

Burak Tan
Assoc. Prof.



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Personal Information

- **Name - Surname:** Burak Tan.
- **Date of Birth:** July 14, 1988.
- **Place of Birth:** KONYA / TURKEY

Brief Research Story

Unraveling the Synaptic and Molecular Orchestration of Cognitive Flexibility

The Core Mission

My research career is dedicated to deciphering the complex interplay between molecular signaling cascades and system-level neurophysiology in the mammalian hippocampus. Specifically, I bridge the gap between microscopic cellular changes—such as epitope-specific protein phosphorylation and kinase activities—and macroscopic neural outcomes like synaptic plasticity, metaplasticity, and cognitive behaviors.

Phase I: Thyroid Dyshomeostasis, MAPKs, and Early Plasticity Foundations (2015–2021)

In the early stages of my academic journey, I extensively investigated how metabolic and endocrine disruptions, particularly thyroid hormone imbalances, reshape the brain's functional landscape. Utilizing *in vivo* electrophysiology (LTP/LTD) and spatial memory paradigms, my work demonstrated that adult-onset hyperthyroidism and hypothyroidism significantly alter synaptic strength and compromise cognitive flexibility. During this phase, I identified that these synaptic impairments are heavily driven by the dysregulation of Mitogen-Activated Protein Kinase (MAPK) pathways (including p38 MAPK and ERK1/2) and changes in NMDA receptor subunit compositions (such as the GluN2B-to-GluN2A shift).

Phase II: The Tau Epitope Transition and Kinase Dynamics (2019–2024)

As my research evolved, I shifted my focus toward the molecular hallmarks of neurodegeneration, establishing a critical link between everyday synaptic plasticity and Tau pathology. I investigated how different frequencies of synaptic stimulation (HFS vs. LFS) and behavioral modifications trigger site-specific Tau phosphorylation. My publications during this period highlighted that physiological phenomena like depotentiation and long-term depression (LTD) are accompanied by distinct, epitope-specific Tau hyper- and hypophosphorylation patterns. This work repositioned Tau not just as a structural protein, but as a dynamic player intimately regulated by plasticity-related kinases and phosphatases.

Phase III: The Akt/GSK3beta Axis and Translational Neuroprotection (2024–Present)

Currently, my laboratory focuses on therapeutic interventions targeting the Akt/Glycogen Synthase Kinase-3 beta (GSK3beta) signaling cascade—a pivotal hub connecting metabolic homeostasis, Tauopathies, and neuronal survival. Our recent breakthroughs demonstrate that activating the Akt pathway (via the small-molecule activator SC79) successfully rescues impaired subsequent LTP and halts cognitive deficits in models of neurotoxicity and endocrine distress. Concurrently, my ongoing research explores how SIRT1 activation modulates synaptic and neuronal plasticity deficits, establishing a robust translational framework aimed at reversing cognitive decline and metaplasticity disorders.

Methodological Convergence

What defines my research strategy is its multilevel integrative nature:

- **Systemic Outputs:** *In vivo* electrophysiology (LTP, LTD, and frequency-dependent priming/metaplasticity) coupled with comprehensive behavioral testing (Morris Water Maze, Y-Maze, 3-Chamber test).
- **Mechanistic Validation:** State-of-the-art molecular biology techniques (Western Blot, qRT-PCR, cell culture, and immunofluorescence) to validate upstream enzymatic alterations directly responsible for the observed neural phenotypes.

Professional Experience

- **Research Assistant:** Faculty of Medicine, Department of Physiology (2012 – 2021).
- **Assistant Professor (Asst. Prof.):** Faculty of Medicine, Department of Physiology (2021 – 2025).
- **Associate Professor (Assoc. Prof.):** Faculty of Medicine, Department of Physiology (2025 – Present).

Education

- **Ph.D.:** Erciyes University, Faculty of Medicine, Department of Physiology (2015 – 2019).
- **M.Sc.:** Erciyes University, Faculty of Medicine, Department of Physiology (2012 – 2015).

- **B.Sc.:** Dumlupınar University, Faculty of Arts and Sciences, Department of Biology (2008 – 2012).

International Experience

- Molecular Biology Techniques, Neurobiology, Centro de Investigacion Principe Felipe, Valencia/Spain (2015 – 2 months). - Erasmus Plus Internship Mobility.

Language and Laboratory Skills

- **Languages:** English (C1 Advanced).
- **Laboratory Experience:**
 - **Electrophysiology:** In vivo LTP, LTD, DP, and MP.
 - **Behavioral Tests:** Morris Water Maze, Y-Maze, 3-Chamber test, Open Field Maze.
 - **Molecular Biology:** Cell Culture (SH-SY5Y and HT22 Cell line) , Western Blot, qRT-PCR, ELISA, Immunohistochemistry, Immunofluorescence.

