

**Assist. Prof. Dr. Zafer AKAN**

Celal Bayar University  
School of Medicine  
Dept. of Biophysics  
Manisa-TURKEI

Phone : +905443588282

E mail : [zaferakan@marmara.edu.tr](mailto:zaferakan@marmara.edu.tr)  
[zafer\\_akan@hotmail.com](mailto:zafer_akan@hotmail.com)



**EDUCATIONAL BACKGROUND**

- 1994-1998 **B.Sc.** Yuzuncu Yil University, Faculty of Science, Department of **Physics**<sup>1</sup>  
1999-2002 **M.Sc.** Yuzuncu Yil University School of Medicine, Department of **Biophysics**<sup>2</sup>  
2004-2009 **Ph.D.** Marmara University School of Medicine Department of **Biophysics**<sup>3</sup>  
2007-2008 **Visiting Scholar, Research Assistant**<sup>4</sup>, University of North Carolina department of Biochemistry-Biophysics **NC USA**, Grant was supported by Sancar lab<sup>5</sup>.

**THESIS**

- M.Sc. Thesis**<sup>6</sup> Van hava alanında (VFM) oluşan gürültü kirliliğinin çalışanlar üzerindeki etkileri 2002  
Noise pollution in the Van airport (VFM) and effects over the workers 2002  
**Ph.D. Thesis**<sup>7</sup> Düşük frekans elektromanyetik alanların bakteri ve monosit türevi makrofajlar üzerindeki etkilerinin araştırılması 2009  
The effects of low frequency electromagnetic fields on bacteria and monocyte derived macrophages 2009

**EXPERIENCES**

- 2000-2002 Yuzuncu Yil Univ. School of Medicine, Department of Biophysics. **Research Assistant**  
2001-2004 Yuzuncu Yil Univ. School of Medicine, Department of Biophysics. **Lecturer**  
2006-2009 Marmara Univ. School of Medicine, Department of Biophysics. **Research Assistant**  
2010-2013 Yuzuncu Yil Univ. School of Medicine, Department of Biophysics. **Assist. Prof. Dr.**  
**2010-2013 YYU School of Medicine, Biophysics Lecturer**  
**2010-2013 YYU Faculty of Dentistry, Biophysics Lecturer**  
**2010-2013 YYU Faculty of Science, Department of Biology. Biophysics Lecturer**  
**2010-2013 YYU College of Education, Department of Biology. Biophysics Lecturer**  
**2013- CBU School of Medicine, Biophysics Lecturer**

