CLAIMS

1.) A pharmaceutically acceptable suspension comprising:

a.) pharmaceutical grade water;

b.) at least one processing enhancer; and

c.) gold-platinum bi-metallic alloyed nanocrystals suspended in said water forming a suspension, wherein said gold-platinum bi-metallic nanocrystals:

i.) have surfaces that include at least one characteristic selected from the group of characteristics consisting of: (1) no organic chemical constituents adhered or attached to said surfaces and (2) are substantially clean and do not have chemical constituents adhered or attached to surfaces, other than water, lysis products of water or said processing enhancer, none of which alter the functioning of said nanocrystals;

ii.) have a particle size of less than about 50nm;

iii.) are present in said suspension at a total atomic metal concentration of about 2-1000~~ppm~~ µg/ml.

d.) said suspension having a pH of between about 5 to about 12 and a zeta potential of at least about -30mv.

2.) The composition of claim 1, wherein said processing enhancer comprises sodium bicarbonate.

3.) The composition of claim 1, wherein said suspension has a zeta potential of at least about -40 mV and a pH of between about 8 to about 12.

4.) The composition of claim 1, wherein said suspension has a zeta potential of at least about -50 mV.

5.) The composition of claim 1, wherein said surfaces have no organic chemical constituents adhered or attached to said surfaces.

6.) The composition of claim 1, wherein said surfaces are substantially clean and do not have chemical constituents adhered or attached to surfaces, other than lysis products of said water.

7.) The composition of claim 1, wherein said suspension has a total metal concentration of about 10-500 ~~ppm~~ µg/ml.

8.) The composition of claim 1, wherein said ~~gold-platinum bi-metallic nanocrystals comprise an alloy of gold and platinum~~ processing enhancer comprises sodium bicarbonate and potassium hydroxide.

9.) The composition of claim 8, wherein platinum is a minor constituent in said bi-metallic alloyed nanocrystals and gold is a major constituent in said bi-metallic alloyed nanocrystals.

10.) The composition of claim 1, wherein said suspension is free from chlorides and chlorine-based species.

11.) A pharmaceutical suspension comprising:

a.) pharmaceutical grade water containing at least ~~one~~ two processing enhancers comprising sodium bicarbonate and potassium hydroxide, said water having a pH of between about 5 to about 12 and further comprising at least some platinum ions;

b.) gold-platinum bi-metallic alloyed nanocrystals in said water forming said suspension, said suspension having a zeta potential of at least about -30mV and wherein said gold-platinum bi-metallic alloyed nanocrystals:

i.) have surfaces that include at least one characteristic selected from the group of characteristics consisting of: (1) no organic chemical constituents adhered or attached to said surfaces and (2) are substantially clean and do not have chemical constituents adhered or attached to surfaces thereof;

ii.) have an average particle size of less than about 50nm; and

iii.) are present in said suspension at a concentration of about 2-1000~~ppm~~ µg/ml.

12.) The composition of claim 11, wherein said suspension has a zeta potential of at least about -40 mV and a pH of between about 8 to about 12.

13.) The composition of claim 11, wherein said suspension is free from chlorides and chlorine-based species.

14.) The composition of claim 11, wherein said surfaces are substantially clean and do not have chemical constituents adhered or attached to surfaces, other than water or lysis products of water and said suspension is free from chlorides and chlorine-based species.

15.) The composition of claim 11, wherein ~~at least some platinum ions are present in said water suspension~~ platinum is a minor constituent in said bi-metallic alloyed nanocrystals and gold is a major constituent in said bi-metallic alloyed nanocrystals.

16.) A suspension comprising:

a.) pure water containing at least one processing enhancer, said water having a pH of between about ~~5~~ 8 to about 12;

b.) gold-platinum bi-metallic alloyed nanocrystals in said water forming said suspension, said suspension having a zeta potential of at least about ~~-30mV~~ -40mV and wherein said gold-platinum nanocrystals:

i.) have surfaces that include at least one characteristic selected from the group of characteristics consisting of: (1) no organic chemical constituents adhered or attached to said surfaces and (2) are substantially clean and do not have chemical constituents adhered or attached to surfaces, other than water, lysis products of water or said processing enhancer, none of which alter catalytic functioning of said nanocrystals;

ii.) have a particle size of less than about 50nm; and

iii.) are present in said suspension at a concentration of about 2-1000~~ppm~~ µg/ml.

