

# ÖZGEÇMİŞ

## Belma Turan

### Kişisel bilgiler:

**Doğum yeri ve yılı:** January 01, 1953, Silifke, Turkey

**Bildiği yabancı diller:** İngilizce

**Tel (ofis):** 312 595 8186

### Akademik bilgiler:

#### Eğitim:

- ODTÜ, Fizik (Ankara, 1976)
- Doktora, Biyofizik, Ankara Üniversitesi Tıp Fakültesi (Ankara, 1982)
- Doçent, Ankara Üniversitesi Tıp Fakültesi Biyofizik (Ankara, 1987)
- Profesör, Ankara Üniversitesi Tıp Fakültesi (Ankara, 1993)

#### Ödüller ve burslar:

- **BURS:** International Centre for Theoretical Physics grant, 1984, Trieste, ITALY (2 ay)
- **BURS:** International Centre for Theoretical Physics grant, 1986, Trieste, ITALY (2 ay)
- **BURS:** Ankara Univ. Res. grant, INSERM, 1992, Orsay-Paris, FRANCE (3 ay)
- **BURS:** French Ministry of Foreign grant, INSERM, Orsay-Paris, 1993, FRANCE (3 ay)
- **BURS:** French Ministry of Foreign grant, INSERM-Montpellier, 1994, FRANCE (2 ay)
- **BURS:** Ottawa Uni., Physiology Depart. postdoctoral grant, Ottawa, 1995, CANADA (5 ay)
- **BURS:** French Ministry of Foreign Grant, INSERM-Montpellier, 1996, FRANCE (1 ay)
- **BURS:** French Ministry of Foreign Grant, INSERM-Montpellier, 1997, FRANCE (1 ay)
- **ÖDÜL:** IX. Ulusal Biyofizik Kongresi Poster birincilik ödülü, 1997.
- **BURS:** French Ministry of Foreign Grant, INSERM-Montpellier, 1998, FRANCE (4 ay)
- **ÖDÜL:** Ankara Üniversitesi Sağlık Bilimleri Alanında Araştırma birincilik ödülü, 1998
- **BURS:** French Ministry of Foreign Grant, INSERM-Montpellier, 1999, FRANCE (3.5 ay)
- **ÖDÜL:** XI. Ulusal Biyofizik Kongresi Poster ikincilik ödülü, 1999
- **BURS:** French Ministry of Foreign Grant, INSERM-Montpellier, 2000, FRANCE (2 hafta)
- **BURS:** Visiting scientist, Inst. Cardiovascular Sci, Manito Univ. Winnipeg, 2003, CANADA (4 ay)
- **BURS:** French Ministry of Foreign Grant, INSERM-Montpellier, 2003, FRANCE (2 ay)
- **BURS:** French Ministry of Foreign Grant, INSERM-Montpellier, FRANCE 2004; 2005; 2006; 2007
- **ÖDÜL:** Travel Award of Heart Failure Society of America, USA, 2004
- **ÖDÜL:** Distinguished Service Award in Cardiovascular Sciences, Medicine and Surgery by International Academy of Cardiovascular Sciences, 2005
- **ÖDÜL:** International Travel Award of American Biophysical Society, USA, 2006



- **ÖDÜL:** Türk Diyabet Vafkı ve Diyabet Derneđi, 2006 yılı “Deneysel Diyabetoloji Kategorisi” Birincilik ödülü.
- **ÖDÜL:**Lifetime Achievement Award in Cardiovascular Sciences, Medicine and Surgery of by International Academy of Cardiovascular Sciences, 2011.
- **BURS:** Visiting professor: NIEHS, North Carolina, 3 months, 2012
- **ÖDÜL:** Excellence in Cardiovascular Sciences Award by International Academy of Cardiovascular Sciences, 2014.
- **ÖDÜL:** Türk Diyabet Vafkı ve Diyabet Derneđi, 2017 yılı “Deneysel Diyabetoloji Kategorisi” Birincilik ödülü.
- **ÖDÜL:** Sinan DEĞİRMENCİ, Yusuf OLGAR, Belma TURAN: TÜRK BİYOFİZİK DERNEĐİ, 28-29. Ulusal Biyofizik Kongresi, Eylül 2017, Poster Birincilik ödülü.