Certificates and Training

- Molecular Cell Biology Techniques, TÜBİTAK Marmara Research Center (2014).
- Experimental Animal Use Certificate, Erciyes University/DEKAM (2013).
- Pedagogical Formation Certificate, Dumlupınar University (2012).

Research Projects

TÜBİTAK

- **TÜBİTAK 3501 (Researcher):** Investigation of the Effects of Methylphenidate on the Hippocampal Glutamatergic System and Cognitive Functions in an Experimental Fetal Alcohol Spectrum Disorder Model (2026–Present).
- **TÜBİTAK 3501 (Principal Investigator):** Investigation of the effects of SIRT1 activator on synaptic and neuronal plasticity disorders in a corticosterone-induced experimental depression model (2024–Present).
- **TÜBİTAK 1002 (Principal Investigator):** The role of Akt enzyme in the effect of intrahippocampally applied thyroid hormone derivatives on metaplasticity disorders in experimental hypothyroidism (2021–2022).
- **TÜBİTAK 1001 (Researcher):** Importance of insulin homeostasis in the metaplastic regulation of hippocampal synaptic strength (2021–Present).

Erciyes University – Scientific Research Projects (BAP)

1. Dursun N., Babur E., Günaydın Türker B., Yaylalı O., Taşyürek C., **Tan B.**, Investigation of mGluR1/5 Dependent Synaptic and Structural Plasticity-Related Proteins in Control and VPA-Induced Autism Model Rats, 2024 – Ongoing, (Role: Researcher)

2. **Tan B.**, Suluhan S. N., Investigation of the effect of Akt activator SC79 on learning and memory performance in glutamate excitotoxicity in rats, 2023 – Ongoing, (Role: Principal Investigator)
3. **Tan B.**, Koşar B., Yaylalı O., Günaydın Türker B., Dursun N., Suluhan S. N., Bayraktar E. E., Investigation of the neuroprotective effect of Akt activator SC79 in the hippocampus of rats with induced glutamate excitotoxicity, 2023 – Ongoing, (Role: Principal Investigator)
4. Cantürk Tan F., Barlak Ketı D., **Tan B.**, Varol S., Tur K., Sarılar A. Ç., Daşdağ S., Uçar S., Yay A. H., Therapeutic effect of extremely low-frequency electromagnetic fields in mice with induced Parkinson's model (ADEP), 2023 – Ongoing, (Role: Researcher)
5. **Tan B.**, Yaylalı O., Günaydın Türker B., Dursun N., Investigation of the protective effect of Akt activator SC79 on glutamate toxicity in HT22 hippocampal cell line, 2023 – 2024, (Role: Principal Investigator)
6. **Tan B.**, Dursun N., Investigation of the Activities of Protein Kinases and Phosphatases Involved in the Inhibition of Post-Metaplastic Long-Term Potentiation, 2022 – 2023, (Role: Principal Investigator)
7. Canöz Ö., Dursun N., Süer C., **Tan B.**, Investigation of the effects of high fructose corn syrup on hippocampal neurogenesis and metaplasticity, 2020 – 2025, (Role: Researcher)
8. Süer C., Dursun N., **Tan B.**, Koşar B., Effect of the Glycogen Synthase Kinase-3 (GSK-3) pathway, controlled by synaptic plasticity and metaplasticity, on neurodegenerative protein-related gene expression, 2020 – 2021, (Role: Researcher)
9. **Tan B.**, Dursun N., Investigation of the phosphorylation levels of Tau protein epitopes at different levels of synaptic plasticity and the role of potentially related protein kinases, 2020 – 2021, (Role: Principal Investigator)
10. Dursun N., Süer C., Cantürk Tan F., **Tan B.**, Delibaş S., Koşar B., The role of Akt enzyme in the effect of intrahippocampally administered thyroid hormone derivatives on metaplastic impairment induced by hypothyroidism, 2020 – 2022, (Role: Researcher)
11. Süer C., Babur E., **Tan B.**, Dursun N., Comparison of the effects of different MAPK inhibitors on long-term potentiation, inhibition, and depotentiation responses, 2018 – 2020, (Role: Researcher)
12. Cantürk Tan F., **Tan B.**, Uçar S., Karamazı Y., Yalçın B., Daşdağ S., Yay A. H., Effect of electromagnetic fields on the reproduction and development of rats: A 3-generation study, 2017 – 2020, (Role: Researcher)
13. Süer C., **Tan B.**, Investigation of Metaplasticity Responses and Signaling Pathways in the Hippocampus of Hypothyroid and Hyperthyroid Model Rats, 2017 – 2019, (Role: Researcher)
14. Dursun N., **Tan B.**, Altuntaş H., Babur E., Bayar Y., Bakkaloğlu U., Özdoğan K., Süer C., Investigation of Age-Dependent Decrease in Synaptic Plasticity Strength and the Effect of Selenium Supplementation in Hypothyroid Rats, 2016 – 2019, (Role: Researcher)
15. Dursun N., Süer C., Babur E., Bakkaloğlu U., **Tan B.**, Effect of sodium selenite and seleno-L-methionine on synaptic plasticity and neurogenesis impaired by hypothyroidism, 2016 – 2018, (Role: Researcher)
16. Dursun N., Süer C., **Tan B.**, Babur E., Bayar Y., Kurt Tokpınar R., Comparison of Learning Performance in Aged Hypothyroid and Hyperthyroid Rats, 2016 – 2017, (Role: Researcher)

