

Name: Valentina Bassareo

### **Academic Titles**

- 1992: Higher education degree in Pharmacy at the University of Cagliari with the rate 110/110 cum Laude.
- 1993-1996: Ph.D. in Toxicology at the University of Cagliari with the rate 50/50 cum Laude.
- 1996-2001: PhD in Neuroscience, University of Cagliari.
- 2001-2002: postdoctoral research at the Department Toxicology, University of Cagliari. Fellowship of private company CO.SA.FA.CA.
- 2002 to present: Assistant Professor in the Faculty of Pharmacy, University of Cagliari.
- 2002 to 2011: Professor of Pharmacology, University of Cagliari, Italy.
- 2012: Professor of Pharmacology of food and food compounds, University of Cagliari, Italy.
- 2002 to 2016 Professor of Pharmacology, for PhD in Toxicology.
- 2012 to 2018 Professor of Essays and Drug Dosages, University of Cagliari, Italy.
- 2019 to 2023 Professor of Toxicology of Environmental and Food Pollutants, University of Cagliari, Italy.
- 2023 to present Professor of Pharmacology of Nutrition University of Cagliari, Italy.
- 1993 to present training and supervision of the students during preparation of the experimental thesis in the Degree courses of Pharmacy and Pharmaceutical Chemistry and Technology of the University of Cagliari, Cagliari.
- 2007 to present tutor of 3 PhD thesis (Dr Paolo Musio: scuola di dottorato in tossicologia Farmacologia e Farmacoterapia delle Tossicodipendenze Ciclo XXIII; Drssa Flavia Cucca: Doctor of Philosophy in Toxicology Pharmacology and Pharmacotherapeutics of Drug Abuse XXVI Cycle; Drssa Annesha Sil: dottorato di ricerca in Neuroscienze Ciclo XXIX)
- 2012 Scientific referee of research projects "Futuro in Ricerca 2012" MIUR (Ministero dell'Istruzione, dell'Universita' e della Ricerca).
- 2017 Fellowship MOSTA (staff mobility) for teaching program academic year 2016-2017.
- 2017 Professor of the monothematic course: "Implications of mesolimbic and mesocortical dopaminergic systems in the responsiveness to food and drugs of abuse" at the "Department of Neurochemistry, Institute of Psychiatry and Neurology" and the "Department of Experimental and Clinical Pharmacology, Medical University", Warsaw, Poland.
- 2023 Fellowship MOSTA (staff mobility) for teaching program academic year 2021-22.

-2023 Professor of the monothematic course: "Mesolimbic dopamine response to food and drugs of abuse consumption: are there any differences?" at the "Dept de Psicologia Basica, Clínica i Psicobiologia", Universidad Jaume I, Castellon de La Plana, Spain.

- 2017 Guest Editor of the Research Topic "Food and Its Effect on the Brain: From Physiological to Compulsive Consumption", *Frontiers in Psychiatry*.

-2021 Review Editor for the Editorial Board of *Frontiers in Behavioral Neuroscience*.

-2022 Guest Editor of the Research Topic "Alcohol and Energy Drinks: Is This a Really Good Mix?", *Frontiers in Behavioral Neuroscience*.

**Referee activity** for international journals as *J. of Neuroscience*, *European J. Neuroscience*, *Journal of Neural Transmission*, *Nicotine & Tobacco Research*, *Frontiers*, *Drug and Alcohol Dependence*, *Behavioural Brain Research*, *Psychopharmacology*, *International Journal of Molecular Sciences*.

#### **Affiliations:**

SINS, Italian Society of Neuroscience

FENS, Federation of European Neuroscience Society

Centre of Excellence "Neurobiology of Drug Dependence", University of Cagliari, Italy.

#### **Principal research topics:**

Role of dopamine in the mechanism of drugs of abuse.

Role of dopamine in the mechanism of natural reward.

Role of dopamine in the mechanism of energy drinks and their effects in the cardiovascular system.