### **Bilimsel dernek üyelikleri:**

- Principal Member of Turkish Biophysical Society since 1988
- Member of Turkish Physiological Sciences Society since 1988
- Member of American Biophysical Society since 1995
- Member of Union of European Physiological Society since 2000
- Member of International Society of Heart Research since 2002
- Elected as Fellow of International Academy of Cardiovascular Sciences, since 2005

### **Uluslar arası dergilerde bilimsel danışmanlık aktiviteler:**

- 1- Cardiovascular Toxicology
- 2- Biological Trace Element Research
- 3- Diabetes Review Letters
- 4- International Journal of Biomedical Sciences
- 5- J. Experimental and Clinical Cardiology
6. Molecular & Cellular Biochemistry
7. Molecular Biology Reports
8. J. Cardiology and Therapy

### **Danışmanlık ve panelistlik Aktiviteleri:**

- Reviewer and panelist in projects of TUBITAK (THE SCIENTIFIC AND TECHNOLOGICAL RESEARCH COUNCIL OF TURKEY)
- Reviewer and panelist in EU F7 frame
- Reviewer and panelist in EU Horizon 2020

### **Araştırma alanları:**

Kardiak elektrofizyoloji

Kalsium iyon regülasyonu

Çinko iyon regülasyonu

Oksidan stres

Antioksidanlar

Diyabetik kardiyomiyopati

### **Uluslar arası bilimsel toplantı organizasyonları**

- February 2-7, 2005, Antalya, Türkiye: NATO ARW on “Stress-induced Biochanges in the Heart: from Genes to Bedside” (düzenleyici).
- May 12-16, 2008, İstanbul, Türkiye: NATO-ARW and ICGEB Meeting on “Translational Knowledge for Heart Health” (düzenleyici).
- May 4-8, 2011, Ankara, Türkiye: ADVANCED WORKSHOP on NEW APPROACHES in CARDIOVASCULAR DISORDERS: From genes & molecules to clinical applications (düzenleyici).
- Workshop on COST Action TD1304 Zinc-Net, November 1-4, 2015 Antalya, Turkey (düzenleyici).

### **Ulusal ve Uluslararası projeler:**

A- TÜBİTAK projeleri

Proje No	Projedeki Görevi	Proje Adı	Başlama-Bitiş Tarihi	Destek Miktarı (TL)
MISAG-27	Araştırmacı (tamamlandı)	Osteoporotik insan ve hayvan kemiklerinde malzeme özelliklerinin mekanik ve ultrasonik yöntemlerle incelenmesi	07/09/1992 31/03/1995	950,000 TL
SBAG-1253	Araştırmacı (tamamlandı)	Kalp ve damarda endotel ve kas hücreleri ilişkilerinin incelenmesi	01/11/1994 01/11/1997	500,000 TL
SBAG-AYD-69	Yürütücü (tamamlandı)	Kalbin regülasyonunda oksidan stresin rolünün elektrofizyolojik yöntemlerle incelenmesi	01/10/1995 01/10/1996	60,000 TL
SBAG-1732	Yürütücü (tamamlandı)	Antioksidanların diyabette gözlenen çeşitli organ fonksiyon bozukluklarına etkilerinin elektrofizyolojik, biyomekanik ve moleküler biyofizik yöntemlerle incelenmesi	01/08/1997 01/08/1999	1.610.000,00 TL

