



Hava Bektaş, PhD

Associate Professor of Biophysics

Department of Biophysics, Faculty of Medicine

Van Yüzüncü Yıl University, Van, Türkiye

Email: havabektas@yyu.edu.tr

Professional Summary

Associate Professor of Biophysics with extensive experience in radiofrequency (RF) electromagnetic fields and their biological effects. My research integrates human, in vitro, and animal studies, focusing on oxidative stress, neurobiology, reproductive health, and cancer-related mechanisms. I have a strong track record in 3.5 GHz (5G-related) exposure models and translational EMF research. My research uniquely includes human exposure studies, particularly on pregnant women and cord blood, providing rare translational insights into RF-EMF effects.

Bibliometric Indicators

- Web of Science (WoS) H-index: 6
- Google Scholar H-index: 10

Education

PhD in Biophysics

Dicle University, Institute of Health Sciences, Türkiye

2017

Thesis: Investigation of oxidative stress, protein oxidation, and DNA damage in placenta and cord blood of pregnant women exposed to RF radiation

MSc in Biophysics

Van Yüzüncü Yıl University, Institute of Health Sciences, Türkiye

2012

Thesis: Effects of tibolone on biomechanical properties of bone in ovariectomized rats

MSc in Physics

Van Yüzüncü Yıl University, Institute of Science, Türkiye

2011

Thesis: Thermoelectric and Nernst–Ettingshausen effects in magnetic semiconductors

BSc in Physics

Ege University, Faculty of Science, Türkiye
2000

Academic Positions

- **Associate Professor**, Department of Biophysics, Van Yüzüncü Yıl University (2021–Present)
- **Research Assistant**, Department of Biophysics, Van Yüzüncü Yıl University (2012–2021)

Scientific Expertise

Radiofrequency (RF) Electromagnetic Fields • 5G (3.5 GHz) Exposure • Oxidative Stress • Neurobiology • Reproductive Health • Cancer Mechanisms • Human Exposure Studies • In vitro & Animal Models

Supervised Theses

MSc Theses

1. Yildirim S. Effects of 3.5 GHz RF radiation exposure on the reproductive system: Protective potential of coenzyme Q10. Van Yuzuncu Yil University, Institute of Health Sciences, Department of Biophysics, 2025. (Completed)
2. Akgun BB. Investigation of oxidative stress parameters in the thyroid tissue of rats exposed to 3.5 GHz RF radiation: Potential protective effects of quercetin. Van Yuzuncu Yil University, Institute of Health Sciences, Department of Biophysics, 2025. (Completed)

Research Projects

1. Investigation of the effects of 3.5 GHz RF radiation exposure on memory in rat brains. Funded by Higher Education Institutions Scientific Research Projects (BAP). Principal Investigator: Hava Bektas. Researchers: Ares Alizade, Serife Cakir. 2023 – 2025 (National)
2. Investigation of the effects of GSM radiofrequency signals on nesfatin-1, ghrelin, irisin, insulin levels and oxidative stress parameters in an STZ-induced diabetic rat model. Funded by Higher Education Institutions Scientific Research Projects (BAP). Principal Investigator: Hava Bektas. Researchers: Mehmet Zulkuf Akdag, Sermin Algul, Suleyman Dasdag. 2021 – 2022 (National)
3. Investigation of degenerative effects in mouse DRG neurons exposed to 3.5 GHz radiofrequency radiation in vitro. Funded by Higher Education Institutions Scientific Research Projects (BAP). Principal Investigator: Hava Bektas. Researchers: Ramazan Ustun, Ayse Seker. 2021 – 2025 (National)

Teaching Experience

- Biomechanics (Graduate level)
- Cell Biophysics (Graduate level)

- Electromagnetic Waves and Their Effects on Health (Graduate level)
- Biophysics of Vision and Hearing (Graduate level)
- Biophysics of Respiratory and Circulatory Systems (Graduate level)

Certifications

- Laboratory Animal Use Certification
- Cell Culture and Molecular Biology Training
- Electrophysiology Training
- Clinical Research Certification

