

## GOLD NANOPARTICLES - VEHICLES FOR THE TARGETED TRANSPORT OF DRUGS

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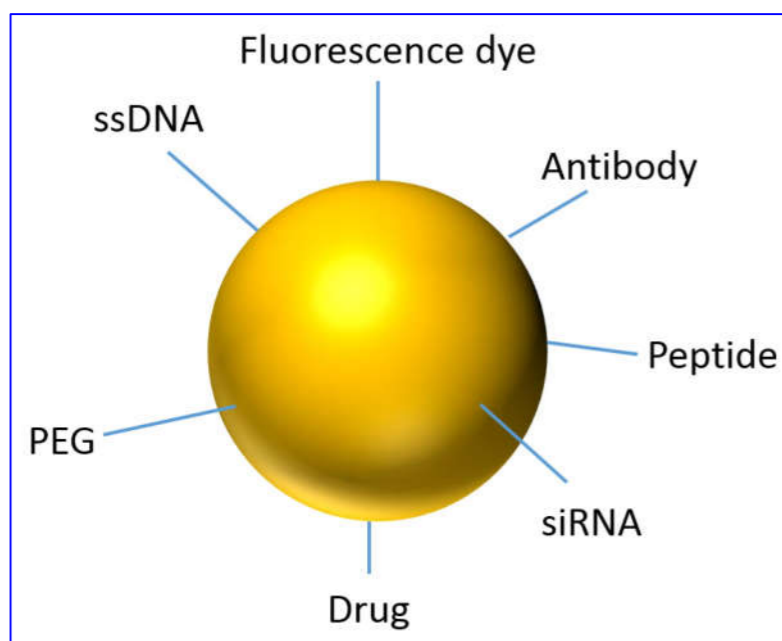
**Introduction.** Gold nanoparticles (NPAu) are an obvious choice for use in medicine due to the possibility of synthesis, stabilization and functionalization, low toxicity and ease of detection.

**Keywords.** Gold nanoparticles, target transport, functionalization, therapeutic agents.

**Purpose.** Description of NPAu as nanosystems capable of transporting drug molecules to the site of action.

**Material and methods.** The main sources of information regarding the structure, methods of production, functionalization, and mechanisms involved in the transport of active substances to the therapeutic target were selected.

**Results.** Gold nanoparticles have emerged as an excellent candidate for application in the release of various molecules of biologically active substances useful to the target site. For the delivery of useful molecules, NPAu requires functionalization such as PEGylation, conjugation of peptides and amino acids, or functionalization with oligonucleotides (fig.1). Another prerequisite for the effective release of therapeutic agents is the presence of various internal stimuli (glutathione, pH and enzymes) and external stimuli (light, etc.) (fig.2). NPAu allow a large amount of drug to be loaded due to its large surface area and versatile surface chemistry.



**Conclusions.** Thus, NPAu are a very promising nanosystem in order to improve the bioavailability of various molecules of biologically active substances with a high degree of infiltration into cells.

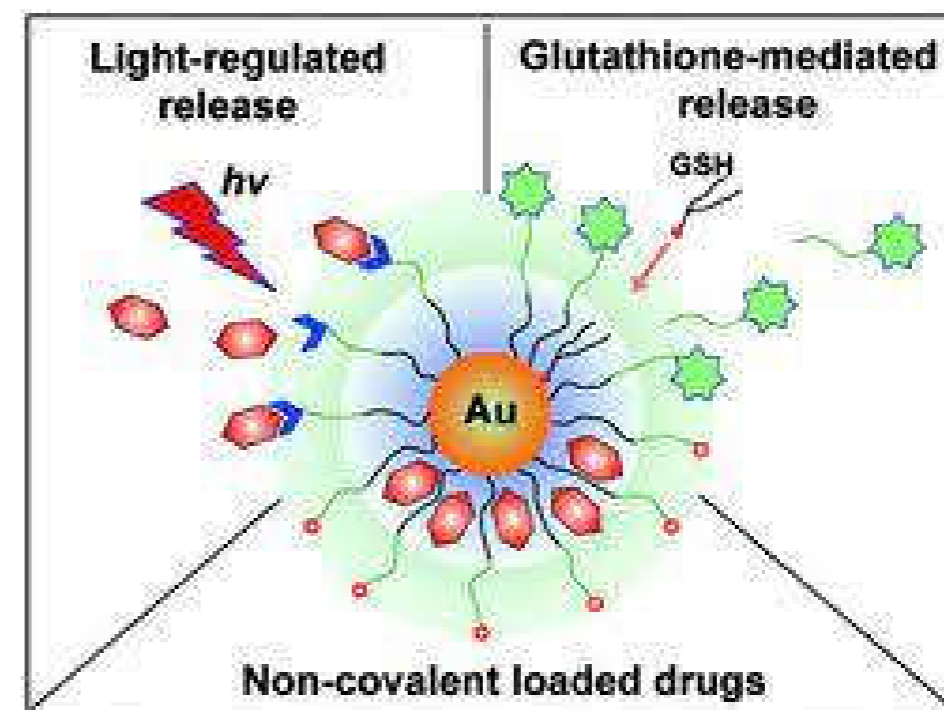


Fig. 1. Functionalization of the MPAu with : PEG, conjugation of peptides and amino acids, or oligonucleotides:  
<https://www.mdpi.com/2076-3417/10/11/3824/htm>

Fig 2. Effective release of therapeutic agents is the presence of various internal stimuli (glutathione, pH and enzymes) and external stimuli (light, etc.)  
<https://pubs.rsc.org/en/content/articlelanding/2009/nr/b9nr00112c>