17. Dursun N., Bayar Y., **Tan B.**, Effect of Thyroid Hormones T3 and T4 on Depotentiation of High-Frequency Stimulation-Induced Synaptic Plasticity, 2015 – 2017, (Role: Researcher)
18. Dursun N., Özdemir H., Babur E., Bayar Y., **Tan B.**, Özdoğan K., Evaluation of ischemia-reperfusion injury in the hypertrophied rat heart induced by hyperthyroidism, 2015 – 2016, (Role: Researcher)
19. Dursun N., Erol E., Özdoğan K., Batakçı M., Süer C., Bitiktaş S., **Tan B.**, Özdemir H., Investigation of the Effect of Selenium on Spatial Learning Performance, 2014 – 2016, (Role: Researcher)
20. Aşçıoğlu M., Bitiktaş S., Yousef M., Süer C., **Tan B.**, Evaluation of Spatial Learning and Memory Performance in the Offspring of Hyperthyroid Rats, 2014 – 2015, (Role: Researcher)
21. Dursun N., Erol E., Süer C., Özdoğan K., Özdemir H., Bitiktaş S., Kurt R., **Tan B.**, Batakçı M., Effect of Selenium on Learning/Memory Impairment Induced by 6-N-Propyl-2-Thiouracil (PTU) in Rats, 2014 – 2015, (Role: Researcher)

List of Publications (SCI/SCI-Expanded Indexed Journals)

1. Ferhat Pektaş, Kübra Tuğçe Kalkan, Ekin Çelik, Abdullah Oklaz, Mustafa Ağca, **Burak Tan.** Effect of monosodium glutamate-induced obesity on anxiety-like behavior and the possible protective role of L-carnitine. *Physiol Behav.* 2026 Apr 14;312:115344.
2. Süer C, **Tan B.**, Dursun N, Koşar B, Babur E., Site-Specific Regulation of Tau phosphorylation by MAPK pathways during HFS-Induced synaptic plasticity in the Rat hippocampus. *Neurosci Lett.* 2025.
3. Pektaş F., Dursun N., **Tan B.**, **Yaylalı O.**, **Babur E.**, **Süer C.**, Ameliorative Effect of Curcumin on Long-Term Potentiation Impaired in Adult-Onset Hypothyroidism, *Neurochemical Journal.* 2025 19;81–91.
4. **Tan B.**, Koşar B., Günaydır Türker B., Yaylalı O., Suluhan S. N., Süer C., Dursun N., Akt activator SC79 prevents impaired subsequent LTP in the hippocampus of hypothyroid rats, *Exp Brain Res.* 2025 Mar 3;243(4):83.
5. **Tan B.**, Tufan E., Barutçu Ö., Aslan Gülpınar E., Dursun N., Süer C., Phosphorylation of tau protein based on the activity of kinases and phosphatases in various forms of synaptic plasticity, *Physiol Int.* 2024 Mar 4;111(1):97-123.
6. Barutçu Ö., Süer C., Dursun N., Tufan E., Aslan Gülpınar E., **Tan B.**, Insulin-induced long-term potentiation in the dentate gyrus of hippocampal formation, 2023.
7. **Tan B.**, Canturk Tan F., Yalcin B., Dasdag S., Yegin K., Yay AH., Changes in the histopathology and in the proteins related to the MAPK pathway in the brains of rats exposed to pre and postnatal radiofrequency radiation over four generations, 2022.
8. **Tan B.**, Yaşar A., Boz F., Dursun N., Süer C., Sex-related differences in somatic plasticity and possible role of ERK1/2: An in-vivo study of young-adult rats, *Physiology & Behavior*, 2022.
9. **Tan B.**, Babur E., Toy N., Günaydın B., Dursun N., Süer C., Tau protein is differentially phosphorylated in young- and old-aged rats with experimentally induced hyperthyroidism, *International Journal of Developmental Neuroscience*, 2022.

