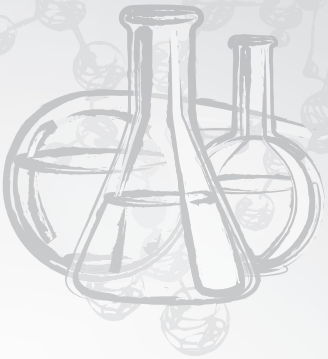
6. BÖLÜM

İLAÇ KEŞFİNDE BİYOKİMYA



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GİRİŞ

Uzun soluklu bir süreç olan ilaç keşfi, yeni bir ilaç hedefinin belirlenmesiyle başlamakta ve bu hedefi etkilemeye yönelik yeni ajanların dizayn edilerek geliştirilmesi aşamalarını içermektedir. Bu uzun süreçte ihtiyaç duyulan önemli bilimsel alanlardan biri de biyokimyadır [1]. Biyolojik olayların, hücresel ve moleküler biyoloji düzeyinde araştırılmasında kimya bilgisini kullanan biyokimya, yapıtaşı aminoasitlerden oluşan proteinler, nükleotidlerden oluşan RNA veya DNA ve lipitlerden oluşan membranlar gibi biyolojik makromoleküllerin yapılarıyla ilgilenen yapısal biyoloji, enzimlerle ilgilenen enzimoloji ve biyobileşenlerin biyolojik sistemde izlediği yollarla ilgilenen metabolizma gibi alanlarla ilişkilidir. Böylece, biyokimya tüm bu alanlarda elde edilen temel bilgilerin ilaç keşfi için kullanılmasını olanaklı hale getirmektedir.

1. İlaç Keşfinde Enzimoloji

Enzim inhibitörleri ve inaktivatörleri insan tıbbında önemli bir dönüşümü gerçekleştirmiştir, ve günümüzde pazarlanan ilaçların neredeyse yarısı enzim inhibitörlerinden oluşmaktadır [2, 3]. En iyi bilinen ve dünyada en çok reçete edilen enzim inhibitörü ilaçlar arasında, ağrı, iltihap oluşumu, ateş ve düz kas kasılmasından sorumlu olan prostaglandin sentezinin ilk adımını katalizleyen

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olarak başvurulmaktadır. İlaç keşfinde biyokimya bilgisinin yanında, son derece sofistike tekniklerin kullanıldığı biyofizik bilgileri ve verileri de kullanılmaktadır. İllerleyen yıllarda, biyokimya ve etkileşimde olduğu diğer bilimlerde gerçekleşecek teknolojik gelişmelerle spesifite, selektivite, güvenilirlik gibi paramatreler açısından daha güçlü ilaç ve ilaç aday bileşiklerinin keşfedileceği düşünülmektedir.

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