SBAG-104S591	Yürütücü (tamamlandı)	Diyabetik sıçan kardiyomiyositlerinde beta-adrenerjik reseptör yanıtları	01/07/2005 01/07/2007	147.600,00 -
SBAG-105S149	Yürütücü (tamamlandı)	Diyabetik kardiyomiyopatide tedavi için yeni ilaç hedefleri	01/01/2006 31/12/2007	13.00.00 -
SBAG-107S304	Yürütücü (tamamlandı)	Tip I diyabetik kardiyomiyopatide yeni bir tedavi hedefi: Ryanodin reseptörleri	15/04/2008 15/04/2011	136.835,00-
SBAG-107S427	Yürütücü (tamamlandı)	Kardiyomiyositlerde Hücre içi $Zn^{2+}$ Homeostazi: Hücre içi Serbest $Zn^{2+}$ ve Matriks Metalloproteinazların	01/03/2008 01/03/2011	405.700,00-
SBAG-109S267 (COST)	Yürütücü (tamamlandı)	Hipoksinin normal ve hiperglisemik HL-1 kardiyomiyositlerinde Na/H değiş-tokuşucu ve Na/HCO <sub>3</sub> ko-transportu aktive ve ekspresyonu üzerine etkileri:	15 Mart 2010/15 Mart 2013	305.520,00 TL
SBAG-111S042	Yürütücü (tamamlandı)	Kalp fonksiyon bozukluğunda rol alan kontrolsüz sarkoplazmik retikulum $Ca^{2+}$ sızıntısı ile ilgili moleküler mekanizmalar	01 Eylül 2011/01 Eylül 2014	351.000,00 TL
SBAG-113S466 (COST)	Yürütücü (sürüyor)	Kardiyomiyositlerde endoplazmik retikulum stresi, hücre içi serbest $Zn^{2+}$ regülasyonu ve mitokondri arasındaki çapraz ilişkisinin kalp fonksiyon bozukluğu patolojisindeki rolünün incelenmesi	15 Kasım 2013/15 Kasım 2016	446.640,00 TL
SBAG-113S296	Araştırmacı (tamamlandı)	Hipertrofik Kalp Yetmezliği Modelinde Rho-Kinaz'ın Rolünün Elektrofizyolojik Yöntemlerle İncelenmesi	15/09/2013 15/09/2015	187.000. TL
SBAG-214S254	Yürütücü (sürüyor)	Hipertrofik kardiyomiyositlerde $\beta_3$ -adrenerjik reseptör aktivasyonunun hücre içi $Ca^{2+}$ ve $Na^+$ homeostazları üzerindeki olası rolünün incelenmesi	15/04/2015 15/04/2018	584.159 TL
SBAG-216S979 (COST)	Yürütücü (yeni kabul edildi)	Çinko- taşıyıcıları ve mitokondri ilişkisinin yaşlanmaya bağlı kalp fonksiyon bozukluğundaki rolünün incelenmesi	2017-2020	530.000 TL

## Diğer Projeleri (DPT, BAP)

Proje No	Projedeki Görevi	Proje Türü (**) ve Adı	Başlama-Bitiş Tarihi	Destek Miktarı (TL)
90-09-00-28	Yürütücü (tamamlandı)	Kalp kası regülasyonunda uyarılma-kasılma çiftlenimi üzerine etkili faktörlerin araştırılması	10/01/1991 10/01/1994	103.000,00 TL
98-09-00-05	Yürütücü (tamamlandı)	Deneysel diyabetik kardiyomiyopatinin Ca-kanal kinetiklerine etkisinin patch-clamp yöntemi ile incelenmesi	01/01/1997 01/10/1998	90.000 TL