10. Cantürk Tan F., Yalçın B., Yay A. H., **Tan B.**, Yeğin K., Daşdağ S., Effects of pre and postnatal 2450 MHz continuous wave (CW) radiofrequency radiation on thymus: Four generation exposure, *Electromagnetic Biology and Medicine*, 2022.
11. Babur E., Tufan E., Barutçu Ö., Alsan-Gülpınar E., **Tan B.**, Süer C., Dursun N., Neurodegeneration-related genes are differentially expressed in middle-aged rats compared to young-adult rats having equal performance on long-term memory and synaptic plasticity, *Brain Research Bulletin*, 2022.
12. **Tan B.**, Dursun N., Süer C., Comparison of the subsequent LTP in hippocampal synapses primed by low frequency stimulations ranging from 0.5 to 5 Hz: An in vivo study, *Neuroscience Letters*, 2022.
13. Saray H., Süer C., Koşar B., **Tan B.**, Dursun N., Rho-associated kinases contribute to the regulation of tau phosphorylation and amyloid metabolism during neuronal plasticity, *Pharmacological Reports*, 2021.
14. Süer C., Yildiz N., Barutcu O., **Tan B.**, Dursun N., Long-term depression-related tau phosphorylation is enhanced by methylene blue in healthy rat hippocampus, *Pharmacological Reports*, 2021.
15. **Tan B.**, Alsan-Gulpınar E., Dursun N., Süer C., N-methyl-d-aspartate receptor blockade reduces plasticity-related tau expression and phosphorylation of tau at Ser416 residue but not Thr231 residue, *Experimental Brain Research*, 2021.
16. **Tan B.**, Babur E., Aşcıoğlu M., Süer C., Effect of L-thyroxine administration on long-term potentiation and accompanying mitogen-activated protein kinases in rats, *International Journal of Developmental Neuroscience*, 2021.
17. **Tan B.**, Bakkaloglu U., Ascioğlu M., Süer C., Maternal l-thyroxine treatment during lactation affects learning and anxiety-like behaviors but not spatial memory in adult rat progeny, *Pharmacological Reports*, 2021.
18. Babur E., Canöz Ö., **Tan B.**, Süer C., Dursun N., Effect of sodium selenite on synaptic plasticity and neurogenesis impaired by hypothyroidism, *International Journal of Neuroscience*, 2020.
19. Yousef M., Babür E., Delibaş S., **Tan B.**, Çimen A., Dursun N., Süer C., Adult-Onset Hypothyroidism Alters the Metaplastic Properties of Dentate Granule Cells by Decreasing Akt Phosphorylation, *Journal of Molecular Neuroscience*, 2019.
20. Babur E., **Tan B.**, Delibaş S., Yousef M., Dursun N., Süer C., Depotentiation of Long-Term Potentiation Is Associated with Epitope-Specific Tau Hyper-/Hypophosphorylation in the Hippocampus of Adult Rats, *Journal of Molecular Neuroscience*, 2019.
21. Babur E., **Tan B.**, Yousef M., Cinbaş S., Süer C., Dursun N., Deficiency but Not Supplementation of Selenium Impairs the Hippocampal Long-Term Potentiation and Hippocampus-Dependent Learning, *Biological Trace Element Research*, 2019.
22. **Tan B.**, Babur E., Koşar B., Varol S., Dursun N., Süer C., Age-dependent evaluation of long-term depression responses in hyperthyroid rats: Possible roles of oxidative intracellular redox status, *Brain Research*, 2019.
23. Halis H., Bitiktaş S., Baştuğ O., **Tan B.**, Kavraal Ş., Güneş T., Süer C., Differential Effects of Pentoxifylline on Learning and Memory Impairment Induced by Hypoxic-Ischemic Brain Injury in Rats, *Clinical Psychopharmacology and Neuroscience*, 2018.
24. Bitiktaş S., **Tan B.**, Kavraal Ş., Yousef M., Bayar Y., Dursun N., Süer C., The effects of intra-hippocampal L-thyroxine infusion on long-term potentiation and long-term

depression: A possible role for the $\alpha\beta 3$ integrin receptor, *Journal of Neuroscience Research*, 2017.

25. Bitiktas S., Kandemir B., **Tan B.**, Kavraal S., Liman N., Dursun N., Donmez-Altuntas H., Aksan-Kurnaz I., Suer C., Adult-onset hyperthyroidism impairs spatial learning: possible involvement of mitogen-activated protein kinase signaling pathways, *NeuroReport*, 2016.
26. Bitiktas S., **Tan B.**, Batakçı M., Kavraal S., Dursun N., Suer C., Effects of selenium treatment on 6-n-propyl-2-thiouracil-induced impairment of long-term potentiation, *Neuroscience Research*, 2016.
27. **Tan B.**, Bitiktas S., Kavraal S., Dursun N., Donmez Altuntas H., Suer C., Low-frequency stimulation induces a durable long-term depression in young adult hyperthyroid rats: the role of p38 mitogen-activated protein kinase and protein phosphatase 1, *NeuroReport*, 2016.
28. Ulusoy H. B., Sonmez M. F., Kılıç E., Caliskan K., Karaca B., Kara M., Ercal O., Gunduz Y., Karabulut D., Bitiktas S., **Tan B.**, et al., Intraperitoneal Administration of Low Dose Aluminium in The Rat: How Good is It to Produce a Model for Alzheimer Disease, *Archives Italiennes de Biologie*, 2015.

