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Qualifications & Professional Experience

- 2021 Associate Professor, College of Medicine, Ajman University, Ajman, UAE
- 2019 Assistant Professor, College of Medicine, Ajman University, Ajman, UAE
- 2014 Research Assistant Professor, University of Nebraska-Lincoln, Lincoln, USA
- 2011 Assistant Professor, College of Medicine, United Arab Emirates University, Al Ain, UAE
- 2009 Senior Scientist, Department of Biology, University of Regensburg, Germany
- 2007 Postdoc Fellow, Yale University School of Medicine, New Haven, USA
- 2005 Postdoc Associate, Department of Medicine, University of Fribourg, Switzerland
- 2001 PhD, Department of Medicine, University of Fribourg, Switzerland
- 1998 MSc, Department of Biochemistry, Faculty of Sciences, University Paris XI, France
- 1994 BSc, Faculty of Sciences & Techniques, University Sultan Moulay Slimane, Morocco

Research Interests

The goal of my research is to understand the role of single molecules/genes in complex behaviors related to addiction, depression, anxiety, chronic social stress and autism spectrum disorders. I use molecular genetics and pharmacological methods to connect the biochemical, cellular, and anatomical levels of investigation to complex animal behavior. Of primary interest is the role of microRNAs in brain function and development, as well as sex differences in molecular and circuit-level signaling relevant for behavior. I am also interested in studying the function of microRNAs-regulated genes/proteins which mediate long-term changes in behavior downstream of these non-coding RNAs.

Specialized Terms: Neuroscience; microRNAs; Gene therapy; siRNAs; Molecular basis of behavior; Mouse genetic models; Alcohol; Sex differences

Publications

1. **Bahi A***, Dreyer JL. (2022) Effects of chronic psychosocial stress on 'binge-like' sucrose intake in mice. **Progress in Neuropsychopharmacology & Biological Psychiatry**. 120:110625 (*Corresponding author).
2. **Bahi A***, Dreyer JL. Chronic knockdown of the tetraspanin gene CD81 in the mouse nucleus accumbens modulates anxiety and ethanol-related behaviors. **Physiology and Behavior**. 254:113894 (*Corresponding author).
3. **Bahi A.** (2020) Dopamine transporter gene expression within the nucleus accumbens plays important role in the acquisition and reinstatement of ethanol-seeking behavior in mice. **Behavioural Brain Research**. 381:112475.
4. **Bahi A***, Dreyer JL. (2020) Lentiviral-mediated up-regulation of let-7d microRNA decreases alcohol intake through down-regulating the dopamine D3 receptor. **European Neuropsychopharmacology**. 37:70-81. (*corresponding author).



