartmento:	Scienze della Vita

ESPERIENZE SCIENTIFICA E PROFESSIONALE

2002-oggi	PA, Università di Trieste, Docente di Biochimica. Group leader nel laboratorio Peptidi Antimicrobici
1992-2002	Ricercatore conf., Università di Trieste, Docente di Biochimica. Ricerca nel laboratorio Peptidi Antimicrobici
1990-1992	Post-doctoral fellow, International Centre for Genetic Engineering and Biotechnology (ICGEB), Ricercatore nel gruppo Protein Chemistry. Esperto di sintesi dei peptidi.
1989-1990	Post-doctoral fellow, University of Dublin, Chemistry Department, Ricerca nelle reazioni fotosensibilizzate degli acidi nucleici
1987-1989	Post-doctoral fellow Max-Planck-Institut für Strahlenchemie, Ricerca nella fotofisica, fotochimica e chimica delle radiazioni degli acidi nucleici.

RICERCA

- Design, sintesi chimica e purificazione di peptidi e peptidomimetici bioattivi
- Meccanismi d'azione e relazione struttura-attività dei peptidi e peptidomimetici bioattivi.
- Evoluzione di peptidi di difesa dell'ospite
- Bioinformatica and applicazioni di modelling moleculare per lo studio di peptidi bioattivi

Sito web: https://dsv.units.it/it/ricerca/ambiti/biomedicina?q=it/node/18699

ISTRUZIONE

1987: PhD in Photochemistry, University of Dublin, Chemistry Department
1982: B.A. honours in Natural Sciences (Chemistry), University of Dublin

PUBBLICAZIONI E ATTIVITÀ CONNESSE

- Oltre 100 pubblicazioni in riviste internazionali, peer reviewed. Scopus H-index = 40
- Issue editor per Biopolymers-Peptide Science, Biopolymers – Peptides Science Vol 55 No. 1 (2000) "*Antimicrobial peptides: from host defence to antiinfective agents*", nella quale ha pubblicato un articolo con oltre 750 citazioni.
- Issue editor per Current Protein and Peptide Science Vol 6 No. 1 (2005) *Host Defence Peptides – Roles and applications*.
- Membro della Editorial committee di Probiotics and Antimcrobial Proteins dal 2009
- Peer reviewer per: PLos ONE, Plos Pathogens, J Med Chem, Proteins, Scientific Reports, Biochimica, Gene, Biochimie, Biopolymers, Biomed Central, Bichim. Biophys. Acta, Curr Protein Pept Sci, Cur. Pharmaceut. Design, J. Peptide Sci, J Leukoc Biol, J. Antimic. Chemother, Inate Immunity, Antimicrob Agents Chemother, FEBS lett, Peptides, FASEB J.

COORDINAZIONE DI PROGETTI DI RICERCA

- Principal Investigator per FVG Progetto regionale *R3A2 (Rete regionale per la ricerca e sviluppo di agenti antinfettivi)*. (2008-2013) (LR 26)
- Principal Investigator per progetto FRA 2011 dell'Univ. Trieste "*Activity of host defence peptides"*
- Principal Investigator (MURST PRIN) per il progetto *"Peptidi di difesa dell'ospite come agenti antibiotici e antitumorali: Valutazione del loro ruolo protettivo e del loro potenziale terapeutico"* (2003-2005) (prot. 2003057187)
- Unit Coordinator INTERREG IT/AUS (ITAT2022): *Biodiversità migliorata per uno sfruttamento senza NOWASTE (2017-2019) rifiuti delle colture tradizionali – NO WASTE*
- Unit Coordinator per progetto EU Marie Curie Peoples *(NAM) New antibiotics (PIAP-GA-2008-218191) 7th framework program.* (2009-2012)
- Unit Coordinator per il progetto regionale FVG *Phytovet - Caratterizzazione e valutazione di prodotti vegetali per impiego nel controllo naturale delle malattie per gli allevamenti biologici* (2007 - 2010) (LR 26 project)
- Unit Coordinator per il progetto EU INTAS (03-51-4984) "*Novel antimicrobial peptides of animal origin as a source of anti-infective drugs: isolation, structural characterization, analysis of antimicrobial and cytotoxic activities".* (2004-2007)
- Unit Coordinator per il progetto EU (QLK2-CT-2000-00411) (2000-2003) "*PANAD - Peptides as Novel Antiinfective Drugs"*, Shared Cost - Research and Technological Development (RTD) 5th framework program.

ATTIVITÀ DIDATTICHE E ISTITUZIONALI

Dal 1997:	Biochimica(*); Corso magistrale in CTF ; 2° anno, 8 CFU
Dal 2011:	Chimica Biologica; Degree course: Chemistry, 3° anno, 6 CFU
Dal 2012:	Biochimica Applicata(**); Corso magistrale in CTF, CFU 3° anno, 8CFU
Dal 2006:	Minicorso in Competenze bibliografiche; Corsi magistrali in Farmacia e CTF (4/5° anno, 2 CFU)
2011-2016:	Biochimica; Corso triennale STAN, 2° anno, 6 CFU
2002-2011:	Biochimica; Corso triennale Tecniche erboristiche; 2° anno, 5 CFU
2002-2007:	Docente nel CdL Campus di Tecniche erboristiche
1985-1986:	Cinetica delle reazioni (3° anno) e Fotochimica (3° anno), Degree course in Chemistry, University di Dublin
Dal 2002:	Docente della Scuola di Dottorato in Biomedicina Molecolare, Univ. Trieste
Dal 2018:	Docente della Scuola di Dottorato in Biofisica, Faculty of Nat. Sciences, University of Split, Croazia

(*) Dal 2017 rinominato Biochimica e Biochimica Applicata I
(**) Dal 2018 rinominato Biochimica e Biochimica Applicata II

Dal 2015	Coordinatore Vicario dei corsi di studio magistrali in Farmacia e CTF dell'Univ. di Trieste
Dal 2013	Componente delle Commissioni Didattica, Tirocini ed Mobilità e del gruppo di AQ per i CdS in Farmacia e CTF,
Dal 2015	componente del Comitato d'Indirizzo del CdS in CTF.

