(1/13) Worrying analysis results from Prof. Dr. Pablo Campra Madrid (Universidad de Almería, @ualmeria): Detection of graphene oxide in the Pfizer–BioNTech COVID-19 vaccine (Comirnaty)

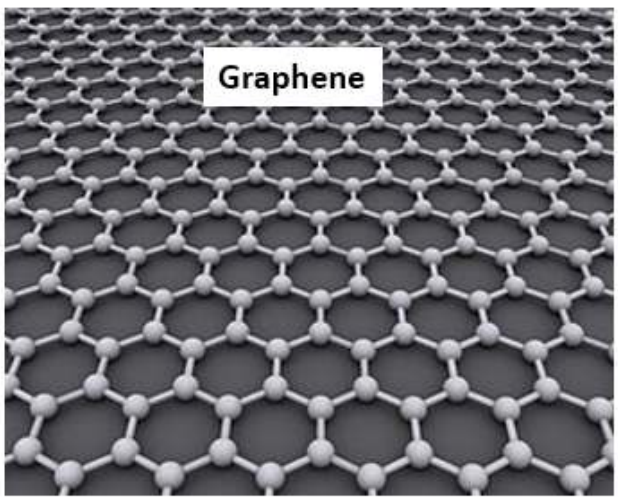
PDF: docdroid.net

I took a closer look

+

(2/13) Prof. Dr. Pablo Campra Madrid (researchgate.net) was commissioned by Dr. Ricardo Delgado Martín to investigate a sample of the Pfizer–BioNTech COVID-19 vaccine if it contains graphene.

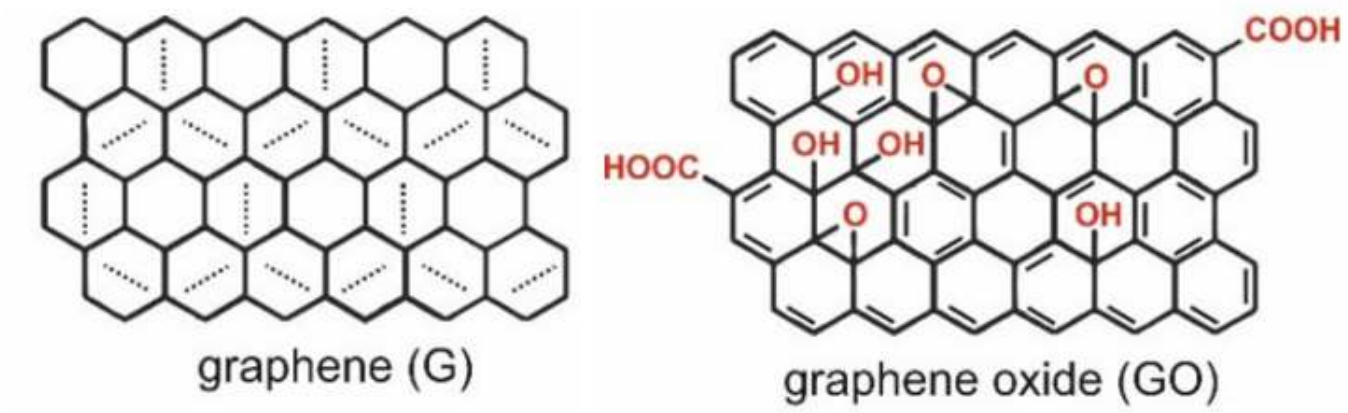
Prof. Dr. Pablo Campra Madrid

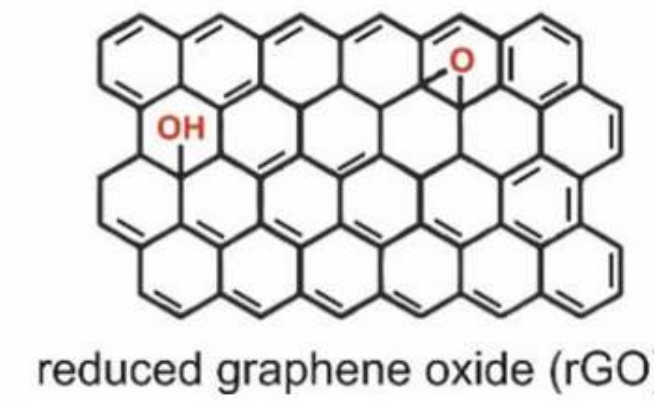


Pablo Campra
https://www.researchgate.net

(3/13)

