

Delivery of nutraceuticals using nanotechnology

Sir,

The editorial on delivery of nutraceuticals using nanotechnology is very interesting.^[1] As noted, successful formulation of new nanosubstance is the hope. However, the effectiveness and safety is still the consideration.^[1,2] The concern is further testing of the new nano-product. A good testing system is needed. Generally *in vitro* experiment might be convenient but it cannot answer the question. There are many concerns of the nano-products. The *in vivo* stability of the new product must be studied. Indeed, the nanosubstance is usually highly sensitive and aggregation can easily occur. As a result, changes in the physical and biochemical properties can be expected. On the other hand,

when a biochemical substance is changed to nano-level, there must be changes in its physical and biochemical properties. These considerations are recommended for nano-nutraceutical products: a) confirmation of their nutraceutical properties at nano-level, b) confirmation of good production process, c) confirmation of the quality and stability of the product, d) good product test to confirm efficacy and safety, and e) long-term follow-up to study the unwanted adverse effect of the product.

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Access this article online	
Quick Response Code: 	Website: www.jpionline.org
	DOI: 10.4103/2230-973X.107008

REFERENCES

1. Sahni JK. Exploring delivery of nutraceuticals using nanotechnology. *Int J Pharm Invest* 2012;2:53.
2. Wiwanitkit V. New anti-neoplastic drug test using *in vitro* model: What to be concern?. *Daru J Pharm Sci* 2012;20:65.

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