

Curriculum Vitae

Name: Necla Birgöl-Iyison
Address: Boğaziçi University, Dept. Of Molecular Biology and Genetics
34342 Bebek / Istanbul, Turkey
Phone: +90 359 72 84/6627
GSM: 0 533 629 64 45
Date of Birth: 08/01/1967
Place of Birth: Urfa / Turkey
Gender: Female
Nationality: Turkish

EDUCATION

2024-Present	<u>Associated Professor</u> Boğaziçi University, Dept. of Molecular Biology and Genetics, 34342 Bebek / Istanbul, Turkey
2004-2024	<u>Assistant Professor</u> Boğaziçi University, Dept. of Molecular Biology and Genetics, 34342 Bebek / Istanbul, Turkey
2001-2004	<u>Instructor</u> Boğaziçi University, Dept. of Molecular Biology and Genetics, 34342 Bebek / Istanbul, Turkey
2001-2001	<u>Postdoctorial fellow</u> University of Cape Town / Dept. of Genetics, ZA-7701 Rondebosch South-Africa Worked under supervision of Prof. Gaede
1997-2001	PhD Student University of Hamburg, Institut für Zellbiochemie und klinische Neurobiologie, Hamburg Worked under supervision of Prof. Richter
1994-1997	M.Sc. Student, University of Hamburg, Dept. of Molecular Biology, Worked under supervision of Prof. Reski
1989-1993	B.Sc. Student, University of Trakya, Dept. of Biology

AWARDS and SCHOLARSHIPS

2003	EMBO Short Term Fellowship
2001-2001	Scholarship from the National Research Foundation in Cape Town (NRF)

2000-2001	Ph.D. Fellowship from the European Union
1997-2000	Ph.D. Fellowship from the German Research Foundation in Hamburg (Deutsche Forschungs Gemeinschaft)
1995-1996	M.Sc. Scholarship from the University of Hamburg (Auslands-Stipendium)

DISSERTATIONS

P.h.D.	Identifizierung und Charakterisierung des Allatostatin Rezeptors aus <i>Drosophila melanogaster</i> , <i>Periplaneta americana</i> und <i>Carausius morosus</i>
M.Sc.	Untersuchungen transienter Transformanten von <i>Physcomitrella patens</i> (Hedw.) B.S.G.

PUBLICATIONS

- 1) Kübra Kahveci, Mustafa Barbaros Düzgün, Abdullah Emre Atis, Abdullah Yılmaz, Aida Shokraki, Basak Coskun, Serdar Durdagi, **Necla Birgül Iyison**: "Discovering Allatostatin Type-C Receptor Specific Agonists" Nature Communications, accepted
- 2) **Necla Birgül Iyison**, Clauda Abboud, Dayana Abboud....Nina Vardjan et al.: "ERNEST COST Action Overview on the (Patho)Physiology of GPCRs and Orphan GPCRs in the Nervous System" (Review) *British Journal of Pharmacology*, 1–32. <https://doi.org/10.1111/bph.16389>, SCIE
- 3) Ferdows Afghah, **Necla Birgül Iyison**, Ali Nadernezhad, Ahmet Midi, Ozlem Sen, Burcu Saner Okan, Mustafa Culha, and Bahattin Koc:" 3D Fiber Reinforced Hydrogel Scaffolds by Melt Electrowriting and Gel Casting as a Hybrid Design for Wound Healing" *Advanced Healthcare Materials*, 2022, 2102068, doi: 10.1002/adhm.202102068
- 4) Serdar Durdagi, Muge Didem Orhan, Busecan Aksoydan, Seyma Calis, Berna Dogan, Kader Sahin, Aida Shahraki, **Necla Birgül Iyison**, and Timucin Avsar: „Screening of Clinically Approved and Investigation Drugs as Potential Inhibitors of SARS-CoV-2: A Combined in silico and in vitro Study" *Molecular Informatics*, 2021 doi.org/10.1002/minf.202100062
- 5) Aslan T, Yenenler-Kutlu A, Gerlevik U, Aktugülü Zeybek Ac, Kiykim E, Sezerman OU, **Birgül Iyison N**: "Identifying and elucidating the roles of Y198N and Y204F mutations in the PAH enzyme through molecular dynamic simulations." *J Biomol Struct Dyn*. 2021 May 10:1-12. doi: 10.1080/07391102.2021.1921619
- 6) Shahraki, A., Isbilir, A., Dogan, B., Lohse, M.J., Durdagi, S., **Birgül Iyison, N**: "Structural and Functional Characterization of Allatostatin Receptor Type-C of *Thaumetopoea pityocampa*, a Potential Target for Next-Generation Pest Control Agents". *J Chem Inf Model*. 2021 Jan 21. doi: 10.1021/acs.jcim.0c00985