Role of dopamine in the associative learning.

Role of dopamine in Operant behavior for food and drugs of abuse.

Interactions between dopaminergic and orexinergic systems.

#### **Grants**

-Participant in national research projects: PRIN 2003, 2004, 2005.

-2007 Participant in international project: "Adaptive changes of dopamine responsiveness to palatable food: differences between accumbens shell, core and prefrontal cortex". Collaboration with the School of Medicine San Francisco.

-2011 Project granted by Fondazione Banco di Sardegna: Modificazioni dell'apprendimento associativo in un modello sperimentale di dipendenza da etanolo (2011.1047, prot. no. U1140.2013/AI.1059.MGB). Principal investigator.

-2013 Project granted by Regione Sardegna (Bando Legge Regionale 7 agosto 2007, n. 7 promozione della ricerca scientifica e dell'innovazione tecnologica in Sardegna, annualità 2012): "Somministrazione di peptidi orexinerfici incapsulati in nanocarriers per la veicolazione al SNC". (CRP-59764-F71J12000990002) Research Unit Coordinator.

-2017 Project granted by Fondazione di Sardegna "Targeting neuroinflammation in psychiatric diseases: a multidisciplinary approach". Participant

-2021 Project granted by Fondazione di Sardegna "Targeting neurosteroids for neuroprotection in Parkinson's disease". Participant

-2023 PI of the following national research project PRIN-PNRR 2022 "Neurochemical, neuroinflammatory and cardiovascular modifications during Red Bull self-administration, alone or in association with Ethanol, from adolescence to adulthood".

-2024 Co-PI of the following project D-Serine in PD – "Targeting NMDA receptors through Dserine supplementation to potentiate synaptic plasticity and connectivity and counteract motor and non-motor symptoms in an alpha-synuclein over-expression rat model of Parkinson's Disease" , funded by PNRR MUR.

-2025 Member of the Committee for the evaluation and discussion of doctoral thesis for the Doctoral School, Doctoral Programme in Psychology, at the University Jaume I, Castellon de la Plana (Valencia).

### **List of publications:**

1) **V. Bassareo**, G. Tanda, G. Di Chiara: *Increase of extracellular dopamine in the medial prefrontal cortex during spontaneous and naloxone-precipitated opiate abstinence.* Psychopharmacology (1995) 122: 202-205.

2) Gianluigi Tanda, **Valentina Bassareo**, Gaetano Di Chiara: *Mianserin markedly and selectively increases extracellular dopamine in the prefrontal cortex as compares to the nucleus accumbens of the rat.* Psychopharmacology (1996) 123: 127-130.

3) **Valentina Bassareo**, Gianluigi Tanda, Paola Petromilli, Corrado Giua, Gaetano Di Chiara: *Non-psichostimulant drugs of abuse and anxiogenic drugs activate with differential selectivity dopamine*

*transmission in the nucleus accumbens and in the medial prefrontal cortex of the rat.* Psychopharmacology (1996) 124: 293-299.

**4) Valentina Bassareo** and Gaetano Di Chiara: *Differential influence of associative and non-associative learning mechanisms on the responsiveness of prefrontal and accumbal dopamine transmission to food stimuli in rats fed ad libitum.* The Journal of Neuroscience (1997), 17 (2): 851-861.

**5) G. Di Chiara, G. Tanda, V. Bassareo, C. Cadoni:** *The role of dopamine in drug-abuse.* Arquivos de Medicina (1998) 12 (suppl 1): 15-29, ISSN 0871-3413.

**6) G Di Chiara, G Tanda, C Cadoni, E Acquas, V Bassareo** and E Carboni *Homologies and differences in the action of drugs of abuse and conventional reinforcer (food) on dopamine transmission: an interpretative framework of the mechanism of drug dependence.* Catecholamines Bridging basic science with clinical medicine. Advances in Pharmacology. (1998) 42: 983-7.