5. **Bahi A***, Dreyer JL. (2020) Environmental enrichment decreases chronic psychosocial stress-impaired extinction and reinstatement of ethanol conditioned place preference in C57BL/6 male mice. **Psychopharmacology**. 237:707–721. (*corresponding author).
6. **Bahi A***, Dreyer JL. (2019) No effect of sex on ethanol intake and preference after dopamine transporter (DAT) knockdown in adult mice. **Psychopharmacology**. 236:1349–1365. (*corresponding author).
7. **Bahi A***, Dreyer JL. (2019) Dopamine transporter (DAT) knockdown in the nucleus accumbens improves anxiety- and depression-related behaviors in adult mice. **Behavioural Brain Research**. 359:104-115. (*corresponding author).
8. **Bahi A***, Dreyer JL. (2018) Lentiviral-mediated let-7d microRNA overexpression induced anxiolytic- and antidepressant-like behaviors and impaired dopamine D3 receptor expression. **European Neuropsychopharmacology**. 28:1394-1404. (*corresponding author).
9. **Bahi A***, Dreyer JL. (2017) Viral-mediated overexpression of the Myelin Transcription Factor 1 (MyT1) in the dentate gyrus attenuates anxiety- and ethanol-related behaviors in rats. **Psychopharmacology**. 234:1829-1840. (*corresponding author).
10. **Bahi A.** (2017) Environmental enrichment reduces chronic psychosocial stress-induced anxiety and ethanol-related behaviors in mice. **Progress in Neuropsychopharmacology & Biological Psychiatry**. 77:65-74.
11. **Bahi A.** (2017) Decreased anxiety, voluntary ethanol intake and ethanol-induced CPP acquisition following activation of the metabotropic glutamate receptor 8 “mGluR8”. **Pharmacology, Biochemistry and Behavior**. 155:32-42.
12. **Bahi A.** (2017) Hippocampal BDNF overexpression or microR124a silencing reduces anxiety- and autism-like behaviors in rats. **Behavioural Brain Research**. 326:281-290.
13. **Bahi A***, Al Mansouri S, Al Maamari A. (2016) Nucleus accumbens lentiviral-mediated gain of function of the oxytocin receptor regulates anxiety- and ethanol-related behaviors in adult mice. **Physiology & Behavior**. 164:249-258. (*corresponding author).
14. **Bahi A.** (2016) Sustained lentiviral-mediated overexpression of microRNA124a in the dentate gyrus exacerbates anxiety- and autism-like behaviors associated with neonatal isolation. **Behavioural Brain Research**. 311:298-308.
15. **Bahi A***, Sadek B, Nurulain SM, Łażewska D, Kieć-Kononowicz K. (2015) The novel non-imidazole histamine H₃ receptor antagonist DL77 reduces voluntary alcohol intake and ethanol-induced conditioned place preference in mice. **Physiology & Behavior**. 151:189-197. (*corresponding author).
16. **Bahi A.** (2015) The oxytocin receptor impairs ethanol reward in mice. **Physiology & Behavior**. 139:321-327.
17. Pisanu A, Lecca D, Valentini V, **Bahi A**, Dreyer JL, Schifo A, Piras G, Cadoni C, Di Chiara G. (2015) Impairment of acquisition of intravenous cocaine self-administration by RNA-interference of dopamine D1-receptors in the nucleus accumbens shell. **Neuropharmacology**. 89:396-411.
18. **Bahi A***, Nurulain SM, Ojha S. Ethanol intake and ethanol conditioned place preference are reduced in mice treated with the bioflavonoid agent naringin. **Alcohol**. 48:677-685. (*corresponding author).
19. **Bahi A***, Dreyer JL. Lentiviral vector-mediated dopamine D3 receptor modulation in the rat brain impairs alcohol intake and ethanol-induced conditioned place preference. **Alcohol: Clinical & Experimental Research** 38:2369–2376. (*corresponding author).
20. Al Ameri M, Al Mansouri S, Al Maamari A, **Bahi A***. The histone deacetylase (HDAC) inhibitor valproic acid reduces ethanol consumption and ethanol-conditioned place preference in rats. **Brain Research** 1583:122-131. (*corresponding and 1st co-author).
21. Al Maamari A, Al Ameri M, Al Mansouri S, **Bahi A***. Inhibition of urokinase plasminogen activator “uPA” activity alters ethanol consumption and conditioned place preference in mice. **Drug Design, Development & Therapy**. 8:1391-1403. (*corresponding and 1st co-author).
22. Al Mansouri S, Ojha S, Al Maamari E, Al Ameri M, Nurulain SM, **Bahi A***. The cannabinoid receptor 2 agonist, β -Caryophyllene, reduced voluntary alcohol intake and attenuated ethanol-induced place preference and sensitivity in mice. **Pharmacology, Biochemistry and Behavior**. 124:260-268. (*corresponding and 1st co-author).



