



## Effect of gold nanoparticle on viral load of hepatitis C virus

Sora Yasri<sup>1\*</sup>, Viroj Wiwanitkit<sup>2,3</sup>

<sup>1</sup>Primary Care Unit, KMT Center, Bangkok, Thailand

<sup>2</sup>Hainan Medical University, Haikou, China

<sup>3</sup>Faculty of Medicine, University of Niš, Niš, Serbia

To the editor,

The use of gold nanoparticle as an anti-infective agent has been proposed for years<sup>[1]</sup>. However, many reports mention for its ability counteracting bacteria. Its property against virus has never been systematically evaluated. Here, the authors performed a preliminary *in vitro* study to assess the effect of gold nanoparticle on viral load of hepatitis C virus (HCV). The standard gold nanoparticle is prepared according to the described method in our previous reports<sup>[2,3]</sup>. Thirty known blood samples with HCV and known for HCV viral load were used. Each sample was divided into two parts for further experimental treatment. The first part was naively managed without adding anything. The second part was added by gold nanoparticle solution (mixture as 1:1 according to protocol described in the previous report<sup>[2,3]</sup>). The HCV viral load of each part was determined. The difference between pre- and post-experimental treatment HCV viral load for each separated part in each sample was calculated. The difference between average difference of pre- and post-HCV viral load for the first (naïve) and second (gold nanoparticle treated) groups of overall 30 studied samples was statistically

analyzed by Students *t*-test ( $P < 0.05$  is considered as statistical significant level). According to the present study, no significant difference between naïve and gold nanoparticle treated groups can be seen. This can be the clue that gold nanoparticle has null effect on HCV virus and should not be used as an anti-infective agent for HCV.

### Conflict of interest statement

We declare that we have no conflict of interest.

### References

- [1] Zhao Y, Jiang X. Multiple strategies to activate gold nanoparticles as antibiotics. *Nanoscale* 2013; **5**(18): 8340–8350.
- [2] Wiwanitkit V, Seereemasapun A, Rojanathanes R. Increasing the agglutination reaction in slide test for weak B blood group by gold nanoparticle solution: the first world report. *J Immunol Methods* 2007; **328**(1–2): 201–203.
- [3] Wiwanitkit V, Seereemasapun A, Rojanathanes R. Effect of gold nanoparticles on spermatozoa: the first world report. *Fertil Steril* 2009; **91**(1): e7–e8.

\*Corresponding author: Sora Yasri, Primary Care Unit, KMT Center, Bangkok, Thailand.

Tel: 66878923467

E-mail: sorayasri@outlook.co.th

Article history:

Received 6 Apr 2014

Received in revised form 18 Apr, 2nd revised form 26 Apr, 3rd revised form 9 May 2014

Accepted 2 Jun 2014

Available online 12 Jun 2014