99-09-00-10	Yürütücü (tamamlandı)	Deneysel diyabetik sıçan kalbi atriyal ve papiller kasında gözlenen değişikliklerin simültane olarak elektrofizyolojik yöntemlerle incelenmesi.	19/11/1999 29/11/2001	85.000 TL
2001-08-09-061	Yürütücü (tamamlandı)	Anjiyotensin reseptör antagonistlerinin deneysel diyabetik sıçan kalbi elektriksel aktivitesine etkileri	01/06/2001 01/11/2002	65.000 TL
2003-08-09-110	Yürütücü (tamamlandı)	Anjiyotensin II reseptörünün deneysel diyabetik sıçan kalbi uyarılma-kasılma çiftlenimindeki rolü	01/01/2003 01/01/2005	95.000 TL
2003-08-09-098	Yürütücü (tamamlandı)	Deneysel diyabetik kardiyomiyopatide hücre içi serbest iyon derişimi	25/02/2003 25/02/2005	50.000 TL
DPT 99K-120190	Yürütücü (tamamlandı)	Hücre içi iyon görüntüleme sistemi	01/01/2000 31/12/2002	250.000,00 TL
DPT 2003K-120-240	Yürütücü (tamamlandı)	İki Foton Floresan Lazer Mikroskopi Hücre sel Görüntüleme Sistemi	31/12/2006	460.000,00-
2006-08-09-233	Yürütücü (tamamlandı)	Diyabetik sıçan kalbinin omega-3E'ye mekaniksel ve elektriksel yanıtları	27/04/2006 27/04/2008	48.000,00 -
DPT 2001K-120-240:	Yürütücü (tamamlandı)	Anjiyotensin reseptör antagonistlerinin diyabetik kardiyomiyopati tedavisinde	26/04/2005 26/04/2007	70.280,00 -
09B3330011	Yürütücü (tamamlandı)	Kardiyomiyositlerde hücre içi Na <sup>+</sup> ve H <sup>+</sup> homeostazında rol oynayan faktörlerin incelenmesi	15/04/2009 15/04/2011	53.927,00-
12B3330005	Yürütücü (tamamlandı)	Kardiyomiyosit ve nöronal kültüre hücreler hücre içi serbest iyonların değişimlerinin karşılaştırmalı olarak	02/01/2012 01/01/2014	97.099,00 TL

## Doktora tez danışmanlığı

- 1- **Ömer Hotomaroğlu:** Ventrikül kasılmasında oksidan stresin rolünün elektrofizyolojik olarak incelenmesi, 1996.
- 2- **Mehmet Uğur:** Hücre dışı adenosin trifosfat uygulamasının izole kardiyak miyositlerdeki etkilerinin tüm-hücre patch clamp yöntemi ile incelenmesi, 2000.
- 3- **Murat Ayaz:** Deneysel diyabetik kardiyomiyopatide hücre içi serbest iyon derişimi, 2004
- 4- **Semir özdemir:** Anjiyotensin II reseptörünün deneysel diyabetik sıçan kalbi elektriksel aktivitesindeki rolü, 2004.
- 5- **Nazmi Yaraş:** Diyabetik sıçan kalbi kalsiyum homeostazını düzenleyen mekanizmaların incelenmesi, 2007.
- 6- **Ayça Bilginoğlu:** Kardiyomiyositlerde hücre içi sodyum homeostazında rol oynayan faktörlerin incelenmesi, 2010

**7- Erkan Tuncay:** Kalp fonksiyon bozukluğunda rol oynayan hücre içi  $Zn^{2+}$  derişimi ve kontrolsüz sarkoplazmik retikulum  $Ca^{2+}$  sızıntısı arasındaki ilişkinin elektrofizyolojik ve biyokimyasal tekniklerle incelenmesi, 2014

**8- H. Burak Kandilci;** İzole memeli ventriküler miyositlerinde sodyum-hidrojen deęiş-tokuşusunun hioksik duyarlıęı ATPnin rolü, 2014.

**9- Esma Nur Okatan:** Diyabet kaynaklı kalp fonksiyon bozukluğunda hücre içi iyon derişimleri ile fosfodiesterazların aktiviteleri arasındaki ilişkinin tip 2 obez-sıçan modelinde incelenmesi, 2015.

**10- Ayşegül Toy Durak:** İnsülin Direnci Gelişmiş Sıçan Kardiyomiyositlerinde İyon Kanallarının Fonksiyon ve Yapısının Elektrofizyolojik ve Moleküler Biyolojik Tekniklerle İncelenmesi, (devam ediyor).

**11- Yusuf Olęar:** Çinko- taşıyıcıları ve mitokondri ilişkisinin yaşlanmaya baęlı kalp fonksiyon bozukluğundaki rolünün incelenmesi, (devam ediyor).