Articles Published in Other Journals

1. Durukan Sabahat Melike, Arslan Soley, **Tan Burak**, Tufan Esra. Acetylation Pattern and Cytokine Secretion in Teeth with Deep Dentine Caries. *Journal of Dental Research and Practice*, Vol.5, Issue 3, 1-5.
2. Dursun N., Bayar Y., **Tan B.**, Süer C., Altuntaş. Sex Differences in Hippocampal Long-Term Depression and the N-Methyl-DAspartate Receptor in Rats - Positive Correlation between LTD and Glun2b Subunit. H. *Journal of Neurology and Neuroscience*, cilt.9, no.267, ss.1-10, 2018 (ESCI Indexed)

Publications in National Peer-Reviewed Journals

1. Koşar B., **Tan B.**, Altunkaya M., Süer C., Dursun N., Effect of selenium on learning and memory performance impaired by 6-n-propyl-2-thiouracil in rats, *Mersin University Journal of Health Sciences*, 2022.
2. **Tan B.**, Babur E., Bakkaloğlu U., Çimen A., Süer C., Aşçıoğlu M., Effect of Selenium on Learning Impairment Secondary to Maternal Hyperthyroidism Induced During Lactation, *Ahi Evran Medical Journal*, 2022.
3. **Tan B.**, Babur E., Süer C., Dursun N., Effect of Thyroid Hormones on the Depotentiation of Synaptic Strength Triggered by High-Frequency Stimulation, *Journal of General Medicine (Genel Tıp Dergisi)*, 2021.
4. **Tan B.**, Babur E., Güler A. D., Süer C., Dursun N., Effect of T4 Infused into the Dentate Gyrus on Long-Term Potentiation Responses and the Role of Mitogen-Activated Protein Kinase, *Journal of General Medicine (Genel Tıp Dergisi)*, 2020.
5. **Tan B.**, Babur E., Örnek H. F., Süer C., Dursun N., Effect of gender on spatial learning performance in hyperthyroid rats, *Journal of General Medicine (Genel Tıp Dergisi)*, 2018.

6. Babur E., **Tan B.**, Yıldız N., Batakçı M., Süer C., Dursun N., Sex-Dependent Differences in Spatial Learning Performance in Hypothyroid Rats, *Journal of Health Sciences (Sağlık Bilimleri Dergisi)*, 2017.

Conference Presentations

I. International Conference Presentations

1. **Tan B.**, Barutçu Ö., Babur E., Süer C., Dursun N., "Investigation of Age-Dependent Changes in Hippocampal Long-Term Depression Related Tau Phosphorylation", *4th International Congress of Turkish Neuroendocrinology Society*, Istanbul, Turkey, 2020. (Poster)
2. Barutçu Ö., **Tan B.**, Dursun N., Süer C., "Investigation of Age-Dependent Changes in Hippocampal Long-Term Potentiation Related Tau Phosphorylation", *4th International Congress of Turkish Neuroendocrinology Society*, Istanbul, Turkey, 2020. (Poster)
3. Saray H., Dursun N., Süer C., **Tan B.**, "Effect of the Inhibition of Rock Signaling on the Hippocampal Metaplasticity", *4th International Congress of Turkish Neuroendocrinology Society*, Istanbul, Turkey, 2020. (Poster)
4. Cantürk Tan F., Daşdağ S., Önder G. Ö., Yalçın B., Yay A. H., İlhan O. Ç., Gençaslan M. A., **Tan B.**, "Enzymatic and histopathological changes in rat liver exposed to prenatal radiofrequency electromagnetic field: 3 generations", *Proceedings of UNESCO/UNITWIN Network Web Seminar 2020*, Virtual, 2020. (Oral)
5. Cantürk Tan F., Uçar S., Karamazı Y., Yalçın B., **Tan B.**, Daşdağ S., Yay A. H., "The Effects on Ossification of Prenatal Exposure to Radiofrequency Radiation: 3-Generation Study", *5th International Ahi Evran Medicine and Health Science Congress*, Kırşehir, Turkey, 2019. (Oral)
6. Bakkaloğlu U., Babur E., **Tan B.**, Yazgan K., Yalçın B., Yay A. H., Gölgeli A., "The effect of agomelatine on pain threshold and neurogenesis in depressed male rats", *17th Turkish Neuroscience Congress (International Participation)*, Trabzon, Turkey, 2019. (Poster)
7. Cantürk Tan F., Önder G. Ö., **Tan B.**, Karamazı Y., Yay A. H., Daşdağ S., Yalçın B., "Teratogenic effects of exposure to radiofrequency-electromagnetic field on histopathological and on hippocampal levels of MAPKs on rats brain", *44th National Physiology Congress (International Participation)*, Antalya, Turkey, 2018. (Oral)
8. Cantürk Tan F., Korkmaz G. Ö., **Tan B.**, Daşdağ S., Yay A. H., "Histopathological and hippocampal changes in the brain of rat pups exposed to electromagnetic fields", *16th National Neuroscience Congress (International Participation)*, Istanbul, Turkey, 2018. (Oral)
9. Karamazı Y., Cantürk Tan F., Uçar S., Daşdağ S., Yalçın B., **Tan B.**, "2450 MHz electromagnetic field increases ossification in rat fetus", *International Congress on Sports, Anthropology, Nutrition, Anatomy and Radiology (SANAR2018)*, Nevşehir, Turkey, 2018. (Oral)
10. Karamazı Y., Cantürk Tan F., Önder G. Ö., Yalçın B., Yay A. H., **Tan B.**, Daşdağ S., "Histopathological changes in liver damage caused by electromagnetic field in rat fetus", *International Congress on Sports, Anthropology, Nutrition, Anatomy and Radiology (SANAR2018)*, Nevşehir, Turkey, 2018. (Poster)
11. Babur E., Dursun N., **Tan B.**, Bayar Y., Süer C., "L-Thyroxine suppresses the mitogen-activated protein kinases activation by a depotentiating stimulus given short after a