## **PUBLICATIONS in the SCI and SCI-expanded Journals**

- A1** Kemp MG, **Akan Z**, Yilmaz S, Grillo M, Smith-Roe SL, Kang TH, Cordeiro-Stone M, Kaufmann WK, Abraham RT, Sancar A, Unsal-Kaçmaz K, "Tipin-replication protein A interaction mediates Chk1 phosphorylation by ATR in response to genotoxic stress", *J Biol Chem (ISI)* , 16562-71 pp., 2010 ,
- A2** Garip AI, **Akan Z**, "Effect of ELF-EMF on number of apoptotic cells; correlation with reactive oxygen species and HSP", *Acta Biol Hung (ISI)* , 158-67 pp., 2010 ,
- A3** Ayşe IG, **Zafer A**, Sule O, Işıl IT, Kalkan T, "Differentiation of K562 cells under ELF-EMF applied at different time courses", *Electromagn Biol Med (ISI)* , 122-30 pp., 2010
- A4** **Akan Z**, Körpınar MA, Tulgar M, "Effects of noise pollution over the blood serum immunoglobulins and auditory system on the VFM airport workers, Van, Turkey", *Environ Monit Assess (ISI)* , 537-43 pp., 2010
- A5** **Akan Z**, Aksu B, Tulunay A, Bilsel S, Inhan-Garip A, "Extremely low-frequency electromagnetic fields affect the immune response of monocyte-derived macrophages to pathogens", *Bioelectromagnetics (ISI)* , 603-12 pp., 2010
- A6** Inhan-Garip A, Aksu B, **Akan Z**, Akakin D, Ozaydin AN, San T, "Effect of extremely low frequency electromagnetic fields on growth rate and morphology of bacteria", *Int J Radiat Biol (ISI)* , 1155-61 pp., 2011
- A7** Cobanoglu U, Demir H, Cebi A, Sayir F, Alp HH, **Akan Z**, Gur T, Bakan E, "Lipid Peroxidation, DNA Damage and CoenzymeQ10 in Lung Cancer Patients - Markers for Risk Assessment?", *Asian Pac J Cancer Prev (ISI)* , 1399-403 pp., 2011
- A8** Yusuf K. Demir, **Zafer Akan**, and Oya Kerimoglu, "Sodium Alginate Microneedle Arrays Mediate the Transdermal Delivery of Bovine Serum Albumin", *Plos One (ISI)* , e63819 pp., 2013
- A9** M. Söyler, H. Demir, F. Ç. Çelikezen, İ. Çelik, and **Z. Akan**, Characterisation of carbonic anhydrase purified from erythrocytes of van cat (*felis catus*). *Fresenius Environmental Bulletin (ISI)* , 1113-1117 pp., 2013 ,
- A10** **Akan Z**, Garip AI, "Antioxidants may protect cancer cells from apoptosis signals and enhance cell durability", *Asian Pac J Cancer Prev (ISI)* , 4611-4614 pp., 2013 ,
- A11** Yusuf K. Demir, **Zafer Akan**, Oya Kerimoglu, "Characterization of Polymeric Microneedle Arrays for Transdermal Drug Delivery", *PLOS ONE (ISI)* , 1-9 pp., 2013
- A12** Yuksel MB, Karakose A, Gumus B, Tarhan S, Atesci YZ, **Akan Z**. Analysis of Radiofrequency Ablation of Small Renal Tumors in Patients at High Anesthetic and Surgical Risk: Urologist Experience with Follow-up Results in the Initial Six Months. *Asian Pac J Cancer Prev*. 2013; 14(11):6637-41.
-

- 13 Akan Z\***, Baskurt B, Aslıyukse H, Kam E, Yılmaz A, Yuksel MB, Biyik R, Esen R, Koca D. Environmental Radioactivity and High Incidence Rates of Stomach and Esophagus Cancer in the Van Lake Region: A Causal Relationship? Asian Pac J Cancer Prev. 2014; 15(1)
- 

### **PUBLICATIONS in the National Journals**

- D1** Nuh Mehmet Erdem, **Zafer Akan**, Ömer Anlar, Hakan Çankaya, Metin Tulgar, "Beyin Sapı İşitsel Potansiyeli Kayıtlarının Yaş ve Cinsiyete Göre Standardizasyonu", Van Tıp Dergisi , 12-18 pp., 2002 ,
- D2** Yılmaz A, **Akan Z**, Yılmaz H, "Van il merkezi, yetişkin yaş grubunda diabetes mellitus sıklığı ve etkileyen faktörler", 392 J Clin Exp Invest [www.clinexpinvest.org](http://www.clinexpinvest.org) Vol 2, No 4, December 2011 , 392-399 pp., 2011 ,
- D3** **Akan Z**, Yılmaz A, Ozdemir O, Korpınar MA, "Noise Pollution, Psychiatric Symptoms And Quality Of Life: Noise Problem In The East Region Of Turkey", İnönü Üniversitesi Tıp Fakültesi Dergisi , 12-18 pp., 2012 ,
- D4** Sebahat Gücük, Seçil Günher Arıca, **Zafer Akan**, Vefik Arıca, Servet Alkan, "Van ilindeki çok eşlilik oranları ve etkileyen faktörler: Kesitsel çalışma", J KARTAL TR , 127-133 pp., 2010 ,
- 