17.) The composition of claim 16, wherein said suspension ~~has a zeta potential of at least about -40 mV and a pH of between about 8 to about 12~~ further comprises at least some platinum ions.

18.) The composition of claim 17, wherein said surfaces have no organic chemical constituents adhered or attached to said surfaces.

19.) The composition of claim 16, wherein said surfaces are substantially clean and do not have chemical constituents adhered or attached to surfaces, other than water or lysis products of water.

20.) The composition of claim 19, wherein said suspension does not contain any chlorides or chlorine-based materials used to form the gold-platinum bi-metallic nanocrystals.

21.) Use of a composition of claim 1 in the manufacture of a medicament for treating a patient with a cancerous condition.

22.) The use of claim 21, wherein the cancerous condition comprises at least one of bladder, breast, cervix, CNS, colon H&N, lung, ovary, prostate, stomach, thyroid, uterus and vulva cancers.

23.) The use of claim 22, wherein the cancerous condition comprises colon cancer.

~~24.) Use of a composition of claim 1 in the manufacture of a medicament for treating a patient with a condition receptive to platinum therapy~~.

~~25~~24.) The use of claim 21, wherein the composition is administered orally.

~~26~~25.) The use of claim 21, wherein the composition is administered interperitoneally.

~~27~~26.) The use of claim 21, wherein the composition is administered intratumorally.

~~28~~27.) A process for forming gold-platinum bi-metallic nanocrystals suspended in water comprising:

providing at least one processing enhancer in said water;

providing at least one first trough member;

creating a flow direction of said water and processing enhancer through said at least one first trough member;

providing at least one platinum-based plasma forming electrode spaced apart from a surface of said water, thereby forming a space between said at least one platinum-based plasma-forming electrode and said surface of said water;

forming at least one plasma in said space between said at least one platinum-based plasma forming electrode and said surface of said water;

providing at least one set of metallic electrodes contacting said water, a first set of electrodes contacting said water after said water has flowed past said at least one platinum-based plasma forming electrode;

causing said at least one set of metallic electrodes to form at least one platinum species in said water;

providing said at least one platinum species in said water to at least one second trough member;

creating a flow direction of said at least one platinum species in said water through said at least one second trough member;

providing at least one gold-based, plasma-forming electrode spaced apart from a surface of said at least one platinum species in said water, thereby forming a space between said at least one gold-based, plasma-forming electrode and said at least one platinum species in said water;

forming at least one plasma in said space between said at least one gold-based, plasma-forming electrode and said at least one platinum species in said water;

providing at least one set of gold electrodes contacting said water, said gold electrodes contacting said at least one platinum species in said water after said at least one platinum species in said water has flowed past said at least one gold-based, plasma-forming electrode; and

causing said at least one set of gold electrodes to form said gold-platinum bi-metallic nanocrystals.

~~29~~28.) The ~~product manufactured by the method~~ process of claim ~~28~~ 27 wherein said at least one platinum species in water is cooled prior to providing it to said second trough member.

~~30~~29.) A process for forming gold-platinum bi-metallic alloyed nanocrystals suspended in water comprising:

first forming electrochemically at least one platinum species in water and at least one lysis product of water, thereby creating a platinum species and water material; ~~and~~

cooling said at least one platinum species in water; and

using said platinum species and water material in a second electrochemical reaction to form a bi-metallic alloyed gold-platinum nanocrystal suspension.

~~31~~30.) The process of claim ~~30~~29, wherein at least one platinum electrode is used to form said at least one platinum species in water and at least one gold electrode is used to form said gold-platinum alloyed bi-metallic nanocrystals.

~~32~~31.) The process of claim ~~30~~29, wherein no chlorides or chlorine-based materials are required in said process to form said gold-platinum bi-metallic alloyed nanocrystals.

~~33~~32.) The process of claim ~~30~~29, wherein said gold-platinum bi-metallic alloyed nanocrystals comprise ~~an alloy of~~ gold as a major constituent and platinum as a minor constituent.