Ha insegnato in *scuole di dottorato* presso le Univ. Di Udine (2009), di Girona, Spagna (2009) e di Split, Croazia (2009, 2010).

Ha partecipato ad un *Staff Mobility Teaching Assignment* nel programma Erasmus presso l'Univ. di Split (2012)

RELAZIONE E CO-RELAZIONE DI TESI DI LAUREA E DI DOTTORATO

- Relatore o correlatore in oltre 90 tesi di laurea magistrali o triennali presso l'Università di Trieste (CTF, Farmacia, Chimica, Tecniche erboristiche e Biologia)
- Supervisor per le tesi di 7 studenti stranieri (Univ. Appl. Sci. Weihenstephan, Germania; Univ. Belarus, Bielorussia; Univ. Lisbona, Portugal; Univ. Split, Croazia)
- Supervisor per 8 tesi di PhD dell'Univ. Trieste
- Co-Supervisor di una tesi di PhD dell'Univ. Split, Croazia

ATTIVITÀ ORGANIZZATIVE e COMPETENZE

- Secretario dell'Italian Peptide Society
- Messa in opera del servizio di sintesi di presso l'ICGEB e presso Università di Trieste, e messa in opera del servizio di Surface Plasmon Resonance presso l'Univ. Trieste.
- Co-organizzatore del "Regional biophysics Conference – RBC2016" a Trieste, agosto 2016
- Organizzatore del Workshop "New Antimicrobials" a Trieste, maggio 2012
-

ATTIVITÀ BREVETTUALE

- Co-inventore in 4 brevetti, 2 trasferiti.
- Benedetti F, Tossi A, Berti F, Campaner P, Dinon F(2005). Peptidomimetic inhibitors of retroviral proteases and their use as antivirals. PCT/EP2005/052770, Università di Trieste ed inventori
- Benedetti F., Berti F., Campaner P., Dinon F., Tossi A. (2004). Inibitori peptidomimetici di HIV-PR basati su isosteri diamminodiolici del dipeptide Phe-Pro. PD2004A000151, Università degli Studi di Trieste
- Segura D Raventos, Mygind P Holse, Hoegenhaug H-H Kristensen, Tossi A (2004). Antimicrobial Polypeptides. PCT/DK2004/000400, Novozymes A/S
- Raventos Segura D, Mygind PH, Kristensen Hoegenhaug H-H, Tossi A (2004). Antimicrobial polypeptides. PCT/DK2004/000399, Novozymes A/S
- Copy right per software: Tossi A., "HydrophobicCalculator" and "PeptideGenerator" (S.I.A.E deposito 0303051 e 0303051 - scaduto).

PUBBLICAZIONI SCIENTIFICHE

Articoli in riviste

- M. Mardirossian, N.Pérébaskine, M.Benincasa, S.Gambato, S.Hofmann, P.Huter, C.Müller, K. Hilpert, A.C. Innis, **A.Tossi**, D.N.Wilson (2018) *The dolphin proline-rich antimicrobial peptide Tur1A inhibits protein synthesis by targeting the bacterial ribosome* Cell Chem. Biol. *(in press)*
- T.Rončević, D.Vukičević, N.Ilić, L.Krce, G.Gajski, M.Tonkić, I.Goić-Barišić, L.Zoranić, Y. Sonavane, M.Benincasa, D. Juretić A. Maravić, **A. Tossi** (2018) *Antibacterial activity affected by the conformational flexibility in glycine-lysine-based α-helical antimicrobial peptides* J. Med. Chem. *(in press)*
- D. Juretić, D. Vukičević, **A. Tossi** (2017) *Tools for Designing Amphipathic Helical Antimicrobial Peptides.* Methods Mol Biol. 1548:23-34. doi: 10.1007/978-1-4939-6737-7_2.
- F. D'Este, D. Oro, G. Boix-Lemonche, **A. Tossi**, B. Skerlavaj (2017) *Evaluation of free or anchored antimicrobial peptides as candidates for the prevention of orthopaedic device-related infections*. J Pept Sci. 23(10):777-789. doi: 10.1002/psc.3026. Epub 2017 Jul 14.
- G. Leoni, A. De Poli, M. Mardirossian, S. Gambato, F. Florian, P.Venier, D.N. Wilson, **A. Tossi**, A. Pallavicini, M. Gerdol (2017). Myticalins: *A Novel Multigenic Family of Linear, Cationic Antimicrobial Peptides from Marine Mussels (Mytilus spp.).* Mar Drugs. 15(8). pii: E261. doi: 10.3390/md15080261.
- P. Pengo, M.Şologan, L. Pasquato, F.Guida, S. Pacor**, A. Tossi**, F. Stellacci, D. Marson, S. Boccardo, S. Pricl, P. Posocco (2017) *Gold nanoparticles with patterned surface monolayers for nanomedicine: current perspectives.* Eur Biophys J. 46(8): 749-771. doi: 10.1007/s00249-017-1250-6