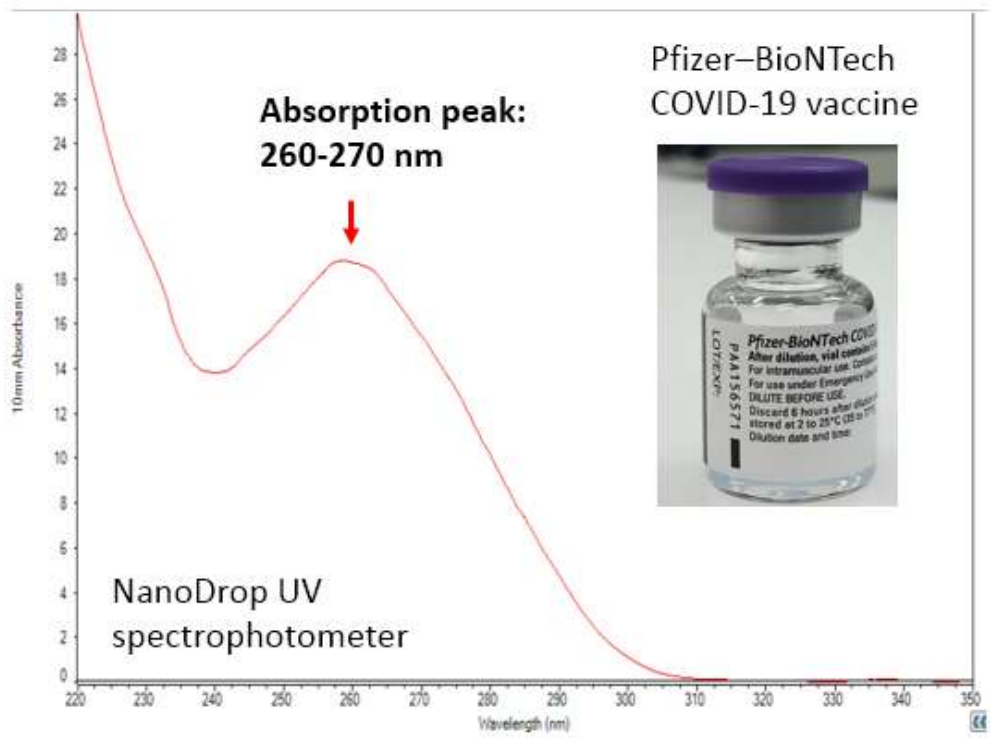
- Graphene (G) consists of a single layer of atoms arranged in a 2D honeycomb lattice
- Graphene oxide (GO) is a form of graphene that includes oxygen functional groups
- Reduced graphene oxide (RGO) contains residual oxygen, other heteroatoms & structural defects