**7) Valentina Bassareo** and Gaetano Di Chiara: *Differential responsiveness of dopamine transmission to food-stimuli in nucleus accumbens shell/core compartments.* Neuroscience (1999): 637-641.

**8) Valentina Bassareo** and Gaetano Di Chiara: *Modulation of feeding-induced activation of mesolimbic dopamine transmission by appetitive stimuli and its relation to motivational state.* Eur. J Neurosci. (1999). 11 (12): 4389-4397.

**9) G Di Chiara, G Tanda, V Bassareo, F. Pontieri, E. Acquas, S. Fenu, C Cadoni and E. Carboni:** *Drug addiction as a disorder of associative learning Role of Nucleus Accumbens Shell/Extended Amygdala dopamine.* Ann N Y Acad Sci (1999). 877: 461-485.

**10) V Bassareo:** *Non associative learning.* In: The Corsini Encyclopedia of Psychology and Behavioral Science, Third Edition, ed. By W. E. Craighead & C.B. Nemeroff, JHON WILEY & SONS Press, New York, Chichester, Weinheim, Brisbane, Singapore, Toronto, Vol 3 (2000), pp1063-1065.

**11) S. Fenu, V. Bassareo** and G. Di Chiara *A role for dopamine D<sub>1</sub> receptors of the Nucleus Accumbens shell in conditioned taste aversion learning* The Journal of Neuroscience (2001) 21(17): 6897-6904.

**12) V. Bassareo, M.A De Luca and G. Di Chiara** *Differential expression of motivational stimulus properties by dopamine in nucleus accumbens shell versus core and prefrontal cortex.* The Journal of Neuroscience June 1 (2002) 22 (11): 4709-4719.

**13) V. Bassareo, M.A De Luca, M. Aresu, A. Aste, T. Ariu and G. Di Chiara** *Differential adaptive properties of accumbens shell dopamine response to ethanol as a drug and as a motivational stimulus.* The European Journal of Neuroscience (2003): Volume 17, Issue 7, page 1465-1472.

- 14) G. Di Chiara, **V. Bassareo**, S. Fenu, M. A. De Luca, L. Spina, C. Cadoni, E. Acquas, E. Carboni, V Valentini, D Lecca. *Dopamine and drug addiction : the nucleus accumbens shell connection*. Neuropharmacology (2004): 47, 227-241.
- 15) **Bassareo V**, De Luca MA, Di Chiara G (2007) Differential impact of pavlovian drug conditioned stimuli on in vivo dopamine transmission in the rat accumbens shell and core and in the prefrontal cortex. *Psychopharmacology (Berl)*, 191(3): 689-70.
- 16) Di Chiara G, **Bassareo V** (2007) Reward system and addiction: what dopamine does and doesn't do. *Curr Opin Pharmacol*.Feb; 7 (1): 69-76.
- 17) MA De Luca, **V Bassareo** , A Bauer and G Di Chiara (2007) Caffeine and accumbens shell dopamine. *J neurochem*; 103 (1): 157-63.
- 18) **Bassareo V**, Musio P, Di Chiara G. (2011) Reciprocal responsiveness of nucleus accumbens shell and core dopamine to food- and drug-conditioned stimuli. *Psychopharmacology (Berl)*. 214:687–697
- 19) De Luca MA, Bimpisidis Z, **Bassareo V**, Di Chiara G (2011) Influence of morphine sensitization on the responsiveness of mesolimbic and mesocortical dopamine transmission to appetitive and aversive gustatory stimuli. *Psychopharmacology (Berl)* Aug;216(3):345-53.
- 20) Bassareo PP, **Bassareo V**, Manca D, Fanos V, Mercurio G. (2011) An old drug for use in the prevention of sudden infant unexpected death due to vagal hypertonia. *Eur J Pediatr*. Dec;170(12):1569-75.
- 21) **Bassareo V**, Cucca F, Cadoni C, Musio P, Di Chiara G (2013) Differential influence of morphine sensitization on accumbens shell and core dopamine responses to morphine- and food-conditioned stimuli. *Psychopharmacology* 225:697–706.
- 22) Bassareo PP, **Bassareo V**, Iacovidou N, Mercurio G (2014) Antihypertensive therapy in children: differences in medical approach between the United States and Europe. *Curr Med Chem*. 2014;21(27):3121-31. PMID: 24606510.
- 23) **Bassareo V**, Musio P, Cucca F, Lecca D, Frau R, Di Chiara G (2015) Nucleus accumbens shell and core dopamine responsiveness to sucrose in rats: role of response contingency and discriminative/conditioned cues. *European Journal of Neuroscience* 41(6):802-9.
- 24) **Bassareo V**, Cucca F, Frau R, Di Chiara G (2015) Monitoring dopamine transmission in the rat nucleus accumbens shell and core during acquisition of nose-poking for sucrose. *Behav Brain Res*.287:200-6. doi: 10.1016/j.bbr.2015.03.056. Epub 2015 Mar 28.
- 25) Bassareo PP, Mussap M, **Bassareo V**, Flore G, Mercurio G (2015) Nitrgenic system and plasmatic methylarginines: Evidence of their role in the perinatal programming of cardiovascular diseases. *Clin Chim Acta*. 451(Pt A):21-7 doi: 10.1016/j.cca.2015.05.011. Epub 2015 May 22.