- T. Rončević, G. Gajski, N. Ilić, I. Goić-Barišić, M. Tonkić, L. Zoranić, J. Simunić, M. Benincasa, M. Mijaković, **A. Tossi**, D.Juretić, (2017) *PGLa-H tandem-repeat peptides active against multidrug resistant clinical bacterial isolates.* Biochim Biophys Acta. 1859:228–237 doi: 10.1016/j.bbamem.2016.11.011.
- F, D'Este, M, Benincasa, G, Cannone, M, Furlan, M, Scarsini, D, Volpatti, R, Gennaro**, A, Tossi**, B, Skerlavaj, M. Scocchi (2016) *Antimicrobial and host cell-directed activities of Gly/Ser-rich peptides from salmonid cathelicidins.* Fish Shellfish Immunol59:456-468. doi: 10.1016/j.fsi.2016.11.004.
- M. Benincasa, C. Lagatolla, L. Dolzani, A. Milan, S. Pacor, G. Liut, **A.Tossi**, P. Cescutti, R. Rizzo (2016) *Biofilms from Klebsiella pneumoniae: Matrix Polysaccharide Structure and Interactions with Antimicrobial Peptides*, Microorganisms.10;4(3). pii: E26. Doi10.3390/ microorganisms4030026.
- M. Tejesvi, P. Picart, M. Kajula, H. Hautajärvi, L. Ruddock, H. Kristensen, **A. Tossi**, H. Sahl, S. Ek. S.Mattila, A. Pirttilä (2016) *Identification of antibacterial peptides from endophytic microbiome.* AM. Appl Microbiol Biotechnol. 100(21):9283-9293.
- D. Xhindoli, S. Pacor, M. Benincasa, M. Scocchi, R. Gennaro, **A. Tossi** (2016) The human cathelicidin LL-37 - A pore-forming antibacterial peptide and host-cell modulator. *Biochim Biophys Acta.* doi: 10.1016/j.bbamem.2015.11.003.
- M. Kozić, D. Vukičević, J. Simunić, T. Rončević, N. Antcheva, **A. Tossi**, D. Juretić. (2015) *Predicting the Minimal Inhibitory Concentration for Antimicrobial Peptides with Rana Box Domain.* J Chem Inf Model. 55(10):2275-87.
- K. Bociek, S. Ferluga, M. Mardirossian, M. Benincasa, **A. Tossi**, R. Gennaro, M. Scocchi. (2105) Lipopolysaccharide Phosphorylation by the WaaY Kinase Affects the Susceptibility of Escherichia coli to the Human Antimicrobial Peptide LL-37. *J Biol Chem.* **290**:19933-41.
- F. Guida, M. Benincasa, S. Zahariev, M. Scocchi, F. Berti, R. Gennaro, **A. Tossi** (2015) *Effect of Size and N-Terminal Residue Characteristics on Bacterial Cell Penetration and Antibacterial Activity of the Proline-Rich Peptide Bac7.* J. Med. Chem. 58(3):1195-204. doi: 10.1021/jm501367p. Epub 2015 Jan 14.
- D. Xhindoli, F. Morgera, U. Zinth, R. Rizzo, S. Pacor, **A.Tossi** (2015) *New aspects of the structure and mode of action of the human cathelicidin LL-37 revealed by the intrinsic probe p-cyanophenylalanine.* Biochem. J. **465**(3):443-57
- C. Pelillo, M. Benincasa, M. Scocchi, R. Gennaro, **A. Tossi**, S. Pacor (2014) *Cellular internalization and cytotoxicity of the antimicrobial proline-rich peptide Bac7(1-35) in monocytes/macrophages, and its activity against phagocytosed Salmonella typhimurium.* Protein Pept Lett. **21**(4):382-90.
- D. Xhindoli, S. Pacor, F. Guida N. Antcheva, **A. Tossi** (2014) *Native oligomerization determines the mode of action and biological activities of human cathelicidin LL-37.* Biochem J. **457**(2):263-75.