### **Yüksek lisans tez danışmanlıęı:**

**1- Mesut Kılıç:** Selenyum ve E vitamin eksikliği: papiller kasın elektrofizyolojik ve mekeniksel fonksiyonları, 1997.

**2- Murat Ayaz:** Selenyumun deneysel diyabetik sıçan kalbi ventrikül kasının elektriksel ve mekaniksel aktivitesi üzerine etkileri, 2000.

**3- Tülay Tuncer:** E vitamininin deneysel diyabetik sıçan atriyal aktiviteleri üzerindeki etkilerinin elektrofizyolojik yöntemlerle incelenmesi, 2000.

**4- Ayça Bilginoęlu:** Diyabetik kardiyomiyopatide  $\beta$ -adrenergic reseptör yanıtları, 2005.

**5- Pınar Şam:** Yaşlanmanın kalpteki  $\beta$ -adrenergic reseptör yanıtları üzerindeki etkisinin incelenmesi, 2006.

**6-Evrin Tanrıverdi:** Deneysel diyabette gözlenen vasküler fonksiyon bozukluklarında sodyum selenat uygulamasının etki mekanizmalarının incelenmesi, 2007.

**7- Erkan Tuncay:** Diyabetik kardiyomiyopatide seçici olmayan beta blokör etkilerinin elektrofizyolojik yöntemlerle incelenmesi, 2008.

**8- Aytaç Seymen:** Yaşlanmaya baęlı kalp fonksiyon deęişikliklerinde beta adrenerjik sistemin rolünün elektrofizyolojik yöntemlerle incelenmesi, 2008.

**9- Esma Nur Zeydanlı:** Matriks metalloproteinazların diyabetik sıçanların endotel baęımlı damar fonksiyonlarındaki rolü, 2008.

**10- Samet Yıldırım:** Diyabetik kardiyomiyopatide mikroRNA'ların rolü, 2010.

**11- Vedia Deletioęlu:** Çinko ve selenyumun antioksidan özelliklerinin oksidatif stres indüklü DNA radikallerinin immün-spin yakalama yöntemi kullanılarak incelenmesi, 2015.

**12- Sinan Deęirmenci:** Ventriküler kardiyomiyositlerde hücre içi serbest  $Zn^{2+}$  artışının K-kanal akımlarına etkilerinin incelenmesi, 2016.

### **Katıldığı uluslararası bilimsel toplantılar ve çalıştaylar:**

1- NATOAdvanced Study Institute "Technical Advances in Biomedical Physics" October 14-28, 1982, İstanbul, Türkiye.

- 2- NATO Advanced Study Institute "NMR of Liquid Crystals", July 26- August 8, 1983, Italy.
- 3- ICTP, IAEA, Third World Academy of Sciences "II. Summer Course on Biophysics: Macromolecules, Structures and Functions", July 30- October 4, 1984, Triesre, Italy.
- 4- ICTP, IAEA, Third World Academy of Sciences "Third Summer Course on Biophysics: Membranes", Sept.- 8 Octb. 11, 1986, Trieste, Italy.
- 5- NATO ASI "International Summer School on Organization and Functions of the Eukaryotic Genome", Sept. 1- 10, 1988, Island of Spetsai, Greece.
- 6- NATO ASI, FEBS and EMBO "Dynamics and Biogenesis of Membranes" June 12- 23, 1989, Cargese-Corsa, France.
- 7- NATO ASI, FEBS, EMBO "Cellular Regulation by Protein Phosphorylation", Sept. 5- 15, 1990, Les Maures, France.
- 8- NATO ASI, FEBS, EMBO "Dynamics of Membrane Assembly", June 17- 29, 1991, France.
- 9- International School of Biophysics, 20 th Course: Bioelectrochemistry IV, Nerve- Muscle Functions, Ettore Majorana Centre for Scientific Culture, Octb. 20- Nov. 1, 1991, Erice, Italy.
- 10- International School of Biophysics, 33<sup>rd</sup> Course: Excitability, secretion, and transport-molecules to medication, Ettore Majorana Centre for Scientific Culture, April 3-13, 2002, Erice- Italy.

