

Moleküler Baskılanmış İlaç Taşıyıcı Sistemler

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| Giriş

Moleküler tanıma, çok bileşenli analitlerde bulunan molekülleri seçici olarak tanıma ve bağlama yeteneğidir. Bu yetenek, kimyasal ve biyolojik süreçlerin temelini oluşturur ve kovalent (1) veya hidrojen bağları, elektrostatik etkileşimler, hidrofobik etkileşimler ve zayıf metal koordinasyonu gibi çeşitli kovalent olmayan etkileşimler aracılığıyla gerçekleşir (2). Moleküler baskılama, belirli ligandların sentetik polimerler tarafından tanınmasını sağlayan bir stratejidir ve bu strateji, biyomoleküler tanıma süreçlerinde gözlenen tanıma olaylarını taklit eder (3). Bu yöntemin düşük maliyet, malzeme tüketimi, hızlı olma, tekrar kullanılabilirlik ve geri dönüştürülebilirlik, belirli moleküllerin tespit edilip absorbe edebilme üstünlüğü, yüksek bağlanma ve adsorpsiyon kapasitesi ile çeşitli koşullara karşı yüksek dayanıklılığı gibi avantajları bulunmaktadır.

Moleküler baskılanmış polimerler (Molecular Imprinted Polymers, MIP), plastik antikorlar veya yapay antikorlar olarak da adlandırılır ve şablon moleküllerle şekil, boyut ve fonksiyonellik açısından tamamlayıcı özel tanıma ve bağlanma boşluklarına sahiptirler (4).

MIP'ler çeşitli organik çözücülere karşı inert olmaları, mükemmel termal ve mekanik stabiliteyi sayesinde, birçok alanda örneğin ayırma ve saflaştırma, enzim benzeri kataliz, kimyasal algılama, ilaç geliştirme ve çeşitli biyomedikal uygulamalarda biyolojik reseptörlere alternatif olarak göstermişlerdir (5).

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