tetanus in hippocampus in vivo", *30th European Neuropsychopharmacology (ECNP)*, Paris, France, 2017. (Poster)

12. Babur E., Dursun N., **Tan B.**, Bayar Y., Süer C., "Depotential of post-tetanic enhancement induces abnormal Tau hyperphosphorylation in the hippocampus in vivo", *30th European Neuropsychopharmacology (ECNP)*, Paris, France, 2017. (Poster)
13. **Tan B.**, Aşcıoğlu M., Süer C., "Effects of experimentally induced maternal hyperthyroidism on the expression of long term potentiation of rat offspring in comparison with adult age", *29th ECNP Congress*, Vienna, Austria, 2016. (Poster)
14. Özdoğan K., Dursun N., Cantürk Tan F., **Tan B.**, "Cardioprotective effects of Na⁺ - H exchanger inhibition on reperfusion injury in rats", *FEPS 2016*, Paris, France, 2016. (Poster)
15. Yousef M., Bitiktas S., **Tan B.**, Kavraal S., Donmez-Altuntas H., Dursun N., Süer C., "Adult onset hyperthyroidism enhances LTD and up-regulates p38-MAPK and PP1 expression in rat hippocampus", *28th ECNP Congress*, Amsterdam, Netherlands, 2015. (Poster)
16. **Tan B.**, Bitiktas S., Özdoğan K., Bakkaloğlu U., Aşcıoğlu M., Süer C., "Maternal L-thyroxine treatment during lactation affects learning and anxiety-like behaviours but not spatial memory in adult rat progeny", *28th ECNP Congress*, Amsterdam, Netherlands, 2015. (Poster)
17. Süer C., Liman N., Kandemir B., **Tan B.**, Kavraal S., Bitiktas S., Dursun N., Kurnaz I. A., "A decrease in phosphorylation of CREB may explain delayed place learning and attenuated long-term potentiation in adult-onset hyperthyroidism", *28th ECNP Congress*, Amsterdam, Netherlands, 2015. (Poster)
18. Bayar Y., Kavraal S., Bitiktas S., **Tan B.**, Dursun N., Süer C., "Favoring long-term depression over long-term potentiation in adult-onset hypothyroidism is prevented by dietary selenium supplementation", *28th ECNP Congress*, Amsterdam, Netherlands, 2015. (Poster)
19. **Tan B.**, Bitiktaş S., Kavraal Ş., Kandemir B., Altuntaş H., Dursun N., Liman N., Aksan-Kurnaz I., Süer C., "Possible involvement of p38MAPK and PP1 in impaired hippocampal function induced by 21-day propylthiouracil treatment", *27th ECNP Congress*, Berlin, Germany, 2014. (Poster)
20. Bitiktaş S., **Tan B.**, Kandemir B., Kavraal Ş., Liman N., Altuntaş H., Dursun N., Aksan Kurnaz I., Süer C., "Possible involvement of shifting NR2B subunit to NR2A subunit in impaired hippocampal function induced by 21-day thyroxine treatment", *27th ECNP Congress*, Berlin, Germany, 2014. (Poster)
21. Süer C., Dursun N., Kavraal Ş., Bitiktaş S., **Tan B.**, "Selenium supplementation may reduce impaired long term potentiation and long term depression induced by propylthiouracil treatment", *27th ECNP Congress*, Berlin, Germany, 2014. (Poster)
22. **Tan B.**, Süer C., Bitiktaş S., Kavraal Ş., Ulusoy H. B., Karaca B., "Aluminum exposure to adult rats impairs long-term potentiation but not short-term potentiation in the dentate gyrus", *26th ECNP Congress*, Barcelona, Spain, 2013. (Poster)
23. **Tan B.**, Bitiktas S., Kavraal S., Kandemir B., Kurnaz I. A., Süer C., "Sex-dependent effects of chronic L-thyroxine treatment in the water maze", *26th ECNP Congress*, Barcelona, Spain, 2013. (Poster)
24. Bitiktas S., Kavraal S., **Tan B.**, Örnek H., Özdoğan K., Dursun N., Süer C., "Evidence for nongenomic modulation of synaptic plasticity by L-thyroxine in the hippocampus", *26th ECNP Congress*, Barcelona, Spain, 2013. (Poster)

