disclosed herein further comprises a nanoparticle. In some embodiments, the nanoparticle comprises lipids, cyclodextrin, chitosan, carbohydrate polymers, elastin-like polymers (ELP), calcium phosphate polymers, or combinations thereof. In one embodiment, the nanoparticle is PEGylated. In one specific embodiment, the nanoparticle is ELP-L.

[0011] In another embodiment, the composition for targeting and inhibiting tumor cell growth as disclosed herein is encapsulated in a liposome. In one embodiment, the liposome is PEGylated.

[0012] In another aspect, disclosed herein is a pharmaceutical composition comprising the disclosed composition for targeting and inhibiting tumor cell growth. In certain embodiments the pharmaceutical composition comprises the compositions disclosed herein and a pharmaceutically acceptable carrier, excipient or adjuvant. In other embodiments, the pharmaceutical composition comprises the compositions disclosed herein and a chemotherapeutic drug or agent. In yet other embodiments, the pharmaceutical composition comprises the compositions disclosed herein and an immunity checkpoint inhibitor.

[0013] In another aspect, disclosed herein is a method for inhibiting growth of a tumor cell. In certain embodiments, the method comprises providing a composition comprising an oligonucleotide that is capable of activating the innate immune response in the tumor cell, and contacting the tumor cell with the composition in an amount sufficient to inhibit tumor cell growth. In some embodiments, the composition is the composition for targeting and inhibiting tumor cell growth as disclosed herein.

[0014] In another aspect, disclosed herein is a method for activating a subject's innate immune response specifically in the tumor cells of the subject. In some embodiments, the method comprises obtaining an oligonucleotide that is capable of activating the innate immune response in a tumor cell; contacting the oligonucleotide with a tumor cell-targeting moiety to form a composition, such that the composition will specifically deliver the oligonucleotide to tumor cells in the subject; and administering a pharmaceutically effective amount of the composition to the subject.

[0014a] In another aspect, there is provided a composition comprising an oligonucleotide that is capable of activating the innate immune response within a tumor for use in a method for inhibiting growth of the tumor, the method comprising:

providing the composition comprising an oligonucleotide that is capable of activating the innate immune response in the tumor, and

contacting the tumor with the composition in an amount sufficient to inhibit tumor growth.

[0014b] In another aspect, there is provided an oligonucleotide that is capable of activating the innate immune response in a tumor for use in a method for activating a subject's innate immune response specifically in the tumor of the subject, the method comprising:

obtaining the oligonucleotide that is capable of activating the innate immune response in a tumor;

contacting the oligonucleotide with a tumor cell-targeting moiety to form a composition, such that the composition will specifically deliver the oligonucleotide to the tumor in the subject; and

administering a pharmaceutically effective amount of the composition to the subject.

[0015] In certain embodiments, the tumor cell of any of the disclosed methods is a human bladder cell, a human breast cell, a human colon cell, a human liver cell, a human lung cell, a human neuroblastoma cell, a human ovarian cell, a human pancreatic cell, a human prostate cell, or a human skin cell.

comprises a nanoparticle.

16. The composition of claim 15, wherein said nanoparticle comprises lipids, cyclodextrin, chitosan, carbohydrate polymers, elastin-like polymers (ELP), calcium phosphate polymers, or combinations thereof.

17. The composition of claim 15, wherein said nanoparticle is PEGylated.

18. The composition of claim 15, wherein the nanoparticle is ELP-L.

19. The composition of any of the preceding claims, wherein the composition is encapsulated in a liposome.

20. The composition of claim 19, wherein the liposome is PEGylated.

21. A pharmaceutical composition comprising:

the composition of any of the preceding claims; and

a pharmaceutically acceptable carrier, excipient or adjuvant.

22. The pharmaceutical composition of claim 21, further comprising a chemotherapeutic drug or agent.

23. The pharmaceutical composition of claim 21, further comprising an immunity checkpoint inhibitor.

24. A composition comprising an oligonucleotide that is capable of activating the innate immune response within a tumor for use in a method for inhibiting growth of the tumor, the method comprising:

providing the composition comprising an oligonucleotide that is capable of activating the innate immune response in the tumor, and

contacting the tumor with the composition in an amount sufficient to inhibit tumor growth.

25. The composition for use of claim 24, wherein the composition is the composition of any of the preceding claims.

26. An oligonucleotide that is capable of activating the innate immune response in a tumor for use in a method for activating a subject's innate immune response specifically in the tumor of the subject, the method comprising:

obtaining the oligonucleotide that is capable of activating the innate immune response in a tumor;

contacting the oligonucleotide with a tumor cell-targeting moiety to form a composition, such that the composition will specifically deliver the oligonucleotide to the tumor in the subject; and

administering a pharmaceutically effective amount of the composition to the subject.

27. The composition for use of claim 24 or 25 or the oligonucleotide for use of claim 26 wherein the tumor is a human bladder tumor, a human breast tumor, a human colon tumor, a human liver tumor, a human lung tumor, a human neuroblastoma tumor, a human ovarian tumor, a human pancreatic tumor, a human prostate tumor, or a human skin tumor.