Publications

1. Bektas H, Yildirim S, Cakir S, Dogu S, Altindag F. Ameliorative role of coenzyme Q10 in RF radiation-associated testicular and oxidative impairments in a 3.5 GHz exposure model. *Bioelectromagnetics*. 2026. doi:10.1002/bem.70043
2. Bektas H, Seker A, Ustun R, Dogu S. Neurotoxic effects of 3.5 GHz GSM-like RF exposure on cultured DRG neurons: a mechanistic insight into oxidative and apoptotic pathways. *International Journal of Radiation Biology*. 2026. doi:10.1080/09553002.2026.2617592
3. Dolanbay EG, Mert T, Caliskan BG, Bektas H, Uslu U, Fernandez-Rodriguez CE, et al. Male reproductive and cellular damage after prenatal 3.5 GHz radiation exposure: one-year postnatal effects. *Annals of the New York Academy of Sciences*. 2025;1589(1):85–99. doi:10.1111/nyas.70116
4. Bektas H, Akgun BB, Cakir S, Dogu S, Ahnas B. Protective effects of quercetin against 3.5 GHz RF radiation-induced thyroid dysfunction and oxidative stress in rats. *Electromagnetic Biology and Medicine*. 2025. doi:10.1080/15368378.2025.2528732
5. Bektas H, Dasdag S. Radiofrequency radiation and Alzheimer's disease: harmful and therapeutic implications. *International Journal of Radiation Biology*. 2025. doi:10.1080/09553002.2025.2481854
6. Bektas H, Dasdag S. The effects of radiofrequency radiation on male reproductive health and potential mechanisms. *Electromagnetic Biology and Medicine*. 2025;44(3):359–384. doi:10.1080/15368378.2025.2480664
7. Bektas H, Dasdag S, Altindag F, Akdag MZ, Yegin K, Algul S. Effects of 3.5 GHz radiofrequency radiation on energy-regulatory hormone levels in blood and adipose tissue. *Bioelectromagnetics*. 2024. doi:10.1002/bem.22498
8. Bektas H, Dasdag S, Nalbant A, Akdag MB, Demir C, Kavak S. 3.5 GHz radiofrequency radiation may affect biomechanics of bone and muscle in diabetics. *Biotechnology & Biotechnological Equipment*. 2023. doi:10.1080/13102818.2023.2199096

9. Bektas H, Nalbant A, Akdag MB, Demir C, Kavak S, Dasdag S. Adverse effects of 900, 1800 and 2100 MHz radiofrequency radiation emitted from mobile phones on bone and skeletal muscle. *Electromagnetic Biology and Medicine*. 2023;42(1):9–20. doi:10.1080/15368378.2023.2179065
10. Bektas H, Algul S, Altindag F, Yegin K, Akdag MZ, Dasdag S. Effects of 3.5 GHz (5G) radiofrequency radiation on ghrelin, nesfatin-1 and irisin levels in diabetic and healthy brains. *Journal of Chemical Neuroanatomy*. 2022;126:102168. doi:10.1016/j.jchemneu.2022.102168
11. Bektas H. The effects of mobile phones on diabetes and appetite. *Journal of International Dental and Medical Research*. 2022;15(1):441–447
12. Bektas H, Bektas MS, Dasdag S. Effect of mobile phone usage duration during pregnancy on the general motor movements of infants. *Biotechnology & Biotechnological Equipment*. 2022;36(1):56–66. doi:10.1080/13102818.2022.2046505
13. Bektas H, Dasdag S, Bektas MS. Evaluation of 900 and 1800 MHz radiofrequency radiation emitted from mobile phones on pregnant women. *Journal of International Dental and Medical Research*. 2021;14(4):1675–1683
14. Bektas H, Dasdag S. Extremely low frequency magnetic field alters cytotoxicity of irinotecan in glioblastoma: a preliminary observation. *Dicle Medical Journal*. 2021;48(3):396–403. doi:10.5798/dicletip.987802
15. Bektas H, Dasdag S, Bektas MS. Comparison of effects of 2.4 GHz Wi-Fi and mobile phone exposure on human placenta and cord blood. *Biotechnology & Biotechnological Equipment*. 2020;34(1):154–162. doi:10.1080/13102818.2020.1725639
16. Bektas H, Dasdag S, Bektas MS. Does mobile phone use during pregnancy cause hearing problems in infants? A preliminary observation. *Perinatal Journal*. 2020;28(2):101–107
17. Bektas H, Bektas MS, Dasdag S. Effects of mobile phone exposure on biochemical parameters of cord blood: a preliminary study. *Electromagnetic Biology and Medicine*. 2018;37(4):184–191. doi:10.1080/15368378.2018.1499033
18. Bektas H, Dasdag S. Effects of radiofrequencies emitted from mobile phones and Wi-Fi on pregnancy. *Journal of International Dental and Medical Research*. 2017;10(3):1084–1095
19. Bulut G, Basbugan Y, Ari E, Erten R, Bektas H, Alp HH, Bayram I. Paricalcitol may improve oxidative DNA damage in experimental amikacin-induced nephrotoxicity. *Renal Failure*. 2016;38:751–758. doi:10.3109/0886022X.2016.1158071
20. Dasdag S, Bektas H. Magnetotactic bacteria and their application in medicine. *Journal of Physical Chemistry & Biophysics*. 2014;4(2):1–5
21. Garca MF, Kavak S, Gecit I, Meral I, Demir H, Turan M, Cegin MB, Bektas H, Cankaya H. Effects of shock waves on oxidative stress in the parotid gland of rats. *Toxicology and Industrial Health*. 2014;30(5):454–458. doi:10.1177/0748233712457452