23. **Bahi A***, Al Mansouri S, Al Maamari E, Al Ameri M, Nurulain SM, Ojha S. β -Caryophyllene, a CB₂ Receptor agonist produces multiple behavioral changes relevant to anxiety and depression in mice. *Physiology & Behavior*. 135:119-124. (*corresponding author).
24. **Bahi A***, Schwed S, Walter M, Stark H, Sadek B. Anxiolytic- and antidepressant-like activities of the novel and potent non-imidazole histamine H₃ receptor antagonist ST-1283. *Drug Design, Development & Therapy*. 8:627-637. (*corresponding author).
25. Vargas-Perez H, **Bahi A**, Bufalino MR, Ting-A-Kee¹ R, Fahmy A, Maal-Bared G, Clarke L, Lam J, Blanchard J, Larsen B, Steffensen S, Dreyer JL, van der Kooy D. BDNF signaling in the VTA links the drug dependent state to drug withdrawal aversions. *The Journal of Neuroscience* 34:7899-7909.
26. **Bahi A***, Chandrasekar V, Dreyer JL. Selective lentiviral-mediated suppression of microRNA124a in the hippocampus evokes antidepressant-like effects in rats. *Psychoneuroendocrinology*. 46:78-87. (*corresponding author).
27. **Bahi A***, Dreyer JL. Chronic psychosocial stress causes delayed extinction and exacerbates reinstatement of ethanol-induced conditioned place-preference in mice. *Psychopharmacology* 231:367-377. (*corresponding author).
28. **Bahi A**. Viral-mediated knockdown of mGluR7 in the nucleus accumbens mediates excessive alcohol drinking and increased ethanol-elicited conditioned place preference in rats. *Neuropsychopharmacology* 38:2109-2119.
29. **Bahi A***, Dreyer JL. Striatal modulation of BDNF expression using MicroRNA124a-expressing lentiviral vectors impairs ethanol- induced conditioned- place preference and voluntary alcohol consumption. *European Journal of Neuroscience* 38:2328-2337. (*corresponding author).
30. **Bahi A**. Increased anxiety, voluntary alcohol consumption and ethanol-induced place preference in mice following chronic psychosocial stress. *Stress* 16:441-451.
31. **Bahi A***, Sadek B, Schwed S, Walter M, Stark H. Influence of the novel histamine H₃ receptor antagonist ST1283 on voluntary alcohol consumption and ethanol-induced place preference in mice. *Psychopharmacology* 228:85-95. (*corresponding author).
32. **Bahi A***, Tolle V, Fehrentz JA, Brunel L, Martinez J, Catherine-Laure Tomasetto CL, Sherif M, Karam MS. Ghrelin knockout mice show decreased voluntary alcohol consumption and reduced ethanol-induced conditioned place preference. *Peptides* 43:48-55. (*corresponding author).
33. Ting-A-Kee¹ R, Vargas-Perez H, Bufalino MR, **Bahi A**, Dreyer JL, Tyndale RF, van der Kooy D. Infusion of brain-derived neurotrophic factor into the ventral tegmental area switches the substrates mediating ethanol motivation. *European Journal of Neuroscience* 37:996-1003.
34. **Bahi A**. Individual differences in elevated plus-maze exploration predicted higher ethanol consumption and preference in outbred mice. *Pharmacology, Biochemistry and Behavior* 105:83-88.
35. Li X, DeJoseph M, Urban J, **Bahi A**, Dreyer JL, Meredith G, Ford K, Ferrario C, Loweth J, Wolf W. Different roles of BDNF in nucleus accumbens core versus shell during the incubation of cue-induced cocaine craving and its long-term maintenance. *The Journal of Neuroscience* 33:1130-1142.
36. **Bahi A***, Dreyer JL. Hippocampus-specific deletion of tissue plasminogen activator 'tPA' in adult mice impairs depression- and anxiety- like behaviors. *European Neuropsychopharmacology* 22:672-682. (*corresponding author).
37. **Bahi A***, Dreyer JL. Involvement of nucleus accumbens dopamine D1 receptors in ethanol drinking, ethanol-induced conditioned place preference, and ethanol-induced psychomotor sensitization in mice. *Psychopharmacology* 222:141-153. (*corresponding author).
38. **Bahi A**. The selective metabotropic glutamate receptor 7 allosteric agonist AMN082 prevents reinstatement of extinguished ethanol-induced conditioned place preference in mice. *Pharmacology, Biochemistry and Behavior* 101:193-200.
39. **Bahi A***, Dreyer JL. Involvement of tissue plasminogen activator 'tPA' in ethanol-induced locomotor sensitization and conditioned-place preference. *Behavioural Brain Research* 226: 250-258. (*corresponding author).



