

One example of a synthetic biomarker in nanotechnology is the use of gold nanoparticles (AuNPs) for targeted drug delivery in cancer therapy. – **Drug Delivery:** The targeted AuNPs are injected into the body and accumulate at the site of the tumor due to their targeting molecules. – **Application:** The use of AuNPs for targeted drug delivery in cancer therapy is a promising approach that could improve the efficacy and reduce the side effects of cancer treatments. They can be functionalized with targeting molecules, such as antibodies or peptides, and loaded with therapeutic drugs. – **Technique:** AuNPs can be conjugated with targeting molecules that recognize specific receptors on cancer cells. Once at the tumor site, the AuNPs release the therapeutic drugs, which selectively kill the cancer cells while minimizing damage to healthy tissues. – **Advantages:** AuNPs offer several advantages for drug delivery, including their small size, biocompatibility, and ability to be functionalized with targeting molecules. **Explanation:** – **Gold Nanoparticles (AuNPs):** AuNPs are nanoscale particles made of gold atoms. They can also be easily tracked using imaging techniques to monitor their accumulation and drug release. They can also be loaded with therapeutic drugs that are released when the AuNPs bind to the cancer cells.