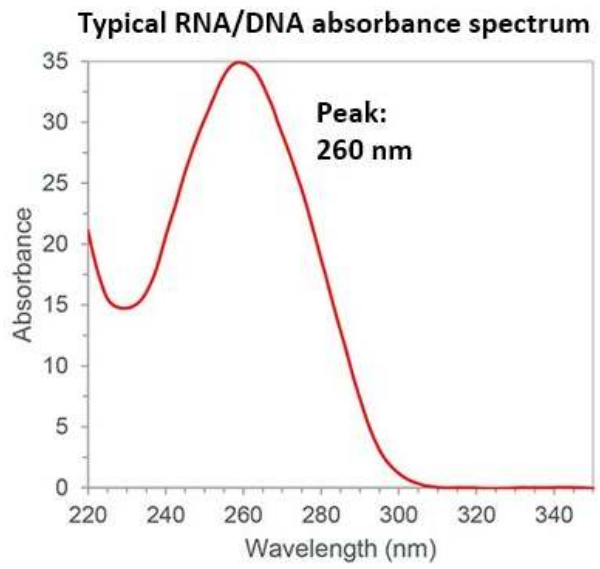


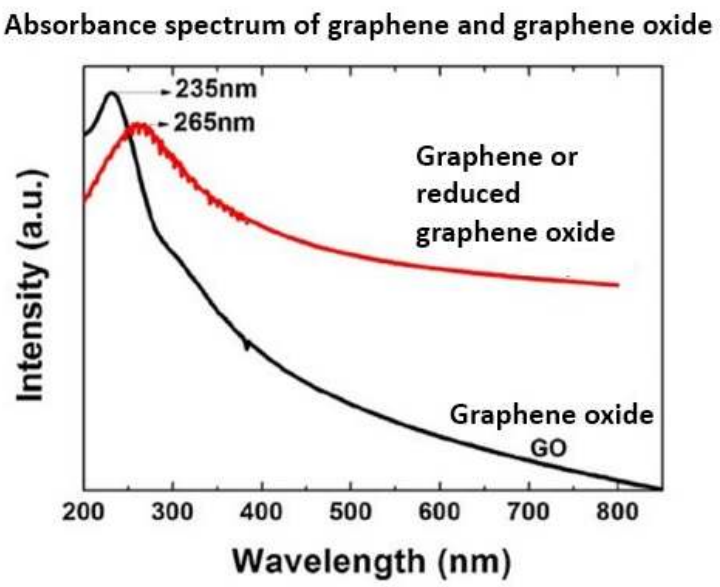
Tadyszak et al. (2018). Nanomaterial, 8 (8), 944

(4/13) The ultraviolet (UV) absorption from the vaccine sample showed a peak at 260-270 nm:



(5/13) The spectrum is similar to the absorbance spectra of RNA/DNA (left) ... but also of graphene & reduced graphene oxide (right):





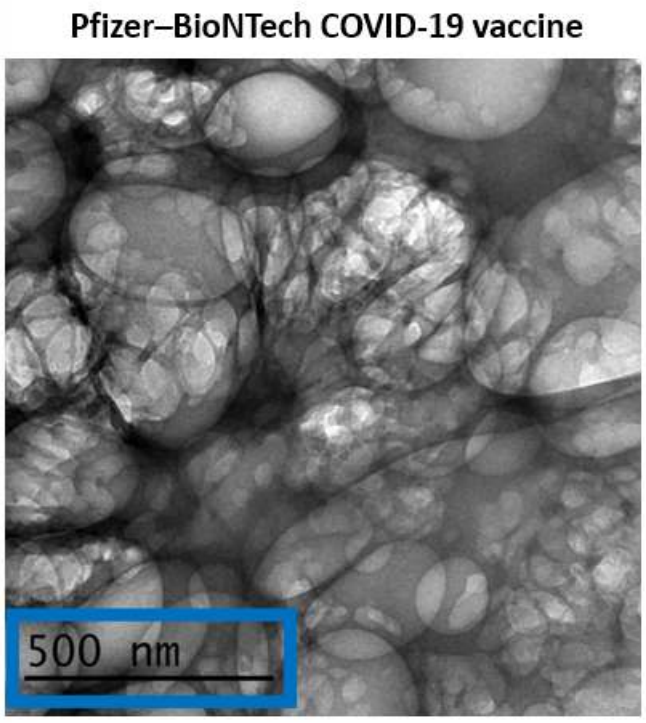
thermofisher.com

Johra et al. (2014). Journal of Industrial and Engineering Chemistry, 20 (5), 2883-2887