40. **Bahi A***, Fizia K, Dietz M, Gasparini F, Flor PJ. Pharmacological modulation of mGluR7 with AMN082 and MMPIP exerts specific influences on alcohol consumption and preference in rats. **Addiction Biology** 17:235-247. (*corresponding author).
41. Karpova NN, Pickenhagen A, Lindholm J, Tiraboschi E, Kuleshkaya N, Agústsðóttir A, Antila H, Popova D, Akamine Y, **Bahi A**, Sullivan R, Hen R, Drew LJ, Castrén E. Fear erasure in mice requires synergy between antidepressant drugs and extinction training. **Science** 334:1731-1734.
42. Ortiz O, Delgado-Garcia JM, Espadas I, **Bahi A**, Trullas R, Dreyer JL, Gruart A, Moratalla R. Associative learning and CA3-CA1 synaptic plasticity are impaired in D1R null, Drd1a^{-/-} mice and in hippocampal siRNA silenced Drd1a mice. **The Journal of Neuroscience** 30: 12288-12300.
43. Addy NA, **Bahi A**, Taylor JR, Picciotto MR. Administration of the calcineurin inhibitor cyclosporine modulates cocaine-induced locomotor activity in rats. **Psychopharmacology** 200: 129-139.
44. **Bahi A**, Boyer F, Chandrasekar V, Dreyer JL. Role of accumbens BDNF and TrkB in cocaine-induced psychomotor sensitization, conditioned-place preference, and reinstatement in rats. **Psychopharmacology** 199: 169-182.
45. **Bahi A**, Kusnecov AW, Dreyer JL. Effects of urokinase-type plasminogen activator in the acquisition, expression and reinstatement of cocaine-induced conditioned-place preference. **Behavioural Brain Research** 191: 17-25.
46. **Bahi A**, Kusnecov A, Dreyer JL. The role of tissue-type plasminogen activator system in amphetamine-induced conditional place preference extinction and reinstatement. **Neuropsychopharmacology**. 33: 2726-2734.
47. **Bahi A**, Dreyer JL. Overexpression of plasminogen activators in the nucleus accumbens enhances cocaine-amphetamine- and morphine-induced reward and behavioral sensitization. **Genes Brain & Behavior** 7: 244-256.
48. **Bahi A**, Boyer F, Kafri T, Dreyer JL. Silencing urokinase in the ventral tegmental area in vivo induces changes in cocaine-induced hyperlocomotion. **Journal of Neurochemistry** 98: 1619-1631.
49. **Bahi A**, Boyer F, Bussard G, Dreyer JL. Silencing dopamine D3-receptors in the nucleus accumbens shell in vivo induces changes in cocaine-induced hyperlocomotion. **European Journal of Neuroscience** 21: 3415-3426.
50. **Bahi A**, Boyer F, Kolira M, Dreyer JL. In vivo gene silencing of CD81 by lentiviral expression of small interference RNAs suppresses cocaine-induced behaviour. **Journal of Neurochemistry** 92: 1243-1255.
51. **Bahi A**, Dreyer JL. Cocaine-induced expression changes of axon guidance molecules in the adult rat brain. **Molecular & Cellular Neuroscience** 28: 275-291.
52. **Bahi A**, Boyer F, Gumy C, Kafri T, Dreyer JL. In vivo gene delivery of urokinase-type plasminogen activator with regulatable lentivirus induces behavioural changes in chronic cocaine administration. **European Journal of Neuroscience** 20: 3473-3488.
53. **Bahi A**, Boyer F, Kafri T, Dreyer JL. CD81-induced behavioural changes during chronic cocaine administration: in vivo gene delivery with regulatable lentivirus. **European Journal of Neuroscience** 19: 1621-1633.
54. Brenz Verca MS, **Bahi A**, Boyer F, Wagner GC, Dreyer JL. Distribution of alpha- and gamma-synucleins in the adult rat brain and their modification by high-dose cocaine treatment. **European Journal of Neuroscience** 18: 1923-1938.

Courses Taught

- Biochemistry
- Genetics
- Behavioral Neuroscience
- Psychoneuropharmacology

Committees Work

- Research & Ethics Committee, Ajman University, Ajman, UAE



- Curriculum Committee, Ajman University, Ajman, UAE
- Curriculum Task Force on Alignment with 2019 Standards' Ajman University, Ajman, UAE
- Assessment and Continuous Improvement Committees, Ajman University, Ajman, UAE

Honors and Awards

▪ Ajman University Internal Research Grant

- Exploring the role of CD9 loss-of-function in the nucleus accumbens on mood and ethanol-related behaviors (2022; Main applicant; Grant No. 2022-IRG-MED-9)
- Long-term effects of chronic psychosocial stress exposure during adolescence on anxiety and Tramadol responsivity in rodents (2019; Main applicant; Grant No. 2019-IRG-MED-1)

▪ The Emirates National Research Foundation

- The brain metabotropic glutamate receptor 7 and addiction to alcohol (2013; Main applicant; Grant No. 31M082)

▪ The United Arab Emirates University

- Interaction between anxiety and aggression: Role of relevant brain neuropeptides (2014; Main applicant; Grant No. NP/14/10)
- Investigating the role of MicroRNAs in ethanol addiction. Special focus on miRNA-124a (2013; Main applicant; Grant No. NP/13/05)
- The metabotropic glutamate receptor mGluR7 and its effect on alcohol withdrawal symptoms and anxiety (2012; Main applicant; Grant No. NP/12/04)
- The implication of the metabotropic glutamate receptor mGluR7 in alcohol intake and ethanol-conditioned reward (2011; Main applicant; Grant No. NP/11/09)

▪ The German Research Foundation

- Involvement of the brain metabotropic glutamate receptor 7 in alcohol-related physiology and behavior (2009; Main applicant; Grant No. 157-00A/1796)
- The consequences of chronic psychosocial stress on learning, memory and neurogenesis (2010; Co-applicant; Grant No. FL 729/2-1)

▪ The Swiss National Science Foundation

- The role of BDNF in the incubation of cue-induced cocaine craving (2008; Co-applicant; Grant No. IZKOZ2--125777)
- The role of Calcineurin in nicotine addiction (2007; Main applicant; Grant No. PA00A-117453)

Other Contributions and Achievements

Ad Hoc Reviewer for:

- Behavioural Brain Research
- Physiology & Behavior
- Psychopharmacology
- Psychoneuroendocrinology
- Pharmacology, Biochemistry and Behavior