- Luisi, S. Pavan, G. Fontaniv, **A. Tossi**, F. Benedetti, A. Savoini, E. Maurizio, R. Sgarra, D. Sblattero, F. Berti. (2013) *An albumin-derived Peptide scaffold capable of binding and catalysis.* PLoS One **8**:e56469 doi: 10.1371/journal.pone.0056469
- N. Ilić, M. Novković, F.Guida, D. Xhindoli, M. Benincasa, A. Tossi, D. Juretić, (2013) *Selective antimicrobial activity and mode of action of adepantins, glycine-rich peptide antibiotics based on anuran antimicrobial peptide sequences.* BBA - Biomembranes 1828 (3):1004-1012
- V. Tessera, F. Guida, D. Juretić, **A. Tossi** (2012) *Identification of antimicrobial peptides from teleosts and anurans in expressed sequence tag databases using conserved signal sequences.* FEBS J. 279(5):724-36
- F. Benedetti, F. Berti, S. Budal, P. Campaner, F. Dinon, **A. Tossi**, R. Argirova, P. Genova, V. Atanassov, A. Hinkov (2012) *Synthesis and biological activity of potent HIV-1 protease inhibitors based on Phe-Pro dihydroxyethylene isosteres.* J. Med. Chem. 55(8):3900-10.
- M. Novković, J. Simunić, V. Bojović, **A. Tossi**, D. Juretić (2012) *DADP: the database of anuran defense peptides.* Bioinformatics. May 15;28(10):1406-7.
- R.P. Hong Enriquez, S. Pavan, F. Benedetti, **A. Tossi**, A. Savoini, F. Berti, A. Laio (2012). *Designing short peptides with high affinity for organic molecules: a combined docking, molecular dynamics and Monte Carlo approach*. Journal Of Chemical Theory And Computation (ISSN:1549-9618), 8:1121- 1128,
- L. Tomasinsig, B. Skerlavaj, M. Scarsini, F. Guida, R. Piccinini, **A. Tossi**, M. Zanetti (2012) *Comparative activity and mechanism of action of three types of bovine antimicrobial peptides against pathogenic Prototheca spp.* J Pept Sci. 18:105-113
- M. Scocchi, **A. Tossi**, R. Gennaro (2011) *Proline-rich antimicrobial peptides: converging to a non-lytic mechanism of action.* Cell Mol. Life Sci. 68(13):2317-30.
- F. Morgera, S. Pacor, L. Creatti, N. Antcheva, L. Vaccari, **A. Tossi**. (2011) *Effects on APC antigen presenting cells of short-term interaction with the human human host defense peptide beta-defensin 2*. Biochem. J. 436:537-546
- D. Juretić, D. Vukičević, D. Petrov, M.Novković, V. Bojović, B. Lučić,N. Ilić**, A. Tossi**, (2011) *Knowledge-based computational methods for identifying or designing novel, non-homologous antimicrobial peptides.* Eur. J. Biophys. 40(4):371-85
- L. Padovan, L. Segat, A. Pontillo, N. Antcheva, **A.Tossi**, S.Crovella (2010) *Histatins in non-human primates: gene variations and functional effects*. Protein Pept Lett. 17(7):909-18.
- V. Sass, T. Schneider, M.Wilmes, C. Koerner, **A. Tossi**, N. Novikova, O. Shamova, and H.-G. Sahl (2010) *Human β-defensin 3(hBD3) inhibits cell wall biosynthesis in staphylococci* Infect. Immun. **78**: 2793-800.

