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Biodegradable Nanorobot for Targeted Drug Delivery: A Futuristic Approach for Safer Cancer Therapy

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One intrusive method of medicine delivery is intravenous injection utilizing syringes and IV drips. The technique is uncomfortable at first, and as the hand swells, it becomes harder to inject medication or administer nourishing solution intravenously. Later, the position is altered, which makes the treatment even more painful. Because the medicine is unlocalized when administered using this method, it affects nearby cells, resulting in greater side effects rather than a quicker recovery from the illness. Giving the patient more medication will result in more adverse effects, which will be challenging. The use of nanotechnology as a tool would facilitate the drug delivery method. The size of the nanorobot (10 nm to 200 nm) will depend on the size of the sick cell and the amount of medication to be induced. The medicine will be enclosed in a shell in these nanorobot, which will break down once it enters the body. Following its biocompatible disintegration, the medicine is transported to the target cell without affecting nearby cells. These nanorobots will move by use of a propeller that resembles the flagella of bacteria and can be driven by fluid motion, magnetic or biological reactions, etc. The place where the medicine must be administered will affect the shell composition. The primary source taken into consideration is the use of totipotent stem cells and stem cell technologies. Depending on the region, these nanorobots can enter the body by a number of different routes, such as an implant with low invasiveness, an aerosol, or an oral tablet.

Keywords: Biocompatible, Flagella, Nanorobot, Propeller, Totipotent

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