Paola Baiocco
Curriculum Vitae

Roma, 23/08/2018

Part I – General Information

Part II – Education

Type	Year	Institution	Notes (Subject, Experience,…)
PhD	2006	Università "Sapienza" di Roma	"Structure-function analysis of pathogenically important proteins from Schistosome parasites"
University graduation	2002	Università "Sapienza" di Roma	"New enzymatic methods of oxidation of aromatic compounds and ethers: mechanistic aspects"

Part III – Qualification

28/03/2018	Abilitazione Scientifica Nazionale alle funzioni di professore di II fascia per il settore concorsuale 05/E1 – SSD BIO/10
2002	Abilitazione all'esercizio della professione di Chimico (Esame di Stato)

Part IV – Appointments

IVA – Academic Appointments

Start	End	Institution	Position
1/09/2014	-	Istituto Italiano di Tecnologia, Center for Life Nano Sciences@Sapienza	Senior Post-Doc "Engineering ferritin nanoparticles for bioimaging and drug delivery"
02/01/2012	31/08/2014	Dip. di Chimica e Tecnologia del Farmaco, Università degli studi di Roma "Sapienza"	Assegno di Ricerca nel settore BIO11. "Isolamento, clonaggio ed espressione di enzimi per prodotti chirali"
01/06/2009	31/12/2011	Dip. Di Scienze Biochimiche, Università degli studi di Roma "Sapienza"	Assegno di Ricerca nel settore BIO11. "Identificazione di bersagli enzimatici di nuovi antibiotici"

PB

1/11/2005	31/10/2008	Dip. Di Scienze Biochimiche, Università degli studi di Roma "Sapienza"	Post-Doc nel progetto FIRB 2003 "Enzimi e catalizzatori organometallici per la chimica sostenibile"

IVB – Other Appointments

Start	End	Institution	Position
2006	2007	IRBM P. Angeletti	Temporary Employee on antiviral project on the non-structural protein NS3 of Hepatite C Virus (HCV) with its cofactor NS4A: structural analysis in complex with inhibitors

Part V – Third Mission Activity

Year	Institution	Lecture/Course
2009	Consorzio Sapienza & Innovazione	Attendance to FixO Course on "Azioni formative e di accompagnamento per l'avvio di spin-off accademici orientate all'utilizzazione industriale dei risultati della ricerca universitaria"

Part VI - Awards and Honors

2012, November 19-20th: Award for the "Most innovative italian intuition of 2011 in the Biomedical Sciences field" BioEconomy Rome Conference

2007, Award of Excellence at the Merck Research Laboratories at Target-to-phaseIIb Symposium (Atlanta) on "Crystal structures of the Hepatitis C viral proteins, NS3 protease in complex with active site inhibitors and NS5B polymerase in complex with allosteric inhibitors"

Part VII - Patents

Product type	Year	Title	International Publication number
Patent [international]	29/12/2016	"Cellular Targeted Label Delivery System"	WO 2016/207256 A1
Patent [international]	29/12/2016	"Cellular Targeted Active Ingredient Delivery System"	WO 2016/207257 A1

Part VIII – Research Activities

Keywords	**Brief Description:**
Nanotechnologies, Drug delivery, Diagnostics	My recent research activity aimed to explore the non-viral drug delivery to both neural and muscle tissue receptors by using genetically modified human recombinant proteins to enable cell-targeting ability. All the projects are based on the evidence that cancer cells, with their high rate of proliferation, have dramatically increased iron requirements and express an increased number of transferrin receptor

	(CD71). Ferritin-based nanoparticles are internalised by CD1 receptor and form a cage-like structure thus representing an interesting tool for drug delivery systems and nano-fluorescent probes in diagnostics. Ferritin versatility can be used to successfully engineer both the outer scaffold in order to display higher affinity to the receptors and the internal surface by chemical manipulation to expand their cargo-carrying capabilities.
Nanotechnologies, Drug Delivery	In the last years, two international patents have been published and extended internationally. The inventions related to a macrophage-based targeted delivery system of ferritin bound active ingredients that is used for directing the desired active ingredients directly to the tumor mass or other hypoxic areas within the patient's body, i.e. the area targeted by macrophages. This system is also useful for delivery of a contrast agent to enable imaging of macrophage targeted area or for delivery of active ingredients (drugs or prodrugs) to the tumor mass or hypoxic area for treatment purposes.
Neurodegenerative disease	Recently, a project was started aiming to use optimized chromophores in the early detection of fibrillogenesis of Tau protein in retina tissue by using a high resolution microscope in collaboration with a team of chemists and physicists in IIT.
Crystallography, Protein structures, Bioactive compounds	Previously, I worked on structural-functional analysis of enzymes belonging to the trypanothione pathway of Leishmania parasite in the development of drugs against Leishmaniasis, a poverty-related disease characterized by high morbidity. In 2009, we discovered the molecular basis of the most used drugs based on antimonial compounds by solving the crystal structure of trypanothione reductase which is essential for the survival of the parasite.
Bioactive compounds, Green chemistry	In the past, I worked in a project aimed to find new strategies for the efficient enzymatic synthesis of bioactive pharmaceutical compounds, including (S)-norcloclaurine, the key precursor of benzylisoquinoline alkaloids by a environmental friendly, cheaper and cleaner synthetic routes.