- L. Padovan, M. Scocchi, **A. Tossi** (2010) *Structural Aspects of Plant Antimicrobial Peptides*. Curr Protein Pept Sci. 78(6):2793-2800
- L. Padovan, S. Crovella, **A. Tossi**, L. Segat (2010) *Techniques for Plant Defensin Production* Curr Protein Pept Sci. 17(3):297-304.
- Benko-Iseppon, S. Galdino, T Calsa Jr, E. Kido, **A. Tossi**, L. Belarmino, S. Crovella (2010) *Overview on Plant Antimicrobial Peptides.* Curr Protein Pept Sci. 17(3):231-235.
- L. Padovan, L. Segat, A. Tossi, T. Calsa Jr, A.K. Ederson, L. Brandao, R.L. Guimarães, V. Pandolfi, M.C. Pestana-Calsa, L.C. Belarmino, A.M. Benko-Iseppon, S. Crovella. (2010) *Characterization of a new defensin from cowpea (*Vigna unguiculata (L.) Walp.*).* Protein Pept. Lett. 17(3):297-304
- L.Tomasinsig, G. De Conti, B. Skerlavaj, R. Piccini, M. Mazzilli, F. D'Este, **A. Tossi**, M. Zanetti (2010) *Broad spectrum activity against bacterial mastitis pathogens and activation of mammary epithelial cells support a protective role of neutrophil cathelicidins in bovine mastitis* Infect. Immun. 78(4):1781-1788.
- L. Tomasinsig, M. Benincasa, M. Scocchi, B. Skerlavaj, **A. Tossi**, M. Zanetti, and R.Gennaro (2010) *Role of cathelicidin peptides in bovine host defence and healing* Probiotics Antimic.Prot. 2(1):12-20.
- D. Juretić, D. Vukicević, N. Ilić, N. Antcheva, **A.Tossi** (2009) *Computational design of highly selective antimicrobial peptides*. J. Chem. Inf. Model. 49:2873-2882.
- N. Antcheva, F. Morgera, L. Creatti, L. Vaccari, U. Pag, S. Pacor, Y. Shai, H.G. Sahl, **A. Tossi** (2009) *Artificial beta-defensin based on a minimal defensin template*. Biochem. J. 421:435-447
- L.Tomasinsig, F. Morgera, N. Antcheva, S. Pacor, B. Skerlavaj, M. Zanetti, **A.Tossi**, (2009) *Structure dependence of biological activities for primate cathelicidins* J Pept Sci. 15:576-582.
- M. Foschiatti, P.Cescutti, **A.Tossi,** R. Rizzo (2009) *Inhibition of cathelicidin activity by bacterial exopolysaccharides*. Mol. Microbiol. 72: 1137–1146.
- L. Padovan, L. Segat, **A.Tossi,** N. Antcheva, A.M. Benko-Iseppon, A.K. Ederson, Brandao, L., T. Calsa, Jr, S. Crovella, (2009) *A Plant-Defensin from Sugarcane (Saccharum spp.)*. Protein Pept. Lett. 16(4):430-6.
- O. Shamova, D.Orlov, C. Stegemann, P. Czihal, R. Hoffmann, K. Brogden, N. Kolodkin, G. Sakuta, **A**. **Tossi,** H.-G. Sahl, V. Kokryakov, R.I. Lehrer (2009) *ChBac3.4: A Novel Proline-Rich Antimicrobial Peptide from Goat Leukocytes* Int. J. Pep. Res. Therap., 15:107-120
- F. Morgera, L. Vaccari, N. Antcheva, D. Scaini, S. Pacor, A. Tossi (2009) *Primate cathelicidin orthologues display different structures and membrane interactions* Biochem. J., 417:727-735.
- L. Tomasinsig, C. Pizzirani, B. Skerlavaj, P. Pellegatti, S. Gulinelli, **A. Tossi**, F. Di Virgilio, M. Zanetti. (2008) *The human cathelicidin LL-37 modulates the activities of the P2X7 receptor in a structure-dependent manner*. J. Biol. Chem., 283:30471-81
- L.Segat , A. Pontillo , M. Milanese , A. **Tossi** and S. Crovella (2008) *Evolution of the hepcidin gene in primates*. BMC Genomics, 9:120
- V.Sass; U. Pag; **A. Tossi**; G. Bierbaum; H.-G. Sahl (2008) *Mode of action of human β-defensin 3 (hBD3) against Staphylococcus aureus and transcriptional analysis of responses to defensin challenge* Int. J. Med. Microbiol. 298:619-33
- U. Pag, M. Oedenkoven, V. Sass, Y. Shai, O. Shamova, N. Antcheva, **A. Tossi** and H.-G. Sahl (2008) *Analysis of in vitro activities and modes of action of synthetic antimicrobial peptides derived from an α-helical "sequence template"*. J. Antimic. Chemoth. 61:341–352
- F. Morgera, N. Antcheva , S. Pacor, L. Quaroni, F. Berti, L. Vaccari and **A. Tossi** (2008) *Structuring and interactions of human β-defensins 2 and 3 with model membranes* J. Pept. Sci. 14(4):518-23.
- F. Fabris, A. Sgarro, and **A. Tossi** (2007) Splitting the blosum score into numbers of biological significance. EURASIP J. Bioinformatics System Biol 2007:Q1, article ID 31450 (ISSN: 1687-4145)
- V. Camozzi, **A. Tossi**, E. Simoni, C. M. Francucci and L. Moro (2007). *Role of biochemical markers of bone remodelling in clinical practice* J. Endocrin. Invest. 30, S6, 13-17
- M. Benincasa, M. Scocchi, S. Pacor, **A. Tossi**, D. Nobili, G. Basaglia, M. Busetti, R. Gennaro (2006) *Fungicidal activity of five cathelicidin peptides against clinically isolated yeasts*. J Antimicrob Chemother. 58(5):950-9.
- Zelezetsky, A. Pontillo, L. Puzzi, N. Antcheva, L. Segat, S. Pacor, S. Crovella, **A. Tossi**. (2006) *Evolution of the primate cathelicidin. Correlation between structural variations and antimicrobial activity.* J Biol Chem. 281(29):19861-71.
- Zelezetsky, **A. Tossi** (2006) *Alpha-helical antimicrobial peptides-Using a sequence template to guide structure-activity relationship studies*. Biochim Biophys Acta. 1758(9):1436-49.
- M. Boniotto, W. J. Jordan, J. Eskdale, **A. Tossi**, N. Antcheva, S. Crovella, N. D. Connell , G. Gallagher. (2006) *Human beta-defensin 2 induces a vigorous cytokine response in peripheral blood mononuclear cells.* Antimicrob. Agents Chemother 50:1433-41
- Zelezetsky, U. Pag, H.-G. Sahl, **A.Tossi** (2005) *Tuning the biological properties of amphipathic alpha-helical antimicrobial peptides: Rational use of minimal amino acid substitutions.* Peptides. **26**(12):2368-76