## **Yayınlar listesi**

### **Kitap:**

**Belma Turan and Naranjan S. Dhalla:** Advances in Biochemistry in Health and Disease: Volume 9, Diabetic Cardiomyopathy. Biochemical and Molecular Mechanisms, Springer, 2013. ISBN: 978-1-4614-9316-7.

### **Kitap bölümleri:**

- 1- Yılmaz A., Turan B.** Measurements and Calculations of NMR spin-lattice relaxation time in human blood, Proceedings of the II. International conference on applications of physics to Medicine and Biology, Ed: Z. Bajker, P. Baxa, C. Franconi, World Scientific publ.co. Singapore, 557-558,1984
- 2- Yılmaz A., Altıntaş C., Turan B.** NMR relaxation mechanism in serum from healthy subjects, Proceedings of the XXII Congress of Ampere on Magnetic Resonance and Related Phenomena, Ed: K.A. Muller, R. Kind, J. Roos, Zurich, 483-484,1984
- 3- Yıldırım G., Zaloğlu N., Turan B., Temizer A., Koç E., Timur A.** The Effects of Lithium on the Levels of Trace Elements in Liver and Spleen and Serum, Trace Elements in Health and Disease: Trace'89. Ed. Yüregir G. T., Donma O., Kayrın L., Türkiye, 403-408,1991
- 4- Zaloğlu N., Yıldırım G., Koç E.,Turan B., Saran Y.,Temizer A., Timur A.** The Effects of Lithium on Liver and Spleen Tissues and Serum, Trace Elements in Health and Disease: Trace'89. Ed. Yüregir G. T., Donma O., Kayrin L., Türkiye, 397-402, 1991

- 5- Yavuzer S., Turan B.** Infrared Laser Effects on Excitation-Contraction Coupling and the Level of Some Metals of skeletal Muscle, Trace Elements in Health and Disease: Trace'89. Ed. Yüregir G. T., Donma O., Kayrın L., Türkiye, 291-297, 1991
- 6- B. Turan.** Relationship Between Redox Regulation and  $\beta$ -Adrenergic Responses in the Heart. *Advances in Biochemistry in Health and Disease, Signal Transduction in Cardiovascular System in Health and Disease*, Ed: A. Srivastava and M. Srivastava, Springer, 2008.
- 7- B. Turan, G. Vassort.** Cardioprotective Roles of Selenium in Diabetes. *Nutritional and Therapeutic Intervention of Diabetes and Metabolic Syndrome*. Ed: D. Bagchi and S. Nair, Elsevier, 2011.
- 8- M. Ayaz and B. Turan.** A critical balance between oxidative stress and antioxidant defence in cardiovascular system under hyperglycemia: A summary of experimental studies. *Advances in Biochemistry in Health and Disease: Volume 9, Diabetic Cardiomyopathy. Biochemical and Molecular Mechanisms*, Springer, 2013. Ed: B. Turan and N. S. Dhalla, 2013.
- 9- S. Ozdemir, N. Yaras and B. Turan:** Sex differences and diabetes mellitus in cardiovascular system. *Advances in Biochemistry in Health and Disease: Volume 9, Diabetic Cardiomyopathy. Biochemical and Molecular Mechanisms*, Springer, 2013. Ed: B. Turan and N. S. Dhalla, 2013.