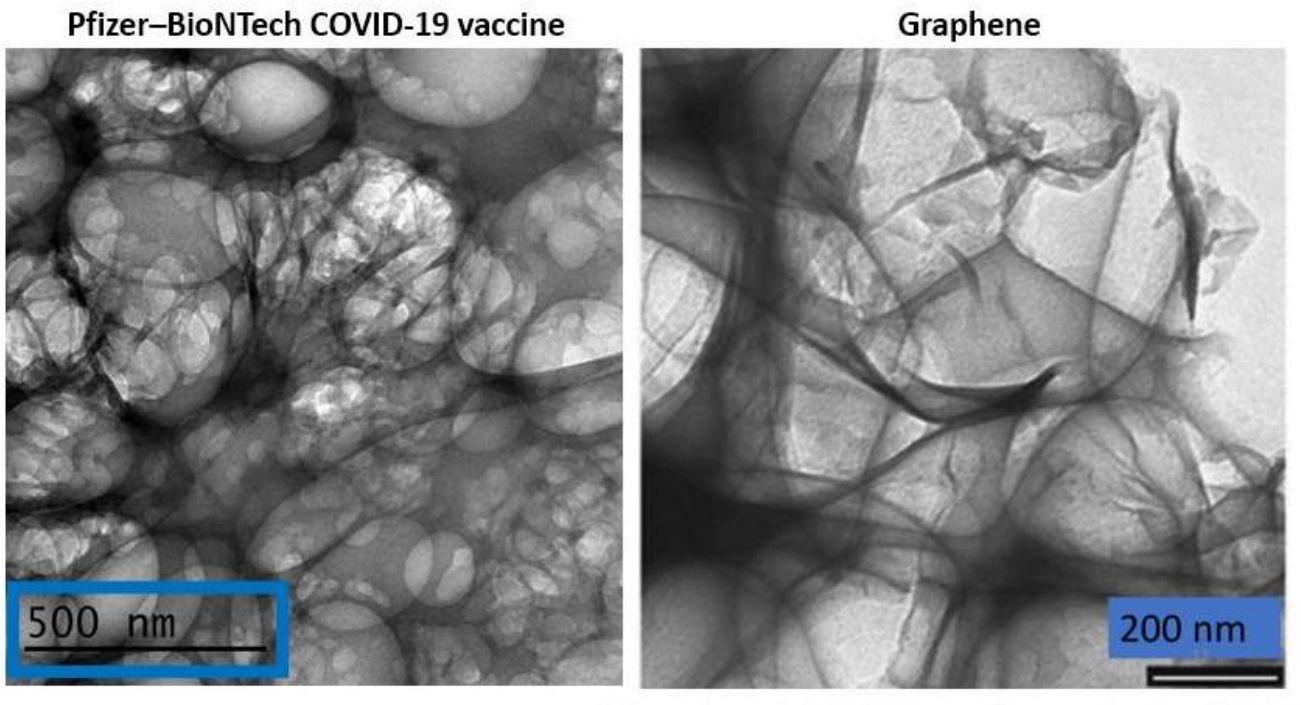
(6/13) According to the ThermoFischer Qubit 2.0 Fluorometer the Pfizer–BioNTech COVID-19 vaccine contains:

- 6 ng/µl RNA
- 747 ng/µl (!) of a substance different from RNA but with a similar absorption peak – possibly reduced graphene oxide

(7/13) Transmission electron microscopy (TEM; JEM-2100Plus, 200 kV, 0.14 nm resolution) of a drop of the Pfizer–BioNTech COVID-19 vaccine revealed:



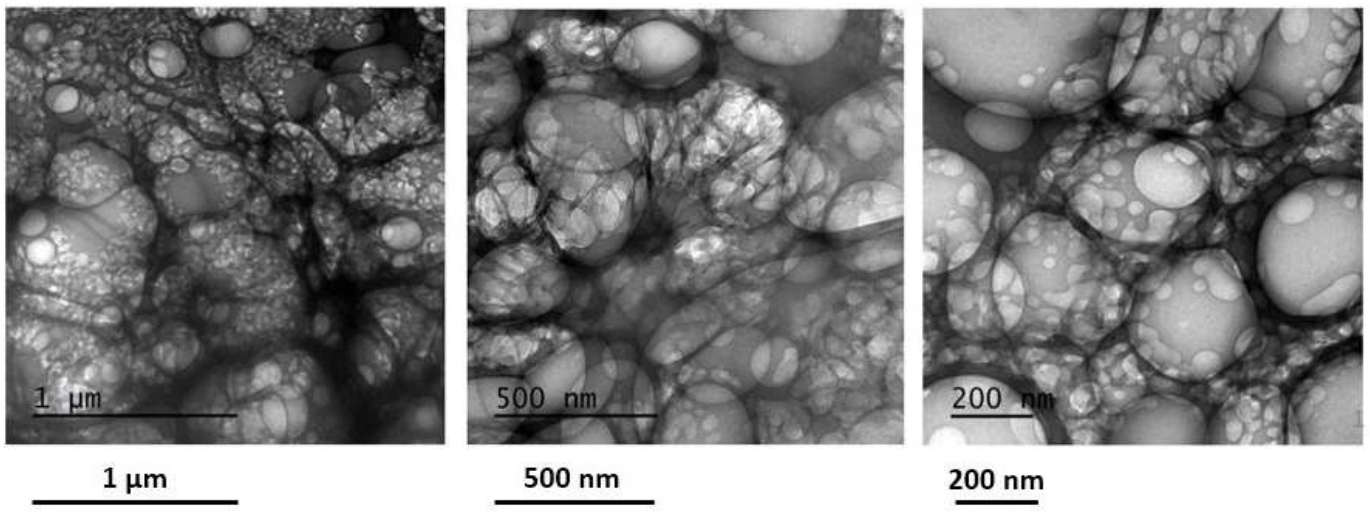
(8/13) The TEM image of the vaccine is very similar to a TEM image of graphene or reducted graphene oxide:



Choucair et al. (2008). Nature Nanotechnology, 4, 30-33

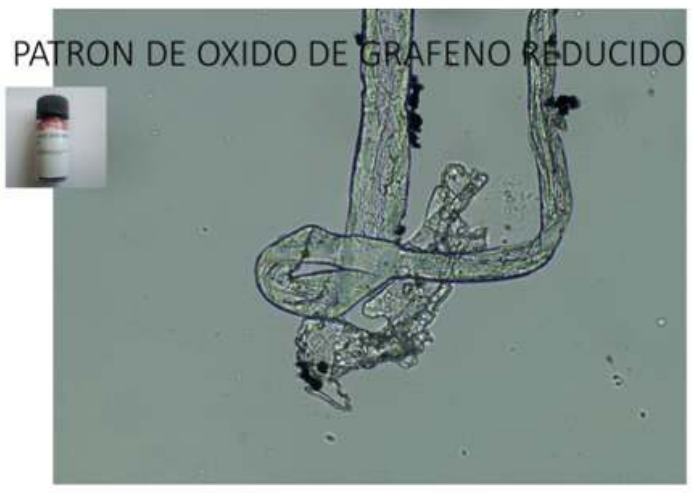
(9/13) Three more TEM images of the vaccine sample:

TEM images of the Pfizer–BioNTech COVID-19 vaccine

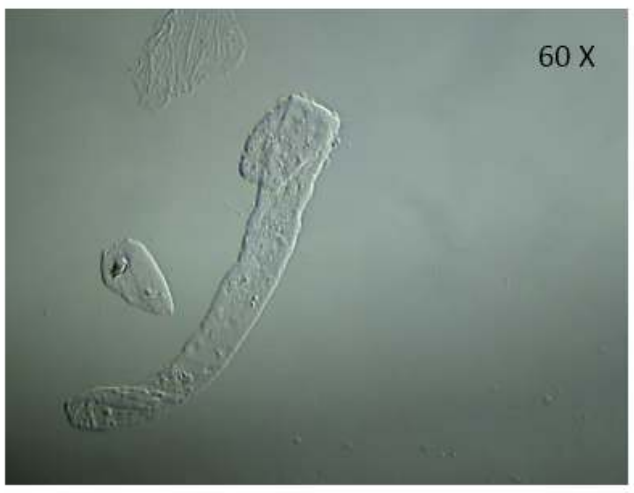


(10/13) Results of optical microscopy (Olympus CX43):