- 7) **Birgöl İyison, N.**, Shahraki, A., Kahveci, K., Duzgun, M.B., Gun, G: "Are Insect GPCRs Ideal Next-Generation Pesticides: Opportunities and Challenges". FEBS J. 2021 Jan 8. doi: 10.1111/febs.15708.
- 8) **Birgöl İyison, N.**, Devlet Kilickap, B., Duan Sahbaz, B., Vardar, B., Guclu, B: "Distribution and mRNA expression of nAChRs in the rat S1 and M1 cortices after electrical stimulation of the basal forebrain". Turkish Neurosurgery, 2021 Jan 07. doi: 10.5137/1019-5149.JTN.31865-20.3
- 9) Isbilir, A., Duan Sahbaz, B., Tuncgenc, G., Bünemann, M., Lohse, M.J., **Birgöl-İyison, N.**: "Pharmacological Characterization of the Stick Insect *Carausius morosus* Allatostatin C Receptor with Its Endogenous Agonist". ACS Omega, 2020 Dec. DOI.10.1021/acsomega.0c03382
- 10) **Necla Birgöl İyison**, Merve Gizem Sinmaz, Burcin Duan Sahbaz, Aida Shahraki, Busecan Aksoydan, Serdar Durdagi: "In silico characterization of adipokinetic hormone receptor and screening for pesticide candidates against stick insect, *Carausius morosus*", Journal of Molecular Graphics and Modelling (2020) 107720, DOI.org/10.1016/j.jmgm.2020.107720
- 11) Aida Shahraki, Yanying Yu, Zeynep Melis Gul, Chunguang Liang, **Necla Birgöl İyison**: "Whole Genome Sequencing of *Thaemtopoea pityocampa* Revealed Putative Pesticide Targets", Genomics 112 (2020) 4203–4207, DOI.org/10.1016/j.ygeno.2020.07.017
- 12) Duan Sahbaz, B., **Birgöl İyison, N.**: Prediction and expression analysis of G protein-coupled receptors in the laboratory stick insect, *Carausius morosus*. Turkish Journal of Biology, 43, 77-88, DOI.10.3906/biy-1809-27, 2019
- 13) İzzet Akiva, **Necla Birgöl İyison**: "Identification of IFITM3 and MGAT1 as novel interaction partners of BRI3 by Yeast Two-Hybrid Screening", Turkish Journal of Biology, DOI.10.3906/biy-1805-47, 2018
- 14) İ. Even, İ. AKİVA, **N. Birgöl İyison**: "In vivo RNAi mini-screen in *Drosophila* cancer model reveals novel potential Wnt targets in liver cancer", Turkish Journal of Gastroenterology, DOI.10.5152/tjg.18241, 2018
- 15) Akiva I. and **N. Birgöl İyison**: MGAT1 is a novel transcriptional target of Wnt/ β catenin signaling pathway BMC Cancer 18:60 DOI.org/10.1186/s12885-017-3960-7, 2018
- 16) Burcin Duan Sahbaz, Osman Ugur Sezerman, Hamdi Torun & **Necla Birgöl İyison**: Ligand binding pocket of a novel Allatostatin receptor type C of stick insect, *Carausius morosus*^[1]. Scientific Reports, 7:41266, DOI: 10.1038/srep41266, 2017
- 17) Ayaz Najafov, Tuncay Şeker, İpek Even, Gerta Hoxhaj, Osman Selvi, Duygu Esen Özel, Ahmet Koman and **Necla Birgöl-İyison**: Wnt/beta-Catenin pathway regulates transcription of actin-regulatory protein MENA, PLoS ONE, Volume 7, Issue 5, e37013, DOI:10.1371/journal.pone.0037013, 2012
- 18) Kavak E., Najafov A., Ozturk N., Seker T., Cavusoglu K., Aslan T., Duru A.D., Saygili T., Hoxhaj G., Hiz M.C., Ozer-Unal D., **Birgöl-İyison N.**, Ozturk M., Koman A. „Analysis of the Wnt/B-catenin/TCF4 pathway using SAGE, genome-wide microarray and promoter