- 26) Bassareo V**, Cucca F, Frau R, Di Chiara G (2015) Differential activation of accumbens shell and core dopamine by sucrose reinforcement with nose poking and with lever pressing. *Behav Brain Res.* 294:215-23. doi: 10.1016/j.bbr.2015.08.006. Epub 2015 Aug 11.
- 27) Bassareo V**, Cucca F, Frau R, Di Chiara G (2017) Changes in Dopamine Transmission in the Nucleus Accumbens Shell and Core during Ethanol and Sucrose Self-Administration. *Frontiers in Behav Neurosci Original Research* published: 01 May 2017 doi: 10.3389/fnbeh.2017.00071.
- 28) Bassareo PP**, Cocco D, **Bassareo V**, Bandino S, Mercurio G (2017) Pharmacological treatment of vagal hyperactivity, a rare but potentially fatal cause of sudden cardiac death. *Mini Rev Med Chem.* doi: 10.2174/1389557517666170707102040. [Epub ahead of print].
- 29) Renaud J**, **Bassareo V**, Beaulieu J, Pinna A, Schlich M, Lavoie C, Murtas D, Simola N, Martinoli MG (2018) Dopaminergic neurodegeneration in a rat model of long-term hyperglycemia: preferential degeneration of the nigrostriatal motor pathway. *Neurobiol Aging.* 2018 Sep;69:117-128. doi: 10.1016/j.neurobiolaging.2018.05.010. Epub 2018 May 14.
- 30) Lai F**, Cucca F, Frau R, Corrias F, Schlich M, Caboni P, Fadda AM, **Bassareo V** (2018) Systemic Administration of Orexin A Loaded Liposomes Potentiates Nucleus Accumbens Shell Dopamine Release by Sucrose Feeding. *Front Psychiatry.* Dec 3;9:640. doi: 10.3389/fpsyt.2018.00640. eCollection 2018.
- 31) Bassareo V**, Gambarana C (2019) Editorial: Food and Its Effect on the Brain: From Physiological to Compulsive Consumption. *Front Psychiatry.* 2019 Apr 4;10:209. doi: 10.3389/fpsyt.2019.00209. eCollection 2019. PMID: 31019474 Free PMC Article.
- 32) Bassareo V**, Talani G, Frau R, Porru S, Rosas M, Kasture SB, Peana AT, Loi E, Sanna E, Acquas E (2019) Inhibition of Morphine- and Ethanol-Mediated Stimulation of Mesolimbic Dopamine Neurons by *Withania somnifera*. *Front Neurosci.* 2019 Jun 4;13:545. doi: 10.3389/fnins.2019.00545. eCollection 2019. PMID: 31275092
- 33) Paean AT**, **Bassareo V**, Acquas E (2019) Not Just from Ethanol. Tetrahydroisoquinolinic (TIQ) Derivatives: from Neurotoxicity to Neuroprotection. *Neurotox Res.* 2019 May 2. doi: 10.1007/s12640-019-00051-9. [Epub ahead of print] Review. PMID: 31049880.
- 34) Porru S**, Maccioni R, **Bassareo V**, Peana AT, Salamone JD, Correa M, Acquas E.J (2020) Effects of caffeine on ethanol-elicited place preference, place aversion and ERK phosphorylation in CD-1 mice. *Psychopharmacol.* 24:269881120965892. doi: 10.1177/0269881120965892. Online ahead of print.
- 35) Jadzic D**, **Bassareo V**, Carta AR, Carboni E (2019) Nicotine, cocaine, amphetamine, morphine, and ethanol increase norepinephrine output in the bed nucleus of stria terminalis of freely moving rats. *Addict Biol.* 17: e12864. doi: 10.1111/adb.12864. Online ahead of print. PMID: 31849152.