Reduced graphene oxide

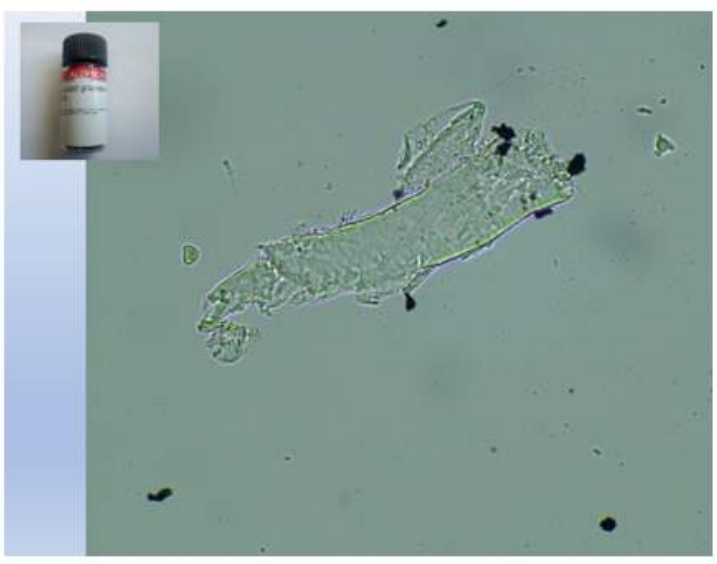


Pfizer–BioNTech COVID-19 vaccine

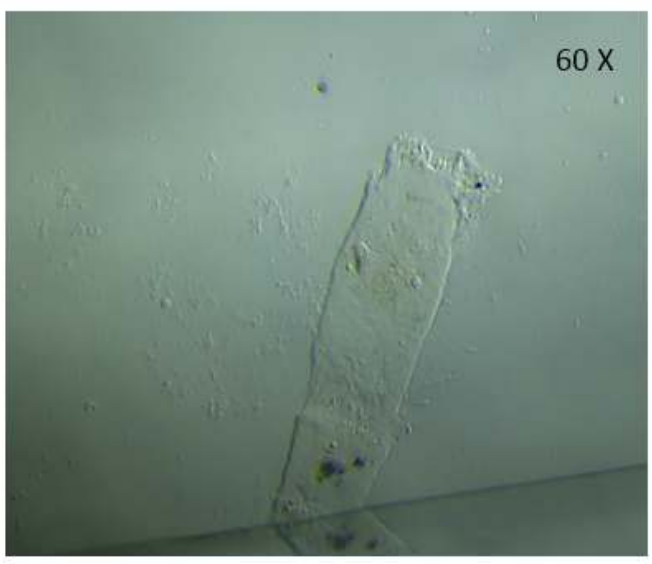


(11/13) Results of optical microscopy (Olympus CX43):

Reduced graphene oxide



Pfizer–BioNTech COVID-19 vaccine



(12/13) Conclusion:

- The report provides indications about the presence of graphene in the Pfizer–BioNTech COVID-19 vaccine sample
- Further analysis (with more samples & other techniques, e.g. XPS, EDS, NMR, FTIR or Raman spectroscopy) is urgently required

CONCLUSIONES Y RECOMENDACIONES

1. El estudio microscópico de la muestra aporta **sólidas evidencias de presencia probable de derivados de grafeno, si bien la microscopía no proporciona una prueba concluyente**. La identificación definitiva de grafeno, grafeno oxidado (GO) o grafeno oxidado reducido (rGO)en la muestra RD1 precisa de la **CARACTERIZACIÓN ESTRUCTURAL** mediante el análisis de patrones espectrales específicos comparables a los publicados en literatura y a los obtenidos a partir de muestra patrón, obtenidos con técnicas espectroscópicas como XPS, EDS, RMN, FTIR o Raman, entre otras.

2. Los análisis de este informe corresponden a **UNA SOLA MUESTRA, limitada en volumen total disponible para procesar.** Es por tanto necesario realizar un muestreo significativo de viales similares para extraer conclusiones generalizables a muestras comparables, registrando origen, trazabilidad y control de calidad durante la conservación y transporte previas a los análisis.