analysis: Identification of BRI3 and HSF2 as novel targets" ^[1]Cellular Signalling, Vol. 22, pp. 1523-1535 DOI:10.1016/j.cellsig.2010.05.021, 2010

19) Isler C., Tanriverdi T, Kavak E., Sanus G.Z., Ulu M.O., Erkanlı G., Koman A., **Birgül-Iyison N.**, Uzan M. "Prenatal Expressions of Hyperpolarization Cyclic-Nucleotide-Gated Channel (HCN) Genes in Dysplastic Hippocampi in Rats", Turkish Neurosurgery 2008, Vol:18, No.4, 327-335. (PMID:19107678)

20) Kreienkamp HJ, Larusson HJ, Witte I, Roeder T, **Birgul N**, Honck HH, Harder S, Ellinghausen G, Buck F, Richter D. "Functional annotation of two orphan G-protein-coupled receptors, Drostar1 and -2, from Drosophila melanogaster and their ligands by reverse pharmacology". J Biol Chem. 2002 Oct 18;277(42):39937-43. Epub 2002 Aug 6. DOI:10.1074/jbc.M206931200

21) Auerswald L, **Birgul N**, Gade G, Kreienkamp HJ, Richter D. "Structural, functional, and evolutionary characterization of novel members of the allatostatin receptor family from insects". Biochem Biophys Res Commun. 2001 Apr13;282(4):904-9. DOI:10.1006/bbrc.2001.4659

22) **Birgul N**, Weise C, Kreienkamp HJ, Richter D."Reverse physiology in drosophila: identification of a novel allatostatin-like neuropeptide and its cognate receptor structurally related to the mammalian somatostatin/galanin/opioid receptor family". EMBOJ:18(21):5892–5900. DOI:10.1093/emboj/18.21.5892,1999TEACHING EXPERIENCE

Supervision of M.Sc. and P.hD. students (currently 5 PhD and 1 MSc students). Departmental undergraduate lectures such as General Biology 101, 103, 104, Bio 492 Special Project, and Bio 493 (Signaling and Cancer), Bio 48F (Drug Design) Departmental graduate lectures such as Bio 501 (Advanced Molecular Biology).

MEMBERSHIP

- 1) Molecular Biology Association Turkey(Moleküler Biyoloji Derneği Türkiye, Molbiyoturk)
- 2) Molecular Cancer Research Association (MOKAD, Moleküler Kanser Araştırma Derneği)
- 3) Cell Death Research Society (HÖAD, Hücre Ölümü araştırma Derneği)
- 4) European Association for Cancer Research (EACR)
- 5) Turkish Histology and Embryology Association (Türk Histoloji ve Embriyoloji Derneği)

PROJECTS

Tübitak (The Scientific and Technological Research Council of Turkey):

