Clinical toxicities of nanocarrier systems

- Karina R. Vega-Villa[a],
- Jody K. Takemoto[a],
- Jaime A. Yáñez[a],
- Connie M. Remsberg[a, 1],
- M. Laird Forrest[b],
- Neal M. Davies[a, ,]

Show more

https://doi.org/10.1016/j.addr.2007.11.007

Comment [i]: A nanocarrier is nanomaterial being used as a transport module for another substance, such as a drug. Commonly used nanocarriers include micelles, polymers, carbon-based materials, liposomes and other substances.

Comment [i]: Types Nanocarriers discovered thus far include polymer conjugates, polymeric nanoparticles, lipid-based carriers, dendrimers, carbon nanotubes, and gold nanoparticles. Lipid-based carriers include both liposomes and micelles. Examples of gold nanoparticles are gold nanoshells and nanocages.[2] Different types of

Abstract

Toxicity of nanocarrier systems involves physiological, physicochemical, and molecular considerations. Nanoparticle exposures through the skin, the respiratory tract, the gastrointestinal tract and the lymphatics have been described. Nanocarrier systems may induce cytotoxicity and/or genotoxicity, whereas their antigenicity is still not well understood. Nanocarrier may alter the physicochemical properties of xenobiotics resulting in pharmaceutical changes in stability, solubility, and pharmacokinetic disposition. In particular, nanocarriers may reduce toxicity of hydrophobic cancer drugs that are solubilized. Nano regulation is still undergoing major changes to encompass environmental, health, and safety issues. The rapid commercialization of nanotechnology requires thoughtful environmental, health and safety research, meaningful, and an open discussion of broader societal impacts, and urgent toxicological oversight action.

- Nanocarrier;
- Polymeric micelles;
- Dendrimer;
- Nanosphere;

Silica

Stored

grains: beans, barley, grain crops, oats, rice, rye, sorghum, wheat, buckwheat, flax, corn, peas, seeds, soybeans Grain/cereal/flour bins (empty/full), grain/ cereal flour storage areas (empty/full), food/ feed storage areas (empty/full), silo, household/ domestic dwelling indoor food handling areas, commercial transportation facilities, food processing plant premise/equipment, eating establishments food handling areas (food contact), eating establishment food sewing areas (food contact), and food/grocery marketing/storage/

distribution facility premise

Indoor Non-Food
(including Commercial/Residential
Sites) :Kennels, pet sleeping quarters/veterinary,
cats (adult/kitten)*, dogs/canine (adult/puppies),
pet living/sleeping quarters, pet bedding, domestic
dwelling, household/domestic dwelling indoor premise,
household/domestic dwelling content, human bedding/mattresses,
refuse/solid waste containers (garbage cans)

SILICA GEL
Aquatic on-Food Site (Commercial)Sewage Systems Outdoor Sites
(including Commercial/Residential): Kennels/pet sleeping
quarters/veterinary, household/domestic dwelling (outdoor),
wood protection treatment to building/products (outdoor),
commercial/institutional/industrial areas (outdoor)
Indoor Food (including Cornmercial/Agricultural/ Residential) Grain crops,
grain/cereal/flour bins (empty/ full), grain/cereal/flour elevators
(empty/full), food/feed storage areas (empty/full), grain/ cereal/flour
storage areas, dairy cattle, poultry, beef/range/feeder (cattle),
hog/pig/swine, house- hold/domestic dwelling food indoor establishment,
food processing plants premise/equipment, feed mills/feed processing
plants, flour mills, cereal plants, eating establishments food handling
areas (contact), eating establishments food serving areas
(contact), food/grocery marketing/storage distribution
facility premise 000565 Indoor Non-Food (including
Commercial/Agricultural/ Residential) Kennels/pet sleeping
quarters/veterinary, horses, animals (lab/research) ,
commercial transportation facility, eating establishments
non-food areas, commercial/institutional/industrial
premise/equipment (indoor), cats (adults/kittens), dogs/canines
(adult/puppies), monkeys, ferrets, birds, pet living/ sleeping quarters,

pet bedding, domestic dwellings, household/domestic dwellings (indoor),
household/ domestic dwelling content, wood protection treatment
to building (indoor), human bedding/mattresses Indoor Medical:
Hospitals/medical institutions (human/veterinary

Exemption of Tolerances
silicon dioxide and silica gel (hydrated silica) have received
exemptions from tolerances and clearances for certain use patterns
associated with food commodities. These exemptions and clearances
are: -when applied as an inert ingredient, or occasionally as an active,

to growing crops and raw agricultural commodities (40 CFR 180.1001(c)
and (a)); -when applied as an inert, or occasionally as an active
to livestock (40 CFR 180.1001(e)); **-when applied as an active ingredient
to growing crops, raw agricultural commodities after harvest and to
livestock** (40 CFR 180.1017). Current exemptions from tolerances in 40
CFR 180.1017, 185.1700 and 186.1700 are limited to the naturally
mined silicon dioxide-containing product diatomaceous earth.