### **Dergi makaleleri (SCI kapsamında):**

- 1. Delilbaşı E., Turan B., Yücel E., Temizer A., Kır S.** The quantitative investigation of infrared Laser effects on the level of copper and zinc in various tissues, *Clinical Physics and Physiological Measurements*, 9(4), 375-377, 1988.
- 2. Delilbaşı E., Turan B., Yücel E., Şaşmaz R., Işimer A., Sayal A.** Selenium and Behçet's Disease, *Biological Trace Element Research*, 28(1), 21-25, 1991.
- 3. Turan B., Dalay N., Delilbaşı E.** A Possible Relationship Between Serum Satellite DNA and Cellular Antioxidative Mechanism, *Spectroscopy Letters*, 24(6), 865-871, 1991.
- 4. Turan B., Yılmaz A., Dalay N.** Effects of Selenium Supplementation on the NMR Proton Relaxation Time  $T_1$  in Plasma, *Spectroscopy Letters* 25(8), 1405-1410, 1992.
- 5. Turan B., Delilbaşı E., Dalay N., Sert S., Afrasyap L., Sayal A.** Serum Selenium and Glutathione-Peroxidase Activities and Their Interaction with Toxic Metals in Dialysis and Renal Transplantation Patients, *Biological Trace Element Research*, 33(3), 95-102, 1992.
- 6. Turan, B., Delilbaşı E., Sınav, B., Akkaş, N.** Zinc-Calcium Interaction in heparin Induced osteoporotic Rabbit Plasma, *Trace Elements and Electrolytes*, 13 (3), 138-142, 1996.
- 7. Turan, B., Desilets, M., Açıkan, L. N., Hotomaroğlu, Ö., Vannier, C., Vassort, G.** Oxidative Effects of Selenite on Rat Ventricular Contractility and Ca Movements, *Cardiovascular Research*, 32, 351-361, 1996.
- 8. Turan B., Koç E., Zaloğlu N.** Deficiency and Toxicity of Selenium Alter the Acetylcholine stimulated contraction of Isolated Rabbit Ileum. *Trace Elements and Electrolytes*, 14(1), 13-18, 1997.



9. **Turan B., Zaloğlu N., Koç E., Saran Y., Akkaş N.** Dietary Selenium and Vitamin E Induced Alterations in Some Rabbit Tissues. *Biological Trace element Research*, 58 (1-2), 1-14, 1997.
10. **Turan B., Fliss H., Desilets M.** Oxidant-Induced Alteration of Intracellular Free-Zn<sup>2+</sup> Concentration in Rabbit Ventricular Myocytes, *Am. J. Physiology*, 272, (Heart Circ.Physiol. 41), H2095-H2106, 1997.
11. **Turan B., Balçık C., Akkaş N.** Effect of Dietary Selenium and Vitamin E on the, Biomechanical Properties of Rabbit Bones. *Clinical Rheumatology*, 16(5), 441-449, 1997.
12. **Akkaş N., Yeni Y. N., Turan, B., Delilbaşı, E., Günel, U.** Effect of Medication on Biomedical Properties of Rabbit Bones: Heparin Induced Osteoporosis, *Clin. Rheumatology*, 16(6), 585-595, 1997.
13. **Turan. B, Koç E., Hotomaroğlu O., Kızıltan E., Yıldırım S., Demirel E.** Dose and Tissue Dependent Effects of Sodium Selenite on Muscle Contraction. *Biological Trace Element Research*, 62, 265-280, 1998
14. **Baştuğ M., Ayhan S., Turan B.** The Effects of Altered Selenium and Vitamin E Nutritional Status on Learning and Memory of Third-generation Rats, *Biol. Trace Elem. Research*, 64,151-160, 1998.
15. **Demirel-Yılmaz E., Dinçer D., Yılmaz G., Turan B.** Selenium and Vitamin E alter the microvascular permeability of rat organs. *Biological Trace Element Research*, 64, 161-168, 1998.
16. **Turan B., Hotomaroğlu Ö., Kılıç M., Demirel-Yılmaz E.** Cardiac Dysfunction induced by low and high diet antioxidant levels comparing selenium and vitamin E in rats. *Regulatory Toxicology and Pharmacology*, 29, 142-150, 1999.
17. **Turan B., Saran Y., Can B., Güven M.C., Sayal A.** Effect of high dietary selenium on the ultrastructure of rabbit cardiac muscle cell. *Med. Sci. Res.*, 1999, 27(12); 795-799.
18. **Ulus N.N., N.L. Açıkan, Turan B., Tezcan E.F.** The effect of selenium on glutathione redox cycle enzymes of some rabbit tissues. *Trace Elements and Electrolytes*, 2000, 17(1); 25-29.
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