- 36) Bassareo V**, Frau R, Maccioni R, Caboni P, Manis C, Peana AT, Migheli R, Porru S, Acquas E. (2021) Ethanol-Dependent Synthesis of Salsolinol in the Posterior Ventral Tegmental Area as Key Mechanism of Ethanol's Action on Mesolimbic Dopamine. *Front Neurosci.* 28; 15:675061. doi: 10.3389/fnins.2021.675061. eCollection 2021.
- 37) Maccioni R**, Cottiglia F, Maccioni E, Talani G, Sanna E, **Bassareo V**, Kasture S, Acquas E (2021) The biologically active compound of *Withania somnifera* (L.) Dunal, Docosanyl Ferulate, is endowed with potent anxiolytic properties but devoid of typical benzodiazepine-like side effects. *J of Psychopharmacol.* 35(10):1277-1284. doi: 10.1177/02698811211008588. Epub 2021 May 3.
- 38) Faustini G**, Longhena F, Masato A, **Bassareo V**, Frau R, Klingstedt T, Shirani H, Brembati V, Parrella E, Vezzoli M, Nilsson KPR, Pizzi M, Spillantini MG, Bubacco L, Bellucci A. (2022) Synapsin III gene silencing redeems alpha-synuclein transgenic mice from Parkinson's disease-like phenotype. *Mol Ther.* 14:S1525-0016(22)00021-1. doi: 10.1016/j.ymthe.2022.01.021. Online ahead of print.
- 39) Maccioni R**, Serra M, Marongiu J, Cottiglia F, Maccioni E, **Bassareo V**, Morelli M, Kasture SB, Acquas E. (2022) Effects of docosanyl ferulate, a constituent of *Withania somnifera*, on ethanol- and morphine-elicited conditioned place preference and ERK phosphorylation in the accumbens shell of CD1 mice. *Psychopharmacology* doi: 10.1007/s00213-022-06069-w. Online ahead of print.
- 40) Errico F**, Marino C, Grimaldi M, Nuzzo T, **Bassareo V**, Valsecchi V, Panicucci C, Di Schiavi E, Mazza T, Bruno C, D'Amico A, Carta M, D'Ursi AM, Bertini E, Pellizzoni L, Usiello A. (2022) Nusinersen Induces Disease-Severity-Specific Neurometabolic Effects in Spinal Muscular Atrophy. *Biomolecules.* Oct 6;12(10):1431. doi: 10.3390/biom12101431.
- 41) Migheli R**, Lostia G, Galleri G, Rocchitta G, Serra PA, Campesi I, **Bassareo V**, Acquas E, Peana AT. (2023) New perspective for an old drug: Can naloxone be considered an antioxidant agent? *Biochem Biophys Rep.* 34:101441. doi: 10.1016/j.bbrep.2023.101441. eCollection. PMID: 36875795
- 42) Acquas E**, Dazzi L, Correa M, Salamone JD, **Bassareo V** (2023) Editorial: Alcohol and energy drinks: is this a really good mix? *Front Behav Neurosci.* 17:1213723. doi: 10.3389/fnbeh.2023.1213723. eCollection 2023.PMID: 3732452.
- 43) Serra M**, Di Maio A, **Bassareo V**, Nuzzo T, Errico F, Servillo F, Capasso M, Parekh P, Li Q, Thiolat ML, Bezard E, Calabresi P, Sulzer D, Carta M, Morelli M, Usiello A. (2023) Perturbation of serine enantiomers homeostasis in the striatum of MPTP-lesioned monkeys and mice reflects the extent of dopaminergic midbrain degeneration. *Neurobiol Dis.* 2023 Aug;184:106226. doi: 10.1016/j.nbd.2023.106226. Epub 2023 Jul 13. PMID: 37451474.