(13/13) There is an urgent need to replicate this analysis! Graphene-family nanomaterials (GFNs), including graphene oxide and reduced graphene oxide, are toxic: particleandfibretoxicology.biomedcentral.com It would be shocking if GFNs are really present in the Covid vaccines.

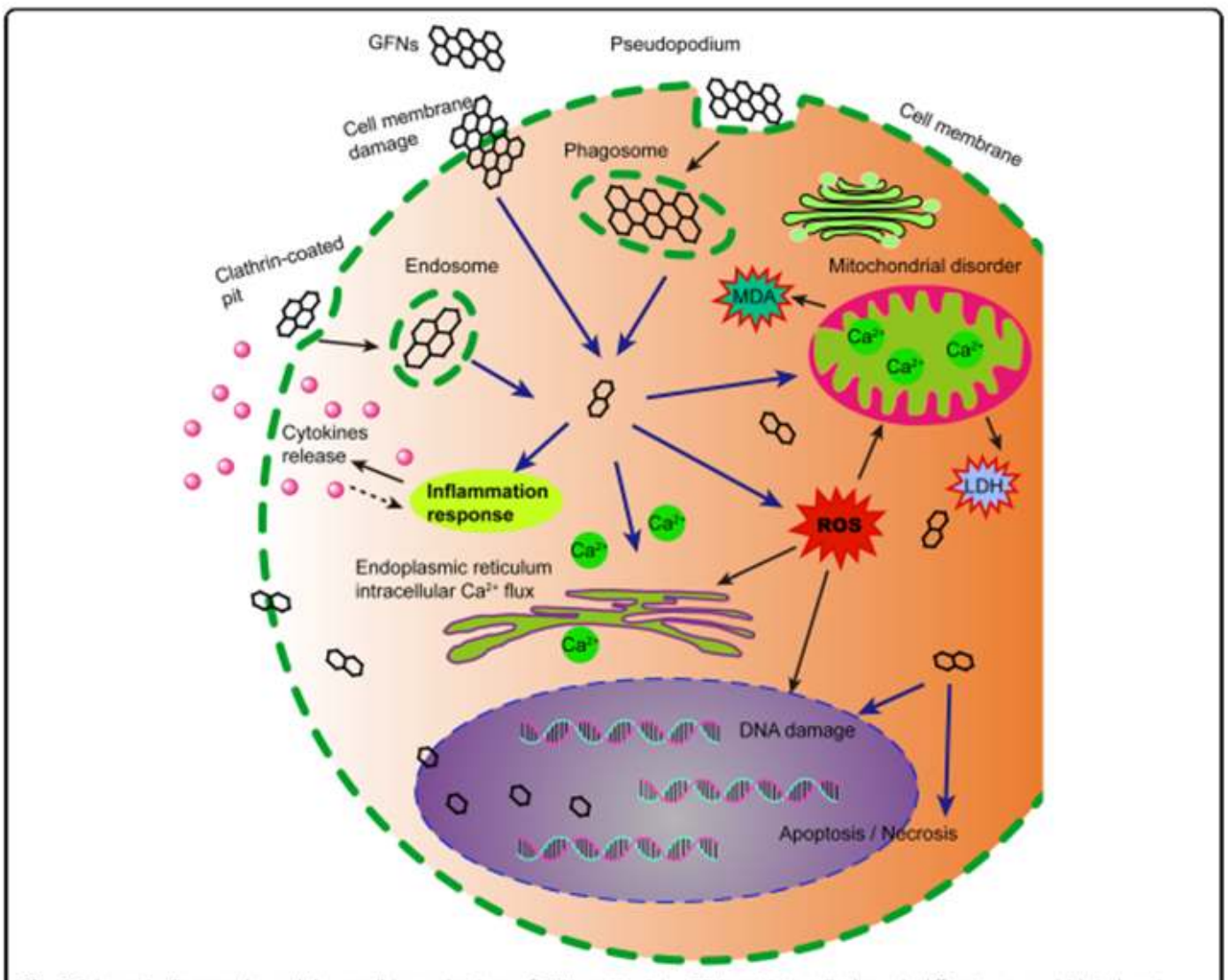


Fig. 3 Schematic diagram showed the possible mechanisms of GFNs cytotoxicity. GFNs get into cells through different ways, which induce in ROS generation, LDH and MDA increase, and Ca^{2+} release. Subsequently, GFNs cause kinds of cell injury, for instance, cell membrane damage, inflammation, DNA damage, mitochondrial disorders, apoptosis or necrosis

