USE OF URINARY TITIN FRAGMENT AS A POTENTIAL BIOMARKER FOR MUSCLE DAMAGE DUE TO DIFFERENT EXERCISE CONFIGURATIONS: A SYSTEMATIC REVIEW

Barkın KIRAK

ORCID 0000-0002-6100-9071
BURSA ULUDAG UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCEINCES
COACHING EDUCATION DEPARTMENT
MSc PROGRAM

GRADUATION DATE:

SUPERVISOR

Prof. Dr. ŞERİFE VATANSEVER
ORCID 0000-0003-4722-5197
BURSA ULUDAG UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCIENCES
COACHING EDUCATION DEPARTMENT
BURSA – TÜRKİYE

KEY WORDS

- ✓ Exercise-Induced Muscle Damage
- ✓ Titin
- ✓ Biomarker
- ✓ Eccentric Contraction

CONTACT

E-MAIL:
barkinkirak@gmail.com

THESIS SUPERVISOR

TELEPHONE:
0224 2942923

E-MAIL:
serife@uludag.edu.tr


T.C.
BURSA ULUDAĞ ÜNİVERSİTESİ
SAĞLIK BİLİMLERİ ENSTİTÜSÜ
SPOR BİLİMLERİ FAKÜLTESİ
ANTRENÖRLÜK EĞİTİMİ
ANA BİLİM DALI

FARKLI EGZERSİZ YAPILANDIRMALRINA BAĞLI KAS HASARINDA POTANSİYEL BİR BİYOBELİRTEÇ OLAN ÜRİNER TİTİN FRAGMANININ KULLANIMI: SİSTEMATİK DERLEME

Barkın KIRAK

(YÜKSEK LİSANS TEZİ)

BURSA-2024

BARKIN KIRAK
ANTRENÖRLÜK EĞİTİMİ ANA BİLİM DALI YÜKSEK LİSANS TEZİ 2024

THESIS ABSTRACT

The aim of this study is to reveal the relationship between the kinematics of urinary titin fragment concentration and other muscle damage markers in the evaluation of exercise-induced muscle damage, and to create a perspective for the future use of this potential biomarker. In this systematic review, the PRISMA declaration was taken as a guide. The literature search was conducted through 5 different databases (Pubmed, Web of Science, Medline, Scopus, Science Direct). Criteria for including the reviewed studies in the compilation; (1) healthy individuals; (2) studies involving muscle damage resulting from exercise intervention; (3) Use of at least one serum muscle damage biomarker or imaging technique; (4) at least one of the following evaluations: muscle pain, maximum voluntary contraction, muscle strength, and joint range of motion; (5) muscle damage markers were reported with repeated measurement results. A total of 9 studies were included in the current systematic review by complying with the established criteria. When the studies are examined; urinary titin fragments showed significant correlations with other markers. As a result, it appears that UTF may be an important biomarker of exercise-induced muscle damage and can be used as a new and potential biomarker to detect muscle damage sensitively.

.

APPLICATION AREAS OF THE THESIS RESULTS

In the future, the development of rapid and cost-effective kits for assessing urinary titin fragments (UTF) will make it easier and more practical for coaches and sports scientists to monitor exercise-induced muscle damage during field measurements.

ACADEMIC ACTIVITIES

Bölükbaş, M. G., Kırak, B., & Vatansever, Ş. (2022). COVID-19 Pandemi Sürecinde Fiziksel Aktivite Düzeyi, Psikolojik Sağlamlık ve Koronavirüs Anksiyetesi Arasındaki İlişki. *Türkiye Spor Bilimleri Dergisi*, 6(1), 1-13.