25. **Tan B.**, Deneme F., Bitiktas S., Kavraal S., Aşçıoğlu M., Süer C., "Adulthood isolation stress enhances both long- and short-term potentiation in rats", *26th ECNP Congress*, Barcelona, Spain, 2013. (Poster)

II. National Conference Presentations

1. **Tan B.**, Süer C., Koşar B., Dursun N., "Possible Role of Nitric Oxide Synthase in Low-Frequency Stimulation-Induced Long-Term Potentiation in Aged Hyperthyroid Rats", *45th National Physiology Congress*, Aydın, Turkey, 2019. (Oral)
2. Babur E., **Tan B.**, Süer C., Dursun N., "Effect of selenium on learning and memory and its relationship with Tau in young rats", *17th National Neuroscience Congress*, Trabzon, Turkey, 2019. (Oral)
3. Cantürk Tan F., Yay A. H., **Tan B.**, "Hippocampal changes in male rat brains exposed to prenatal radiofrequency electromagnetic field", *17th National Neuroscience Congress*, Trabzon, Turkey, 2019. (Oral)
4. Yousef M., Süer C., Dursun N., **Tan B.**, "Time-dependent effect of ERK inhibitor PD98059 on long-term depression recorded from dentate gyrus", *17th National Neuroscience Congress*, Trabzon, Turkey, 2019. (Poster)
5. Çimen A., Varol S., Dursun N., Süer C., **Tan B.**, "Prevention of long-term potentiation by low-frequency stimulation in perforant path-dentate gyrus synapses", *17th National Neuroscience Congress*, Trabzon, Turkey, 2019. (Poster)
6. **Tan B.**, Koşar B., Dursun N., Babur E., Süer C., "Adult-onset hypothyroidism alters the metaplastic properties of dentate gyrus granule cells by inhibiting Akt", *17th National Neuroscience Congress*, Trabzon, Turkey, 2019. (Oral)
7. **Tan B.**, Babur E., Delibaş S., Dursun N., Süer C., "Adult-Onset Hypothyroidism Promotes Metaplastic Inhibition of Long-term Potentiation in a Frequency-Specific Manner", *44th National Physiology Congress*, Antalya, Turkey, 2018. (Oral)
8. **Tan B.**, Babur E., Dursun N., Süer C., "Investigation of metaplasticity responses in rats with induced hypothyroidism", *16th National Neuroscience Congress*, Istanbul, Turkey, 2018. (Poster)
9. **Tan B.**, Babur E., Dursun N., Süer C., "L-Thyroxine Suppresses the Mitogen-Activated Protein Kinase Activation by Depotentiating Stimulus in the Hippocampus In Vivo", *43rd National Physiology Congress*, Denizli, Turkey, 2017. (Oral)
10. Bakkaloğlu U., Babur E., **Tan B.**, Yazgan K., Gölgeli A., "Effect of agomelatine on cognitive functions in rats with induced depression model", *43rd National Physiology Congress*, Denizli, Turkey, 2017. (Poster)
11. Babur E., **Tan B.**, Süer C., Dursun N., "Effect of different types of selenium on learning and memory in hypothyroid rats", *43rd National Physiology Congress*, Denizli, Turkey, 2017. (Poster)
12. **Tan B.**, Babur E., Delibaş S., Süer C., "Investigating the role of some proteins after infusing T3 hormone on hippocampus during high frequency stimulation followed by low frequency stimulation to induce depotentiation", *15th National Neuroscience Congress*, Sakarya, Turkey, 2017. (Poster)
13. **Tan B.**, Babur E., Delibaş S., Süer C., "Comparing of learning memory performance in aged rats with hypothyroidism and hyperthyroidism", *15th National Neuroscience Congress*, Sakarya, Turkey, 2017. (Poster)