PS(1): Graphene oxide (GO) can be used for Cas9/sgRNA delivery for efficient genome editing: tinyurl.com
E.g. as a GO-polyethylene glycol (PEG)-polyethylenimine (PEI) nanocarrier for the delivery of high-molecular-weight Cas9/single-guide RNA (sgRNA) complexes

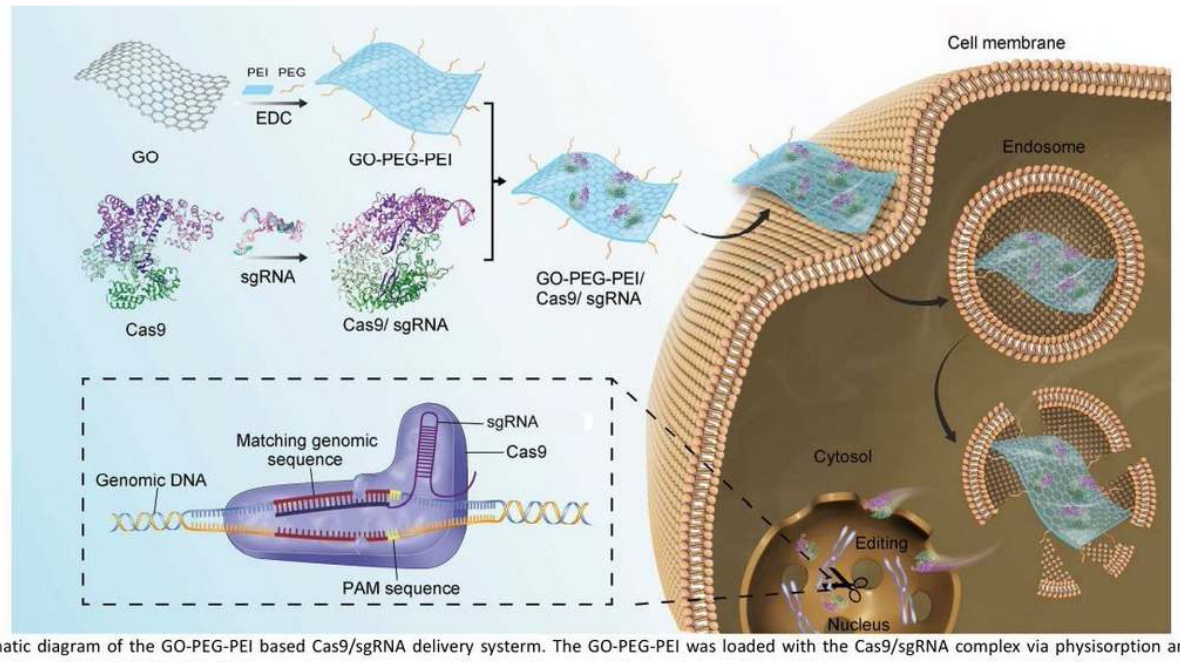


Fig. 1 Schematic diagram of the GO-PEG-PEI based Cas9/sgRNA delivery systerm. The GO-PEG-PEI was loaded with the Cas9/sgRNA complex via physisorption and π-stacking interaction to form GO-PEG-PEI/Cas9/sgRNA complex. Subsequently, the complex were delivered into cells, and the processes are as follows: binding to the cell membrane; endocytosis; endosome escape; transport into the nucleus; search for the target DNA locus in the chromosome and introduction of double-strand breaks for gene editing.