- 44)** Maccioni P, Kaczanowska K, Lobina C, Regonini Somenzi L, **Bassareo V**, Gessa GL, Lawrence HR, McDonald P, Colombo G. (2023) Delving into the reducing effects of the GABAB positive allosteric modulator, KK-92A, on alcohol-related behaviors in rats. *Alcohol*. 112:61-70. doi: 10.1016/j.alcohol.2023.07.004. Epub 2023 Jul 24. PMID: 37495087.
- 45)** Dazzi L, Sanna F, Talani G, **Bassareo V**, Biggio F, Follesa P, Pisu MG, Porcu P, Puliga R, Quartu M, Serra M, Serra MP, Sann E, Acquas E. (2023) Binge-like administration of alcohol mixed to energy drinks to male adolescent rats severely impacts on mesocortical dopaminergic function in adulthood: A behavioral, neurochemical and electrophysiological study. *Neuropharmacology*. 10:109786. doi: 10.1016/j.neuropharm.2023.109786. Online ahead of print. PMID: 37952712
- 46)** Valsecchi\* V, Errico\* F, **Bassareo\* V**, Marino\* C, Nuzzo T, Brancaccio P, Laudati G, Casamassa A, Grimaldi M, D'Amico A, Carta M, Bertini E, Pignataro G, D'Ursi AM, Usiello A. (2023) SMN deficiency perturbs monoamine neurotransmitter metabolism in spinal muscular atrophy. *Commun Biol*. 6(1):1155. doi: 10.1038/s42003-023-05543-1. PMID: 37957344
- 47)** Acquas E, Dazzi L, Correa M, Salamone JD, Bassareo V. (2023) Editorial: Alcohol and energy drinks: is this a really good mix? *Front Behav Neurosci*. doi: 10.3389/fnbeh.2023.1213723. eCollection 2023.
- 48)** Biggio F, Talani G, Asuni GP, **Bassareo V**, Boi M, Dazzi L, Pisu MG, Porcu P, Sanna E, Sanna F, Serra M, Serra MP, Siddi C, Acquas E, Follesa P, Quartu M. (2024) Mixing energy drinks and alcohol during adolescence impairs brain function: A study of rat hippocampal plasticity. *Neuropharmacology*. doi: 10.1016/j.neuropharm.2024.109993. Epub 2024 May 11.
- 49)** **Bassareo V**, Maccioni R, Talani G, Zuffa S, El Abiead Y, Lorrain I, Kawamura T, Pantis S, Puliga R, Vargiu R, Lecca D, Enrico P, Peana A, Dazzi L, Dorrestein PC, Sanna PP, Sanna E, Acquas E. (2024) Receptor and metabolic insights on the ability of caffeine to prevent alcohol-induced stimulation of mesolimbic dopamine transmission. *Transl Psychiatry*. 14(1):391. doi: 10.1038/s41398-024-03112-6.

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