- 1) Tübitak122Z988 / Functional Characterization of Orphan GPCR GPR141 / Project leader
- 2) Tübitak -19Z921 / Designing of pesticide molecules targeting allatostatin receptor / Project leader
- 3) Tübitak–116S627 / Treatment of phenylketonuria in model organisms using CRISPR/Cas9 gene editing tool / Project leader
- 4) Tübitak-213M730 / Generation of multifunctional matrices by three-dimensional electrohydrodynamic and coaxial bioadhesive methods for skin regeneration / Project leader
- 5) Tübitak-113Z079 / Identification, docking analysis and atomic force microscopy verification of binding pocket of allatostatin receptor in *Cararusius morosus* / Project leader
- 6) Tübitak-211T182 / Examination of the transcriptional target of Wnt/B-catenin/TCF4 signaling pathway, C17orf45, on protein level / Project leader
- 7) FP7-REGPOT 2009-1 / Strengthening the research capacity of Bogazici University MBG (Istanbul) through local initiatives and translational interactions / Project team.
- 8) Tübitak-108T183 / Identification of novel molecules which interact with Bri3 and Cnn3 by using yeast two hybrid system / Project leader
- 9) Tübitak-107S124 / Prenatal expressions of hyperpolarization-activated cyclic-nucleotide-gated channel (HCN) genes in dysplastic hippocampi in rats / Project leader
- 10) Tübitak-106T153 / Functional characterization of genes associated to cancer development through transcriptome analysis / Project team

BAP (Bogazici University Research Fund):

- 1) BAP-19770 / In vitro testing of the putative allosteric ligands for the pine processionary AlstR C receptor / Project leader
- 2) BAP 19701 / Cloning and purification of CARTp protein / Project leader
- 3) BAP-16781 / Observing the function of GPR139 in adult mice by ablation via AVV/CRISPR-Cas9 System / Project leader
- 4) BAP-16464 / Investigation of the mechanism of Cry toxins in Asian Mosquito / Project leader
- 5) BAP 14502 / Characterisation of GPR139 and investigation its possible role in brain development / Project leader

- 6) BAP-13123 Verification of the RNA-Seq. data of Wnt/beta Catenin target BRI3 and MGAT / Project leader
- 7) BAP-12282 Generation and Analysis of the Neuropeptidome of *Carausius morosus* / Project leader
- 8) BAP- Analysis of the Wnt/beta Catenin target BRI3 and MGAT at transcriptomic level / Project leader
- 9) BAP-11480 Mutational screening of Phenylhydroxylase in Turkish Phenylketonuria patient / Project leader
- 10) BAP-8241 Effects of AlstR/AST combination in tumorigenesis / Project leader
- 11) BAP-6734 *In Vivo* analysis of the effects of novel wnt/beta-catenin targets on cancer development / Project leader
- 12) BAP-6657 Analysis of foxo transcription factor activities and GAD45 after lithium treatment of hepatocellular carcinoma cell lines / Project leader
- 13) BAP-5043 Analysis of the signal transduction pathway of *Carausius morosus* / Project leader
- 14) BAP-1876 / Identification of novel molecules interacting with MGC 4057 by using yeast two hybrid system / Project leader
- 15) BAP-873 / Identification of novel molecules interacting with Bri3 by using yeast two hybrid system / Project leader
- 16) BAP-764 / Expressions analysis of hyperpolarization-activated Cyclic-Nucleotide-Gated Channel (HCN) genes in epileptic patients / Project leader
- 17) BAP-319 / Molecular cloning of the full-length cDNA of the somatostatin-like G-Protein coupled receptor in *Carausius morosus* / Project leader
- 18) BAP-221 / Molecular cloning of the full-length cDNA of a allatostatin receptor, which is a G-Protein coupled receptor in *Carausius morosus* / Project leader

ORGANIZED CONGRESSES (International)

- 1) 2nd ERNEST Meeting in Istanbul / COST CA 18133 / 28-31 March 2020, Bogazici University, Istanbul-Turkey (~ 150 participants)
- 2) 2nd International Congress of the Molecular Biology Association of Turkey 22-23 November 2013, Istanbul Technical University, Istanbul-Turkey (~ 450 participants)

- 3) 1st International Congress of the Molecular Biology Association of Turkey 23-24 November 2012, Bogazici University, Istanbul-Turkey (~ 400 participants)
- 4) Istanbul: Ideas and Initiatives; Advances in Immunology and Cancer Biology, 15-17 April 2011, Bogazici University, Istanbul-Turkey (~ 350 participants)