- M. Scocchi, I. Zelezetsky, M. Benincasa, R. Gennaro, A. Mazzoli, **A. Tossi**. (2005) *Structural aspects and biological properties of the cathelicidin PMAP-36*. FEBS J. **272**:4398-406.

- Zelezetsky, S. Pacor, U. Pag, N. Papo, Y. Shai, H.-G. Sahl, **A. Tossi** (2005) *Controlled alteration of the shape and conformationalstability of α-helical cell-lytic peptides: effect on mode of action and cell specificity*. Biochem. J. **390** (Pt.1): 177-188
- S. Crovella, N. Antcheva, I. Zelezetsky, M. Boniotto, S. Pacor, M. V. Verga Falzacappa, and **A. Tossi** (2005) *Primate beta-defensins – structure, function and evolution*. Current Prot. Pept. Sci. **6**:7-21.

- Zelezetsky, U. Pag, N. Antcheva, H.-G. Sahl, and **A.Tossi** (2005) *Identification and optimization of an antimicrobial peptide from the ant venom toxin pilosulin*. Arch. Biochem. Biophys. **434**:358-364

- H.-G. Sahl, U. Pag, S. Bonness, S. Wagner, N. Antcheva, **A. Tossi**., (2005) *Mammalian Defensins: Structures and Mechanism of Antibiotic Activity* J. Leukoc. Biol. **77 (4)** 466-75
- T. Schneider, M. Senn, B. Berger-Bächi, **A. Tossi**, H-G. Sahl and I. Wiedemann, (2004). *In vitro assembly of a complete, pentaglycine interpeptide bridge containing cell wall precursor (lipid II-Gly5) of Staphylococcus aureus* Mol. Microbiol. **53**(2):675-85.
- M. Ventura , M. Boniotto , M. Pazienza , V. Palumbo , M.F. Cardone , M. Rocchi , **A. Tossi** , A. Amoroso , S. Crovella (2004) *Localization of beta-defensin genes in non human primates*. Eur. J. Histochem. **48**(2):185-90.
- N. Antcheva, M. Boniotto, I. Zelezetsky, S. Pacor, M. V. Verga Falzacappa, S. Crovella and **A. Tossi** (2004) *Effects of positively selected sequence variation in human and Macaca fascicularis beta-defensin 2 on antimicrobial activity.* Antimicrob. Agents Chemother. **48**:685-688.
- F. Benedetti, F. Berti, S. Miertus, D. Romeo F. Schillani, **A. Tossi** (2003) *Design, synthesis and preliminary evaluation of peptidomimetic inhibitors of HIV aspartic protease with an epoxyalcohol core.* ARKIVOC **(xiv)** 140-154.
- **Tossi,** F. Benedetti, S. Norbedo, D. Skrbec, F. Berti, D. Romeo (2003) *Small Hydroxyethylene-based peptidomimetics inhibiting both HIV-1 and C. albicans aspartic proteases* Bioorg. and Med. Chem. **11**:4719-4727.
- M. Boniotto, N. Antcheva, I. Zelezetsky, **A. Tossi**, V. Palumbo, M. V. Verga Falzacappa, S. Sgubin, L. Braida, A. Amoroso, S. Crovella (2003) *A study of host defence peptide β-defensin 3 in primates.* Biochemical J. **374**(Pt 3):707-14.
- M. Boniotto, **A. Tossi**, M. DelPero, S. Sgubin, N. Antcheva, D. Santon, J. Masters and S. Crovella. (2003) *Evolution of the beta defensin 2 gene in primates.* Genes and Immunity**, 4**:251-7.
- Nair, I. Bonin, **A. Tossi**, W. Welsh and S. Miertus (2002) *Computational studies of the resistance patterns of mutant HIV-1 aspartic proteases towards ABT-538 (ritonavir) and design of new derivatives*, J. Molec. Graphics Modelling **21**:171-179.
- D. Pantarotto, A. Bianco, F. Pellarini , **A. Tossi** , A. Giangaspero , I. Zelezetsky , JP. Briand and M. Prato (2002) *Solid-Phase Synthesis of Fullerene-peptides.* J. Am. Chem. Soc. **124**:12543-12549

- S. Pacor, A. Giangaspero, M. Bacac, G. Sava and **A. Tossi**. (2002) *Analysis of the cytotoxicity of synthetic antimicrobial peptides on mouse leukocytes: Implications for systemic use.* J. Antimic. Chemother. **50** :339-48
- **Tossi ,** Sandri L. (2002) *Molecular diversity of ribosomially synthesized cationic antimicrobial polypeptides.* Curr. Pharm. Design, **8**:743-761.
- M. Boniotto, **A. Tossi** and S. Crovella (2002) *Differentiation of Beta-defensin 2 in rhesus monkey (Macaca mulatta) and long-tailed macaque (M. fascicularis)* Clin. Diagnos. Lab. Immunol. **9**: 503-504.

- Giangaspero, L. Sandri and **A. Tossi** (2001) *Amphipathic alpha-helical antimicrobial peptides: a systematic study of the effects of structural and physical properties on biological activity.* Eur. J. Biochem. **268**: 5589-5600.
- F. Pellarini, D. Pantarotto, T. Da Ros, A. Giangaspero, **A. Tossi** and M. Prato (2001) *A Novel [60]Fullerene Amino Acid for Use in Solid-Phase Peptide Synthesis.* Org. Lett. *3*(12); 1845-1848.
- **Tossi,** L. Sandri and A. Giangaspero (2000) *Amphipathic α-Helical antimicrobial peptides*, Biopolymers **55 (1)**: 4-30.
- **Tossi**, I. Bonin, N. Antcheva, S. Norbedo, Fabio Benedetti, S. Miertus, anil C. Nair, T. Maliar, F. dal Bello, G. Palù and D. Romeo (2000) *Aspartic protease inhibitors: an integrated approach for the design and synthesis of diaminodiol based peptidomimetics*, Eur. J. Biochem. 267, 1715-1722.
- F. Benedetti, M. Magnan, S. Norbedo, D. Parat, S. Miertus and **A. Tossi** (1999) *Stereoselective synthesis of non symmetric dihydroxyethylene dipeptide isosteres via epoxyalcohols derived from α-amino acids.* Bioorg. Med. Chem. Lett. 9: 3027-3030
- D. Matkovic-Calogovic, A. Loregian, M. D'Acunto, R. Battistutta, **A. Tossi**, G. Palù and G. Zanotti (1999) *Crystal structure of the B subunit of human E. coli heat-labile enterotoxin carrying peptides with anti-HSV activity*, J. Biol. Chem. 274:8764-8769.
- **Tossi**, N. Antcheva, F. Benedetti, S. Norbedo, S. Miertus and D. Romeo (1999) *Flexible synthesis of symmetric and non-symmetric hiv-1 protease inhibitors based on all-s-diaminodiol isosteres,* Prot. Pep. Lett. 6**:**145-148.
- E. Tiozzo, G. Rocco, **A. Tossi** and D. Romeo (1998) *Wide-spectrum antibiotic activity of synthetic, amphipathic peptides*. Biochem. Biophys. Res. Commun. **249**:202-206