Part IX – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	27	Scopus	2002	2018
Patents [international]	2		2016	2018

Total Impact factor	108,98 (Scopus)
Total Citations	867 (Scopus)
Average Citations per Product	32,11
Hirsch (H) index	18 (Scopus)
Normalized H index*	12 (Scopus)

*H index divided by the academic seniority.

Part X– Selected Publications

List of the publications selected for the evaluation.

1. Calisti L., Cardoso Trabuco M., Boffi A., Testi C., Montemiglio L.C., des Georges A., Benni I., Ilari A., Taciak B., Białasek M., Rygiel T., Król M., Baiocco P.*, Bonamore A.

"Engineered ferritin for lanthanide binding" PLoS One 2018, 13(8):e0201859. doi: 10.1371/journal.pone.0201859

Citations 0 (Scopus)

2. Benni I., Cardoso Trabuco M., Di Stasio E., Arcovito A., Boffi A., Malatesta F., Bonamore A., De Panfilis S., de Turris., Baiocco P. "Excimer based fluorescent pyrene–ferritin conjugate for protein oligomerization studies and imaging in living cells" RSC Adv., 2018, 8, 12815–12822

   Citations 0 (Scopus)

3. de Turris V., Cardoso Trabuco M., Peruzzi G., Boffi A., Testi C., Vallone B., Montemiglio LC., Des Georges A., Calisti L., Benni I., Bonamore A., Baiocco P. "Humanized archaeal ferritin as a tool for cell targeted delivery" Nanoscale. 2017, 9, 647-655

   Citations 3 (Scopus)

4. Calisti L., Benni I, Cardoso Trabuco M., Baiocco P, Ruzicka B, Boffi A., Falvo E., Malatesta F., Bonamore A., "Probing bulky ligand entry in engineered Archael Ferritins." Biochim Biophys Acta. 2017, 1861, 450-456

   Citations 2 (Scopus)

5. Baldassarre L, Giliberti V, Rosa A, Ortolani M, Bonamore A, Baiocco P, Kjoller K, Calvani P, Nucara A. "Mapping the amide I absorption in single bacteria and mammalian cells with resonant infrared nanospectroscopy." Nanotechnology. 2016 Feb 19;27(7):075101.

   Citations 20 (Scopus)

6. Colotti G, Ilari A, Fiorillo A, Baiocco P, Cinellu MA, Maiore L, Scaletti F, Gabbiani C, Messori L. "Metal-based compounds as prospective antileishmanial agents: inhibition of trypanothione reductase by selected gold complexes." ChemMedChem. 2013 Oct;8(10):1634-7.

   Citations 17 (Scopus)

7. Baiocco P, Poce G, Alfonso S, Cocozza M, Porretta GC, Colotti G, Biava M, Moraca F, Botta M, Yardley V, Fiorillo A, Lantella A, Malatesta F, Ilari A. "Inhibition of Leishmania infantum trypanothione reductase by azole-based compounds: a comparative analysis with its physiological substrate by X-ray crystallography." ChemMedChem. 2013 Jul;8(7):1175-83.

   Citations 26 (Scopus)

8. Ilari A & Baiocco P, Messori L, Fiorillo A, Boffi A, Gramiccia M, Di Muccio T, Colotti G. "A gold-containing drug against parasitic polyamine metabolism: the X-ray structure of trypanothione reductase from Leishmania infantum in complex with auranofin reveals a dual mechanism of enzyme inhibition." Amino Acids. 2012, 42, 803-11

   Citations 64 (Scopus)

9. Baiocco P. & Ilari A., Ceci P., Orsini S., Gramiccia M., Di Muccio T., Colotti G.: "Inhibitory effect of silver nanoparticles on Trypanothione Reductase activity and Leishmania infantum proliferation" ACS Med. Chem. Letters 2011, 2, 230-233

   Citations 36 (Scopus)

10. Narjes. F., Crescenzi B., Ferrara M., Habermann J., Colarusso S., Rico Ferreira M., Stansfield I., Mackay A., Conte I., Ercolani C., Zaramella S., Palumbi M. C., Meuleman P., Leroux-Roels G., Giuliano C., Fiore F., Di Marco S., Baiocco P., Koch U., Migliaccio G.,

Altamura S., Laufer R., De Francesco R. and Rowley M.: "Discovery of MK-3281, a Potent Non-Nucleoside Finger-Loop Inhibitor of the Hepatitis C Virus NS5B Polymerase." J. Med. Chem., 2011, 54, 289–301
Citations 45 (Scopus)

11. Bonamore A., Rovardi I., Gasparrini F., Baiocco P., Barba M., Molinaro C., Botta B., Boffi A., Macone A.: "An enzymatic, stereoselective synthesis of (S)-norcoclaurine" Green Chem., 2010, 12, 1623-1627

    Citations 32 (Scopus)

12. Baiocco P. & Colotti G., Franceschini S., Ilari A.: "Molecular basis of antimony treatment in Leishmaniasis." J. Med. Chem., 2009, 52, 2603-12

    Citations 125 (Scopus)

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