### **PROJECTS COMPLETED**

- C1** Ayşe İnhan garip, Zafer Akan. Effect of extremely low frequency electromagnetic fields on apoptosis and free radical levels of K562 cell line induced with quercetin. **Scientific and Technological Research Council of Turkey (TUBITAK). SBAG-HD-41**
- C2** Ayşe İnhan garip, Zafer Akan. Effect of extremely low frequency electromagnetic fields over the human monocyte and macrophage. **Marmara Univ. Research Fund (BAPKO) SAG DKR 290906 0188**
- C3** Ayşe İnhan garip, Oya Orun, Zafer Akan, Burak Aksu. Effects of extremely low frequency electromagnetic fields on different bacterial strains. **Marmara Univ. Research Fund (BAPKO) SAG BGS 120707 0146**
- C4** Michael G. Kemp, Zafer Akan. Control of the ATR DNA damage response by ssDNA and the Timeless/Tipin complex. **National Institutes of Health grants. University of North Carolina department of Biochemistry-Biophysics NC USA 2008. GM32833**
- C5** Zafer Akan. Effect of Extremely low frequency electromagnetic fields on bacteria growth and morphology **Marmara Univ. Research Fund (BAPKO) SAG D 300609 0210**

### **PROJECTS ON GOING**

- C6** Betül Özçopur, Zafer Akan, Ögür Gönenc, Evrim Eligüzeloğlu: To examine of survival and proliferation of inflamated and non-inflamated human dental pulp cells (DP) and regenerate capability of dentin-pulp like structure in-vitro. **BAP-YYU 2010-DF-B004**

C7 Boron neutron Capture Therapy in the Turkey **BOREN-2011-Ç0289**

### CONGRESS ORAL PRESENTATIONS

- D1** **Akan Zafer**, Körpınar M.A., Erdem N.M., Tulgar M,: Effects of noise pollution on Airport Workers. XIII. National Biophysics Congress, ESKISEHIR. 5-7 Sept. 2001 **Oral presentation**
- D2** **Akan Zafer**, İnhan Garip Ayşe, Tulunay Aysin: Effect of ELF-EMF on quercetin and oxidative stress induced apoptosis of K562 cell line XVIII. National Biophysics Congress, Beypazari ANKARA. 6-9 Sept. 2006 **Oral presentation**
- D3** **Akan Zafer**, İnhan Garip Ayşe: Çok düşük Frekans elektromanyetik alanların ısı şok proteinleri (Hsp70) ve Kaspaz-9 aktivasyonuna etkileri. 22. Ulusal Biyofizik Kongresi. 28 eylül-1 ekim 2010 **Oral presentation**

### CONGRESS POSTER PRESENTATIONS

- E1** **Zafer Akan**, Ayse İnhan Garip, Tulunay Aysin: Effect of Elf-Emf on apoptosis of K562 cell line induced with quercetin and oxidative stress. 4th International Workshop on Biological Effects of Electromagnetic Fields. Crete, Greece. 16-20 October 2006, **Poster**
- E2** **Akan, Z**,\_Inhan Garip, A: The effect of extremely low frequency electromagnetic fields (elf emf) on apoptosis and hsp70 protein expression levels of k562 human leukemia cell line. Montevideo Uruguay 6<sup>th</sup> international conference of biological physics ICBP. 27-31 august 2007. **Poster**
- E3** **Zafer Akan**, Ayse İnhan-Garip, Burak Aksu,: Effect of Extremely low frequency electromagnetic fields on bacteria growth and morphology. 7<sup>th</sup> European Biophysics Congress July 11<sup>th</sup>-15<sup>th</sup> 2009, Genoa, Italy **Poster**
- E4** **Zafer Akan**, Ayse İnhan-Garip: Effects of Low Frequency Electromagnetic Fields over the Apoptotic Pathway. International Neuroimplantation Congress Istanbul Turkey. 22-23 jan. 2010. **Poster**
- E5** **Zafer Akan**, Tulunay Aysin, Ayse İnhan Garip: Antioxidants may protect cancer cells against apoptosis and increase cell viability. International cell death society, symposium. Kemer Turkey. 28-31 may 2010 **Poster**
- E6** Ufuk Cobanoglu, Halit Demir, Ayşegül Çebi, Fuat Sayır, Hamit Hakan Alp, **Zafer Akan**, Ebubekir Bakan. Lung cancer risk assessment: Lipid peroxidation, DNA damage and CoenzymeQ10 in the lung cancer patients.