Anhydrous silicon dioxide has a molecular weight of
60.09. Silica gel and other amorphous forms of silicon dioxide will have

a varying molecular weight, depending upon the extent of hydration. **Diatomaceous earth consists of siliceous frustules and fragments of various species of diatoms mined from the beds of former inland lakes**. It is composed of approximately 85% silica, other oxides and organic materials. The natural grades are mined and then dried, ground, sifted and bagged. **Both forms used as pesticidal active ingredients are generally white powders at room temperature** which melt to a glassy consistency at high temperatures. **Silicon dioxide is practically insoluble in water**, **but is soluble in hydrofluoric acid**. **Heating with concentrated phosphoric acid may slowly dissolve as well**. Amorphous forms of silica may be dissolved by hot concentrated alkaline solutions, but crystalline forms generally are not soluble. Silica is not soluble in any organic solvent. The bulk density is in the range of 10-20 lb/ft 3 and the true density is approximately 2.2 g/cm 3. The pH of an aqueous suspension of silica gel can range from 2.3-7. All product chemistry requirements have been satisfied

Oral Administration

Rat: A group of 30 weanling Sprague-Dawley rats was administered 20 mg/day of **diatomaceous earth** in cottage cheese at a concentration of 5 mg/g cheese, in addition to a basal diet & libit were observed for their life span (mean survival 840 days**). Five malignant tumors** (1 **salivary gland carcinoma**, 1 **skin carcinoma**, 2 **sarcomas of the uterus**, 1 **peritoneal mesothelioma**) and 13 **benign tumors** (9 **mammary fibro adenomas, 1 adrenal pheochromocytoma, 3 pancreatic adenomas**) were observed in treated animals. A control group of 27 rats with mean survival of 690 days **had 3 carcinomas (1 each in lung, ovary and fore stomach) and 5 mammary fibro adenomas**. k/

Mouse: Groups of 75 mice were exposed to various particulates including 0.5 g/day precipitated silica (particle size was reported to about 5 um or less in diameter) once an hour for 6 hours on 5 days/week for 1 year and observed for their lifespan. Survival at 600 days was 12/74 in the silica treated group and 17/75 in one control group and 13/73 in the second control group. The incidence of pulmonary adenomas and adenocarcinomas in mice surviving 200 days or more was 5/63 and 5/52 in the control groups at 13/61 in the silica treated group. I/ Rabbit: Inhalation of 40 mg/ml amorphous silica for up to to 1100 days was reported to produce Ildiffuse tissue reactions. a/

Dietary exposure

Dietary exposure to silicon dioxide and silica gel The may occur from their application to certain crops and in and around food handling and preparation areas. **amount of ingestion has not been quantified for this assessment because they are exempt from tolerance requirements at all levels in food**. to be inconsequential because of the ubiquity of forms of silicon dioxide in the environment

****

Nano-silicon dioxide toxicological characterization on two human kidney cell lines

V Paget, J A Sergent and S Chevillard[1]

Published under licence by IOP Publishing Ltd
Journal of Physics: Conference Series, Volume 304, Number 1

Abstract

Silicon dioxide nanoparticles (n-SiO_2) have recently encountered a wide variety of applications in medicine or engineering but their toxicological effects are poorly understood. In this study, **we have used SiO_2-25 nm and SiO_2-100 nm mono-dispersed nanoparticles labeled with Rhodamine B and TMPyP respectively. These two fluorophores were incorporated during synthesis in order to track nanoparticles cell incorporation**. Up-to-date, no evaluation of the toxicological effects of these nanoparticles upon human kidney has been published. As kidney is one of the major traditional retention organs, the aim of our study is to evaluate the potential toxicity of these nanoparticles on two human cell lines from proximal tubule (Caki-1 and Hek293). Our results report that the two cell lines do not show similar responses after 24 hours of exposure to SiO_2-nanoparticles disregarding a similar origin in the kidney. **Interestingly, our results indicate that for both tested SiO_2-nanoparticles, Caki-1 cells present a higher sensitivity in terms of cytotoxicity and genotoxicity than Hek293 cells**. Furthermore, our results show that for **similar concentration of exposure, SiO_2-25 nm seems to be more cytotoxic and genotoxic than SiO_2-100nm for both tested cell lines**.

****

Dangers of SiO2 nanoparticles

the dangers of SiO2 nanoparticles has been studied pretty well. I didn't realize **how dangerous this compound is, and that the FDA allows it sprayed on unfinished food and not labeled.** In most people, it doesn't cause "acute" reactions, but it causes a. After the obdy gets rid of the SiO2, and it's introduced into the **continuous crystallization inside the body liquid crystalline matrix inside the body, it starts crystallizing to itself, forming larger crystals**. If you don't believe me, go take a vitamin pill containing amorphous SiO2, wait about 2 hours, then look at your blood under a darkfield microscope. **You'll see the crystals forming**. **Some are as small as a little dot that will reflect the light), but others are as big as a red blood cell, and are obvious crystals**. When I did some darkfield work, I saw the crystals as well. I asked what they were (not realizing anything in this email, below), and the guys said "artifacts." **He also noted that he has been seeing**