- A.A.Nair, S. Miertus, **A. Tossi** and D. Romeo (1998*) A computational study of the resistance of HIV-1 aspartic protease to the inhibitors ABT-538 and VX-478 and design of new analogs.* Biochem. Biophys. Res. Commun. **242**:545-551
- V. Frecer, S. Miertus, **A .Tossi** and D. Romeo (1998) *Rational design of inhibitors for drug-resistant HIV-1 aspartic protease mutants*. Drug Design & Discovery **15**:211-231
- **A.Tossi**, C. Tarantino and D. Romeo (1997*) Design of synthetic antimicrobial peptides based on sequence analogy and amphipathicity.* Eur. J. Biochem. **150**:549-558
- F. Benedetti, S. Miertus, S. Norbedo, **A. Tossi** and P. Zlatoidsky (1997) *A versatile and stereoselective synthesis of diaminodiol dipeptide isosteres, core units of pseudopeptide HIV protease inhibitors*. J. Org. Chem. **62**:9348-9353
- P. Storici, **A. Tossi**, B. Lenarcic and D. Romeo (1996) *Purification and structural characterization of bovine cathelicidins, precursors of antimicrobial peptides.* Eur. J. Biochem. **238**: 769-776.

- S. Miertus, M. Furlan, **A. Tossi**, and D. Romeo (1996) *Design of new inhibitors of HIV-1 aspartic protease*. Chem. Phys. **204**:173-180
- **Tossi**, N. Antcheva, D.Romeo and S. Miertus (1995) *Development of pseudopeptide inhibitors of HIV-1 aspartic protease: analysis and tuning of the subsite specificity.,* Peptide Res. **8**:328-334
- **Tossi**, L. Sun, H. Görner and D. Schulte-Frohlinde (1995) *Inhibition of OH radical induced strand break formation in poly(U) by Ru(bpy)$_3^{2+}$ or Ru(phen)$_3^{2+}$ attached to the polynucleotide.* Int. J. Radiat. Biol., **5**:525-533
- **Tossi**, M. Scocchi, M. Zanetti, P. Storici and R. Gennaro (1995) *PMAP-37, a novel antibacterial peptide from pig myeloid cells: c-DNA cloning, chemical synthesis and activity.* Eur. J. Biochem., **221**:941-946

- J. Zhang, R.J. Sanchez, S. Lung, C. Guarnaccia, **A. Tossi**, S. Zachariev and S. Pongor (1995) *Substrate specificity of CDC2 kinase from human HeLa cells as determined with synthetic peptides and molecular modelling.* Arch. Biochem. Biophys. **315**:415-424
- **Tossi**, M. Scocchi, B. Skerlavaj and R. Gennaro (1994) *Identification and characterization of a primary antibacterial domain in CAP18, a lipopolysaccaride binding protein from rabbit leukocytes.* FEBS Lett. **339:** 108-112
- M. Zanetti, P. Storici, **A. Tossi**, M. Scocchi and R. Gennaro (1994) *Molecular cloning and chemical synthesis of a novel antibacterial peptide derived from pig myeloid cells.* J. Biol. Chem. **269**: 7855-7858

- P.Storici, M. Scocchi, **A. Tossi**, R. Gennaro and M. Zanetti (1994) *Chemical synthesis and biological activity of a novel antibacterial peptide deduced from a pig myeloid cDNA.* FEBS Lett. **337**:303-307

- P. Percipalle, R. Saletti, S. Pongor, S. Foti, **A. Tossi** and S. Fisichella (1994) *Structural characterization of synthetic model peptides of the DNA-binding cI434 repressor by electrospray ionization and fast atom bombardment mass spectrometry,* Biol. Mass. Spec. **23**:727-733
- M.M. Feeney, J.M. Kelly, **A. Tossi**, A. Kirsch-de Mesmaeker and J.-P. Lecomte (1994) *Photoaddition of ruthenium(II)-tris-1,4,5,8-tetraazaphenanthrene to DNA and mononucleotides.* J. Photochem. Photobiol. B. (Biol.) **23**:69-78
- **Tossi** and H. Görner (1993) *Photoinduced interaction of Ru(bpy)$_3^{2+}$ with nucleotides and nucleic acids in the presence of S_2O8^{2-}: a transient conductivity study.* J. Photochem. Photobiol. B. (Biol.) **17**:115-125

- G.S. Simon, R. Paladini, S. Tisminetzky, M. Czerzö, Z. Hátsági, **A. Tossi** and S. Pongor (1992) *Improved detection of homology in distantly related proteins: similarity of adducin with actin-binding proteins.* Protein Seq. Data Anal. **5**:39-42
- J-P. Lecomte, A. Kirrsch-DeMesmaeker, J. M. Kelly, **A. Tossi** and H. Goerner (1992) *Photo-induced electron transfer from nucleotides to ruthenium-tris-1,4,5,8 tetraazaphenanthrene: model for photosensitized DNA oxidation.* Photochem. Photobiol. **55**:681-689
- F. deBuyl , A. Kirsch de Mesmaeker, **A. Tossi** and J.M. Kelly (1991) *Medium dependence of the spectroscopic and photophysical properties of Ru(bpy)$_2$(HAT)$^{2+}$. The effect of solvent, pH and binding to polyelectrolytes.* J. Photochem. Photobiol. A. (Chem) **60**:27-45
- **Tossi** (1990) *Site-specific photocleavage of DNA.* J. Photochem. Photobiol. B. (Biol) **7**:93-96
- J.M. Kelly, **A. Tossi**, M.J. Feeney, J.-P. Lecompte and A. Kirsh-DeMesmaeker (1990) *Interaction of tetra-azaphenanthrene ruthenium complexes with DNA and oligonucloetides. A photophysical and photochemical investigation.* Anti Cancer Drug Design **5**:69-75
- **Tossi** and J.M. Kelly (1989) *A study of some ruthenium polypyridyl complexes as DNA binders and photocleavage reagents.* Photochem. Photobiol. **49**:545-556
- **Tossi,** H. Görner and D. Schulte-Frohlinde (1989) *Photosensitized reactions of poly(U) with tris(2,2'-bipyridyl)ruthenium(II) and peroxydisulfate.* Photochem. Photobiol. **50**:585-597