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15. **Tan B.**, Babur E., Erol E., Süer C., Dursun N., "Evaluation of Spatial Learning Performance in Selenium Supplemented Rats", *42nd National Physiology Congress*, Düzce, Turkey, 2016. (Oral)
16. **Tan B.**, Bakkaloğlu U., Yousef M. W., Babur E., Bitiktaş S., Aşçıoğlu M., Süer C., "Investigation of the Ameliorative Effect of Selenium on Learning Impairment Caused by Hyperthyroidism Induced During Lactation", *41st National Physiology Congress*, Çanakkale, Turkey, 2015. (Oral)
17. **Tan B.**, Bitiktaş S., ÖZDOĞAN K., Bakkaloğlu U., Aşçıoğlu M., Süer C., "Effect of thyroxine applied to mother rats during lactation on learning performance in adulthood", *13th National Neuroscience Congress*, Konya, Turkey, 2015. (Poster)
18. **Tan B.**, Kandemir B., Süer C., Altuntaş H., Aksan Kurnaz I., Liman N., Dursun N., Bitiktaş S., Kavraall Ş., "21-day thyroxine administration impairs hippocampal learning and memory performance by changing the NMDA receptor subunit composition in hippocampal neurons", *40th National Physiology Congress*, Kayseri, Turkey, 2014. (Oral)
19. **Tan B.**, Süer C., Dursun N., Bitiktaş S., Kavraall Ş., "Selenium Supplementation May Reduce Impaired Long-Term Potentiation and Long-Term Depression Induced by Propylthiouracil Administration", *40th National Physiology Congress*, Kayseri, Turkey, 2014. (Poster)
20. **Tan B.**, Kandemir B., Süer C., Aksan Kurnaz I., Bitiktaş S., Kavraall Ş., Liman N., "Sex-Dependent Change of Spatial Learning Performance in Hyperthyroid Rats", *39th National Physiology Congress*, Ankara, Turkey, 2013. (Poster)
21. **Tan B.**, **Süer C.**, **Örnek H. F.**, **Dursun N.**, **Bitiktaş S.**, **Kavraall Ş.**, **Yıldız N.**, "Effects of Chronic Hyperthyroidism and Hypothyroidism on Long-Term Potentiation Responses", *39th National Physiology Congress*, Ankara, Turkey, 2013. (Oral)
22. **Tan B.**, Süer C., Örnek H. F., Dursun N., Bitiktaş S., Kavraall Ş., Dilek A., "Investigation of the effect of L-thyroxine infusion on dentate gyrus long-term potentiation responses", *39th National Physiology Congress*, Ankara, Turkey, 2013. (Poster)

Scientific Congress and Meetings Attended

International Congresses

29th European College of Neuropsychopharmacology (ECNP) Congress, Vienna, Austria.

28th European College of Neuropsychopharmacology (ECNP) Congress, Amsterdam, Netherlands.

27th European College of Neuropsychopharmacology (ECNP) Congress, Berlin, Germany.

26th European College of Neuropsychopharmacology (ECNP) Congress, Barcelona, Spain.

Joint Meeting of the Federation of European Physiological Societies (FEPS) and the French Physiological Society, 2016, Paris, France.

National Congresses

- 45th National Physiology Congress, Aydın, Türkiye.
- 44th National Physiology Congress, Antalya, Türkiye.
- 43rd National Physiology Congress, Denizli, Türkiye.
- 42nd National Physiology Congress, Düzce, Türkiye.
- 41st National Physiology Congress, Çanakkale, Türkiye.
- 40th National Physiology Congress, Kayseri, Türkiye.
- 39th National Physiology Congress, Ankara, Türkiye.
- 17th National Neuroscience Congress, Trabzon, Türkiye.
- 16th National Neuroscience Congress, Istanbul, Türkiye.
- 15th National Neuroscience Congress, Sakarya, Türkiye.
- 14th National Neuroscience Congress, Ankara, Türkiye.
- 13th National Neuroscience Congress, Konya, Türkiye.
- 11th National Neuroscience Congress, Izmir, Türkiye.

Scientific Meetings & Advisory Boards

- 1st International Advisory Board Meeting, Genome and Stem Cell Center (GENKOK), Erciyes University, Kayseri, Türkiye.

Honors and Awards

- **Young Investigator Award**, Turkish Society of Physiological Sciences (TFBD), 47th National Physiology Congress, 2022.
- **Travel Grant**, European College of Neuropsychopharmacology (ECNP), 29th ECNP Congress, Vienna, Austria, September 2016.
- **Third Place Poster Award**, Saray H., Dursun N., Süer C., **Tan B.**, "Effect of Inhibition of Rho/Rho-kinase with Fasudil on Hippocampal LTP Responses," 45th National Physiology Congress, 2019.
- **Best Research Award (Oral/Poster Recognition)**, Halis H., Liman N., Baştuğ O., Bitiktaş S., **Tan B.**, Güneş T., Süer C., "Evaluation of the Effect of Pentoxifylline on Neuronal

Apoptosis and Cognitive-Motor Skills in Neonatal Rats with Hypoxic Ischemic Brain Injury," 22nd National Neonatology Congress (UNEKO), April 2014.

Fellowships and Grants

- **TÜBİTAK 2211-C National PhD Scholarship Programme, 2017 – 2019**

Project: Investigation of metaplasticity responses and signal pathways in the hippocampus of hypothyroidism and hyperthyroidism rat models (PhD Dissertation).

- **TÜBİTAK 2210-C National MSc Scholarship Programme, 2014 – 2015**

Project: Evaluation of spatial learning and memory performance in offspring of rats with hyperthyroidism (Master's Thesis).

References

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