22. Ay Y, Aydin C, Basel H, Bektas H, Bulut G, Inan B, Kahraman AN, Demir I. The effects of levosimendan exposure on oxidant/antioxidant status and trace element levels in the pulmonary artery of rats. *Journal of Membrane Biology*. 2013;246(6):473–478. doi:10.1007/s00232-013-9559-2
23. Basel H, Kavak S, Demir H, Meral I, Ekim H, Bektas H. Effect of levosimendan injection on oxidative stress in rat myocardium. *Toxicology and Industrial Health*. 2012;29(5):435–440. doi:10.1177/0748233712436643
24. Cengiz N, Kavak S, Guzel A, Ozbek H, Bektas H, Him A, Erdogan E, Balahoroglu R. Investigation of the hepatoprotective effects of sesame in carbon tetrachloride-induced liver toxicity. *Journal of Membrane Biology*. 2012;246(1):1–6. doi:10.1007/s00232-012-9494-7
25. Gecit I, Kavak S, Yuksel MB, Basel H, Bektas H, Gumrukcuoglu HA, Meral I, Demir H. Effect of short-term treatment with levosimendan on oxidative stress in renal tissues of rats. *Toxicology and Industrial Health*. 2012;30(1):47–51. doi:10.1177/0748233712451773
26. Aydin C, Ay Y, Basel H, Kavak S, Inan B, Bektas H, Gumrukcuoglu HA, Ekim H, Demir H. Analysis of the effects of short-term levosimendan exposure on oxidant/antioxidant status and trace element levels in thoracic aorta of rats. *Journal of Membrane Biology*. 2012;245(12):827–832. doi:10.1007/s00232-012-9489-4

Conference Proceedings (International)

1. Bektas H, Taspinar M, Yuksek V, Dasdag S. Effect of extremely low-frequency magnetic field on the response to irinotecan in glioblastoma: A preliminary observation. *BIOEM 2016*. Abstract (Poster).
2. Bektas H, Bektas MS, Dasdag S. Research on the fetal effects of radiofrequencies originating from mobile phones in pregnant women. 1st International Health Sciences Congress of the Association of Thrace Universities. 2017. Abstract (Oral Presentation).
3. Bektas H. Effects of radiofrequency radiation on oxidative stress and histopathological changes in liver tissue: An evaluation of current findings. 9th International Conference on Medical & Health Sciences. 2025:382–389. doi:10.5281/zenodo.15620499 (Full Text, Oral Presentation).
4. Bektas H, Dasdag S. Effects of mobile phone and Wi-Fi-derived radiofrequencies on pregnancy. 9th International Medicine and Health Sciences Research Congress. 2022:208–209 (Full Text, Oral Presentation).
5. Bektas H. Effects of electromagnetic fields on myogenesis. 5th International Health Science and Life Congress. 2022:1389–1390 (Full Text, Oral Presentation).
6. Bektas H. Effects of electromagnetic pollution on the brain. 2nd International Aegean Health Areas Symposium. 2022:219–223 (Full Text, Oral Presentation).
7. Bektas H. Are 5G technologies dangerous for the kidneys of diabetic patients? 2nd International Congress on Biological and Health Sciences. 2022:87–93 (Full Text, Oral Presentation).

8. Bektas H, Bektas MS. Comparison of cord blood biochemical parameters and fidgety general movements in infants of mothers with different durations of mobile phone use during pregnancy. Gazi International Health Sciences Congress. 2021:28–35. doi:10.52881/gsbdergi.1082541 (Full Text, Oral Presentation).

9. Ozev S, Bektas H, Karapinar R. Light reflection from a cholesteric liquid crystal film. NanoTR VII – 7th Nanoscience and Nanotechnology Conference. 2011 (Full Text, Poster).

Book Chapters

1. Bektas H. Radiofrequency radiation and brain cancer: Experimental findings and molecular mechanisms. In: Bayramoglu Akkoyun M, Bektas H, Akkoyun HT, eds. Current Research in Health Sciences: Molecular Mechanisms and Interdisciplinary Approaches. IKSAD; 2025. (In Turkish).

2. Bektas H. Radiofrequency radiation and immunomodulation: Cellular and molecular perspectives. In: Bayramoglu Akkoyun M, Bektas H, Akkoyun HT, eds. Current Research in Health Sciences: Molecular Mechanisms and Interdisciplinary Approaches. IKSAD; 2025. (In Turkish).

3. Bektas H. Effects of extremely low-frequency electromagnetic fields on health. In: Parlar H, ed. Health Science-2021-II. EFE Academy; 2021.

4. Bektas H. 5G and health concerns. In: Evereklioglu C, ed. Research Reviews in Health Sciences. Gece Publishing; 2021.

National Peer-Reviewed Articles

1. Bektas H, Guliyev B. The effect of electron spin scattering on thermoelectric power and the Nernst–Ettingshausen effect in magnetic semiconductors. YYU Journal of Science Institute. 2010;15(2):124–129.

Conference Proceedings (National)

1. Bektas H, Dasdag S. Magnetotactic bacteria and their applications in medicine. EMANET 2013 Symposium on Electromagnetic Fields and Effects. Full Text, Oral Presentation.

2. Bektas H, Dasdag S, Bektas MS. Investigation of fetal effects of mobile phone-derived radiofrequencies in pregnant women. 28th–29th National Biophysics Congress. 2017;9(1):101–102 (Abstract, Poster).

Editorial Activity

1. Editor, Current Research in Health Sciences: Molecular Mechanisms and Interdisciplinary Approaches. IKSAD Publishing, 2025