Bölüm 2

IN VITRO MODELLEMELERDE ZEBRA BALIĞI-1: PRİMER HEPATOSİT KÜLTÜRÜ[1]

Burak GÖKÇE[2]
Sema İŞİSAĞ ÜÇÜNCÜ[3]

GİRİŞ

Bilindiği üzere hücre ve doku kültürleri, canlı organizmalardan izole edilen hücre ve doku örneklerinin *in vitro* koşullarda, özgün ve yapay ortamlarda canlılıklarını sürdürmesinin sağlandığı süreçlerdir.

Tümüyle denetimli ortamlarda gerçekleştirilen bu süreçler öncelikle, herhangi bir araştırmanın tümünde canlı hayvanların kullanılmamasını sağlayarak birçok etik kaygıyı giderir. Örneğin AB ülkelerinde üretilen ve bu ülkelere ithal edilen vücut bakım ürünlerinin toksikolojik testleri için canlı hayvan kullanımı 2004, *in vivo* deneyler yapılarak üretilen kozmetik ürünlerin satışı da 2013 yılından beri yasaktır. Kozmetik malzeme kullanımı kişisel bir tercihken hava, su, toprak ve besin kirliliği ile hastalıklardan korunma, tanı ve tedavi bütün insanları ilgilendirir. Bu küresel sorunların çözümündeki temel etik yaklaşım, kaçınılmaz laboratuvar deneylerinde kullanılan hayvan sayısını en düşük ve hayvanların konforunu en yüksek düzeyde tutmayı; bunun ötesinde de mümkün olduğunca hücre ve doku kültürlerinin kullanımını gerektirir.

Hücre ve doku kültürlerinin en önemli avantajı, birçok parametre ve fizyolojik koşulun süreç içerisinde rahatça kontrol edilebilmesi ve değiştirilebilmesi, uygulanan ilaç ve/veya kimyasalların doz/konsantrasyon ve uygulama sürelerinin ayarlanabilmesidir. Canlı örneklerde bazı belirsizlikler oluşturan sistemik etkilerin gerçekleşmediği yapay ortamlar, farklı değişkenlerin özel etkilerini daha net olarak izleyebilmeyi ve kimyasalların etki mekanizmalarının daha iyi anlaşılmasını sağlar. Üstelik bu ortamlar hücre göçü gibi izlenmesi güç olgular ve ileri hücresel görüntülemeler için çok uygun koşullar sunar. Bunlara ek olarak kültür ortamlarında deney sonuçları daha kısa sürede gözlenip kaydedi-

[1] Çalışma, yazarın yüksek lisans tezinin bir bölümüne dayanmaktadır.

[2] Ege Üniversitesi Fen Fakültesi Biyoloji Bölümü Bornova 35100 İZMİR. burakgokce00@gmail.com;

[3] Ege Üniversitesi Fen Fakültesi Biyoloji Bölümü Bornova 35100 İZMİR. sema.isisag@ege.edu.tr,

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