- **Tossi,** H. Görner, A. Aboul-Enein and D. Schulte-Frohlinde (1989) *Interaction of ruthenium complexes with nucleic acids. DNA damage via photosensitized free-radical production.* Free Rad. Res. Commun. **6**:93-95
- H. Görner, **A. Tossi**, C. Stradowski and D. Schulte-Frohlinde (1988) *Binding of* $Ru(bpy)_3^{2+}$ *and* $Ru(phen)_3^{2+}$ *to polynucleotides and DNA. Effect of added salts on the absorption and luminescence properties.* J. Photochem. Photobiol. B (Biol.) **2**:67-89
- J.M. Kelly, D.J. McConnell, C. OuUigin, **A. Tossi**, A. Kirsh-DeMesmaeker, A. Masschelein and J. Nasieski (1987) *Ruthenium polypyridyl complexes; their interactions with DNA and their role as sensitizers for its fotocleavage.* J. Chem. Soc., Chem. Commun. 1821-1823
- J. M. Kelly, **A. Tossi**, D. J. McConnell and C. OuUigin (1985) *A study of the interactions of some polypyridylruthenium(II) complexes with DNA using fluorescence spectroscopy, topoisomerisation and thermal denaturation.* Nuc. Acids Res. **13**:6017-6034

Capitoli in libri

- A.Tossi, B. Skerlavaj, F. D'Este, R Gennaro (2017) *Structural and Functional Diversity of Cathelicidins* in Antimicrobial Peptides: Discovery, Design and Novel Therapeutic Strategies, G. Wang Ed. CABI publishers, 2nd Ed. pp.20-48.
- D. Juretic, D. Vukicevic and A. Tossi (2017) *Tools for Designing Amphipathic Helical Antimicrobial Peptides* in Antimicrobial Peptides, P. Hansen Ed. Springer, NY, pp23-34.
- N. Antcheva, F. Guida and A. Tossi (2103) *Defensins* in *Handbook of Biologically Active Peptides* A.J. Kastin Ed. Chapter 11, pp. 101-118, Elsevier, Burlington, MA.
- A Tossi, M Scocchi, S Zahariev, R Gennaro. (2012) *Use of Unnatural Amino Acids to Probe Structure-Activity Relationships and Mode-of-Action of Antimicrobial Peptides.* In *Unnatural Aminoacids,* Methods Mol Biol. vol 794, L. Pollegioni and S. Servi eds., pp169-83. Humana Press (ISBN 978-1-61779-330-1)
- A. Tossi (2011) *Design and engineering strategies for synthetic antimicrobial peptides* In *Prokaryotic Antimicrobial Peptides – From genes to applications* D. Dride and S. Rebuffat eds., pp81-98 Springer (ISBN 978-1-4419-7691-8)
- F. Morgera, L. Vaccari, L. Creatti, N. Antcheva, A. Tossi *Structure and activities of amps at the bacterial membrane* in Membrane-active peptides: methods and results on structure and function. IUL Biotechnology Series, 9; M. Castanho Ed. IUL Publishers (International University Line), La Jolla, California, USA (2009).
- Scocchi M., Mattiuzzo M., Benincasa M., Antcheva N., **Tossi A.,** and Gennaro R. (2008) *Investigating the Mode of Action of Proline-rich Antimicrobial Peptides Using a Genetic Approach: a Tool to Identify New Bacterial Targets Amenable to the Design of Novel Antibiotics*. In Peptide-based Drug Design - Methods in Molecular Biology 494:161-76, L. Otvos Ed., Humana Press (ISBN 978-1-58829-990-1)
- N. Antcheva, I. Zelezetsky and **A. Tossi** (2006) "*Cationic Antimicrobial Peptides—The Defensins" in The Handbook of Biologically Active Peptides,* A.J. Kastin Ed. Chapter 11, pp. 55-66, Elsevier, Burlington, MA.
- **Tossi,** M. Scocchi, M. Zanetti, R. Gennaro, P.Storici and D. Romeo (1997) *An appraoch combining rapid cDNA amplification and chemical synthesis for the identification of novel, cathelicidin-derived, antimicrobial peptides.* In: Current Protocols in Antimicrobial Peptide Research - Methods in Molecular Biology (W.M. Shafer, ed.), Humana Press, Totowa Vol 78, pp 133-150
- D. Schulte-Frohlinde, **A. Tossi** and H. Görner (1989) *Laser-induced strand break formation of polyuridylic acid in the presence and absence of tris(2,2'-bipyridyl)ruthenium(II) and* $K_2S_2O_8$. NATO ASI Ser., Ser. C, Vol 272 (Photochemical Probes in Biochimica), P.E. Nielsen ed., Kluwer, Dordrecht, Germany, pp 199-208
- J.M. Kelly, **A. Tossi**, D.J. McConnell, C. OhUigin, C. Hélène and T. LeDoan (1989) *Interactions of some ruthenium polypyridyl complexes with DNA and their use as sensitizers for its cleavage.* In: Free Radicals, Metal Ions and Biopolymers, P.C. Beaumont, D.J. Deeble, B.J. Parsons and C. Rice-Evans eds., Richelieu Press, London. U.K, pp. 143-155