Comment [i]: **continuous cystalllization**

a LOT more artifacts in people's blood, and don't really know what they were, or where they are coming from. Here's one extract from a book:

When it's sprayed on food, it acts as a drug delivery system, just like it says above. It's properties allow it to coat proteins, gluten, amino acids, etc... to artificially transport them into the body. Essentially it acts to force injections into us. So when you said awhile ago that you speculated there might be **forced vaccinations**....it already is happening...**through the food**. There's already evidence that TiO2 nano-particles cause iron uptake dysregulation in chicken intestinal cells, **and amorphous SiO2 acts the same way. SiO2 forces a breakdown in the gut regulation cells, and it does it through 'disconnecting' the cells from host**. : **SiO2 and TiO2 nanoparticles have what is known as 'light scattering' properties and electrical insulating properties**. When the **SiO2 is ingested, it coats the outsides of the cell walls [the phosphatidylcholine, carbohydrate chains, and proteins (etc)]. When the insulating effect is began, the cell loses connection to what it's supposed to be doing. This energy originates in the heart, and with every beat we have the heart putting out light energy and epigenetically changing DNA expression (almost instantaneously)**. So you can see what happens when you insulate a certain set of cells from receiving that energy with TiO2 or SiO2 nanoparticles; **they malfunction**. Also, SiO2 and TiO2, as I alread said, have 'light scattering' properties. This is just another term for a re-direction or, **changing the amplitude and wavelength of the energy being passed through it.** It does it very well. So when our heart and nervous system emit informational instructions, **these instructions are either not fully received (as I said before), or they are changed, so the cell gets bad information, and malfunctions.**--I learned all this by studying the work and research of Dr. David Jeringan, Dr. Jerry Tennant, Dr. Hal Huggins, (and from the researchers that they got their info from), and by reading about how you can extract the DNA of living cells, in tissue, and they do not malfunction (but obviously cannot reproduce). **They continue to operate normally until they are removed from their host, which says....the host is controlling the DNA expressions and forcing the cells to function correctly, so something else other than DNA is doing it**. Dr. Jernigan talks about how the **light of the body controls DNA expression**...so there it was, staring me in the face**: Disrupting energy flow by adding "inert" SiO2 and TiO2 nanoparticles to essentially all the food are the root issues with out food. Not only that, nano-silicates have a immune-stimulating response when introduced to the immune system (just like the pico-sized aluminum particles in the vaccines), for the reasons I said above (the immune system recognizes a malfunctioning cell, figures out the cell wall is resonating "silicon signatures," and destroys it. This is called cell mediated immunity to haptens (nanoparticles are the hapten" which induces autoimmunity, TNF-alpha, and interleukin, and cytokine increases**).

Comment [i]: **this is why taking all that D is not good without the right freq of the sun to regulate the D since it is a hormone and this is also part of dna communications**

From the University of Colorado Dept. of Microbiology, Immunology, and Pathology: ***"anything implanted in bone will create an autoimmune response. The only difference is the time it takes."*** ----guess what happened to this professor after he proved and released this information? From the inside info I got, this news release (not the actual link) was unauthorized, and the Professor was "let go." He went to Pepperdine after this, and continued research in this category. I believe he started a business, or joined a business that is researching how to implant the patients own DNA into ceramic and composite compounds for future use inside the body. Why?? LOL...we already "know" **the body is going to form an autoimmunity to metallic implants into any bone structure! It's just a matter of time until we find out our nano-silicon implants are really causing some issues**. If the body is "taught" that silica is an antigen, it will get rid of anything that is silicon-based or reject anything that is silicon-coated. **Hence, we get allergic to anything sprayed with nano-silica, or "learn" to get immune response to vitamins when mixed or coated with nano-silica (>90% of supplements).** --Now you see why Codex required capsule fill requirements, and silica was one of the approved fillers. **Also, essentially all the pharmaceutical companies are using one of three immune system modifiers: nano- silicon, alumina, or titanium. MCC and polymers are carcinogenic**, just as you said previously. I looked up the GRAS report on those, and actually read it. **It seems the studies were "stopped" when an increase of organ weights were noticed, and then deemed "GRAS." What a crock of dog shit!**

Results from realizing this: I got off everything containing this junk, and perfect health returned. Feel free to reiterate any of this to anyone you feel it's important to, or to post wherever you want. I don't want any credit, just that these jokers get exposed for inducing rampant [and random] diseases in the population, and convincing **younger people that their "genetics are broken**," and "you need to take one of those genetic tests" and take supplements (containing junk that will break your genetics more) **to target the"genetic mutations" they have**. Or for the older populations, that "they need to take [_____] drug, because they have [_____] disease." **The truth is, the body can NEVER fix the mutatuions with nanoparticles inside of it, blocking the cells from sensing what they need to do.** Well, I guess it's pretty ingenious plan if I wanted to steal the wealth from the babyboomers, and steal the future health of the younger generation away from them, get everyone on supplements of some sort (inducing money into the system), bring the entire population to their knees, turning them upside down and circle-jerking the money out of their pockets.

Comment [i]: All cause severe brain damage and high level of oxidation and eventual bone collapse and autoimmune