### CONGRESS ATTENDS

- XII. National Biophysics Congress, Istanbul, Turkey 7-9 September 2000
- XIII. National Biophysics Congress, Eskisehir, Turkey 5-7 September 2001

- XIV. National Biophysics Congress, Ankara Turkey 4-6 September 2002
- XVI. National Biophysics Congress, Ankara Turkey 19-21 September 2004
- XVII. National Biophysics Congress, Izmir Turkey 7-9 September 2005
- İstanbul Kültür University Chaos Symposium Istanbul, Turkey 12-13 may 2006
- XVIII. National Biophysics Congress, Ankara Turkey 6-9 September 2006
- 4th International Student Conference of the Balkan Physical Union Bodrum, Turkey 29-1 Sept. 2006
- Apoptosis, Relation with diseases. Izmir, Turkey 07 December 2006
- 7th European Biophysics Congress Genova Italy 11-25 july 2009
- International Neuroimplantation Congress Istanbul Turkey 22-23 jan. 2010
- International Cell Death and apoptosis Congress, Side Turkey, May 28-31, 2010

### **Journal Editorial Board**

IJWHR International Journal of Women Health and Reproduction Sciences

### **Journal Reviewer**

TIV Toxicology in Vitro

EMAS Environmental Monitoring and Assessment.

IJWHR International Journal of Women Health and Reproduction Sciences

AJCS American Journal of Cancer Science

### **Advisory**

Büşra Başkurt                      Biophysics M.Sc

Peray Ayhan                        Biophysics M.Sc.

Melek Dikilitaş                    Pharmacy M.Sc.

## **SCIENTIFIC ATTENDS**

- F1** Session Chair and Scientific Committee [International Neuroimplantation Congress](#) Istanbul Turkey 22-23 jan. 2010
- F2** Web editor (2005-2008), Journal of Medical Research <http://www.tader.org>

## **CERTIFICATES**

- G1** Animal studies certification from Marmara University School of Medicine Department of Animal Lab.
- G2** Nuclear particle study permissions from environmental health department UNC NC-USA
- G3** Apoptosis ilişkili hastalıklar ve güncel belirleme yöntemleri kursu

## **RESEARCH AND EDUCATIONAL INTERESTS**

Environmental Biophysics, Sound and Noise Pollution, Effect of Electromagnetic Fields on Biological Systems, Environmental Radiation, Molecular basis of Cancer, Boron Neutron Capture Therapy, Apoptosis

## **MEMBERSHIPS**

Member of [Ulusal Türk Biyofizik Derneği](#) (National Turkish Biophysical Society)

Member of [Moleküler Kanser Araştırma Derneği](#) (Molecular Cancer Research Society)

Member of [European Biophysical Society](#) (EBSA)

Member of The European Association for Cancer Research (EACR)

## **REFERENCES:**

Prof. Dr. Aziz Sancar University of North Carolina, School of Medicine Department of Biochemistry-Biophysics

[aziz\\_sancar@med.unc.edu](mailto:aziz_sancar@med.unc.edu)

Prof. Dr. M. Ali KORPINAR Istanbul University, Cerrahpasa School of Medicine, Dept. of Biophysics  
[korpinar@istanbul.edu.tr](mailto:korpinar@istanbul.edu.tr)

Prof. Dr. M. Tunaya KALKAN Istanbul University, Cerrahpasa School of Medicine, Dept. of Biophysics

[tunaya@istanbul.edu.tr](mailto:tunaya@istanbul.edu.tr)

Prof. Dr. Beki KAN Marmara University, School Of Medicine Department of Biophysics

[bekikan@marmara.edu.tr](mailto:bekikan@marmara.edu.tr)

Prof. Dr. Metin TULGAR Yeditepe University, School Of Medicine Department of Biophysics

[metintulgar@yahoo.com](mailto:metintulgar@yahoo.com)