



Letter to the Editor

Red ginseng and H5N1 influenza infection



The recent report on “Red Ginseng and H5N1 influenza infection” in this journal is very interesting [1]. Park et al [1] noted that “the diet with the immune-enhancing Red Ginseng could help humans to overcome the infections by HP H5N1 influenza virus.” In fact, the effect of ginseng on immunomodulation has previously been confirmed and it has been proposed that ginseng can be useful in improving immunity to fight infection [2]. Lee et al [2] noted that ginseng can help to stimulate antiviral cytokine IFN- γ production after influenza A virus infection and inhibit the infiltration of inflammatory cells into the bronchial lumen. Yoo et al [3] have reported that “red ginseng extract showed significantly enhanced protection, lower levels of lung viral titers and interleukin-6.” In-depth biochemical analysis has shown that the polysaccharide in the extract is the main part that contributes to the counteracting function towards the influenza virus [4]. In addition, it has also been reported that Red Ginseng extract could enhance the protection derived from influenza vaccination [5]. Hence, there is no doubt that ginseng as a food supplement can be useful against influenza. In human studies, some workers have reported that Red Ginseng can be useful in improving acute respiratory illness [6] as well as influenza-like illnesses [7]. In a study in humans, the protective effect of ginseng on human endothelial cells against avian influenza virus has been reported *in vitro* [8]. However, there has not yet been a reliable clinical trial on influenza in humans. There are still topics for further study, including: verification of the usefulness of ginseng extract in humans; standardization of the commercially available ginseng extracts; and the development of a health body which can give information to users about the effectiveness and safety of ginseng supplementation. As noted by Kaneko and Nakanishi [9], the effect of ginseng is mysterious and most data are from subjective clinical observations; further research on this topic is required. Finally, the safety of using ginseng in humans should also be mentioned. Although ginseng is considered safe, some rare adverse effects, such as anaphylaxis, have been reported [10]. In a human study evaluating the role of ginseng extract in potentiating the influenza vaccine, many adverse effects were recorded, especially insomnia [11].

References

- [1] Park EH, Yum J, Ku KB, Kim HM, Kang YM, Kim JC, Kim JA, Kang YK, Seo SH. Red Ginseng-containing diet helps to protect mice and ferrets from the lethal infection by highly pathogenic H5N1 influenza virus. *J Ginseng Res* 2014;38:40–6.
- [2] Lee JS, Hwang HS, Ko EJ, Lee YN, Kwon YM, Kim MC, Kang SM. Immunomodulatory activity of Red Ginseng against influenza A virus infection. *Nutrients* 2014;6:517–29.
- [3] Yoo DG, Kim MC, Park MK, Song JM, Quan FS, Park KM, Cho YK, Kang SM. Protective effect of Korean red ginseng extract on the infections by H1N1 and H3N2 influenza viruses in mice. *J Med Food* 2012;15:855–62.
- [4] Yin SY, Kim HJ, Kim HJ. A comparative study of the effects of whole red ginseng extract and polysaccharide and saponin fractions on influenza A (H1N1) virus infection. *Biol Pharm Bull* 2013;36:1002–7.
- [5] Xu ML, Kim HJ, Choi YR, Kim HJ. Intake of Korean red ginseng extract and saponin enhances the protection conferred by vaccination with inactivated influenza A virus. *J Ginseng Res* 2012;36:396–402.
- [6] Lee CS, Lee JH, Oh M, Choi KM, Jeong MR, Park JD, Kwon DY, Ha KC, Park EO, Lee N, et al. Preventive effect of Korean red ginseng for acute respiratory illness: a randomized and double-blind clinical trial. *J Korean Med Sci* 2012;27:1472–8.
- [7] Ha KC, Kim MG, Oh MR, Choi EK, Back HI, Kim SY, Park EO, Kwon DY, Yang HJ, Kim MJ, et al. A placebo-controlled trial of Korean red ginseng extract for preventing influenza-like illness in healthy adults. *BMC Complement Altern Med* 2012;12:10–6.
- [8] Chan LY, Kwok HH, Chan RW, Peiris MJ, Mak NK, Wong RN, Chan MC, Yue PY. Dual functions of ginsenosides in protecting human endothelial cells against influenza H9N2-induced inflammation and apoptosis. *J Ethnopharmacol* 2011;137:1542–6.
- [9] Kaneko H, Nakanishi K. Proof of the mysterious efficacy of ginseng: basic and clinical trials: clinical effects of medical ginseng, Korean red ginseng: specifically, its anti-stress action for prevention of disease. *J Pharmacol Sci* 2004;95:158–62.
- [10] Wiwanitkit V, Taungjaruwina W. A case report of suspect ginseng allergy. *Med Gen Med* 2004;6:9.
- [11] Scaglione F, Cattaneo G, Alessandria M, Cogo R. Efficacy and safety of the standardised Ginseng extract G115 for potentiating vaccination against the influenza syndrome and protection against the common cold [corrected]. *Drugs Exp Clin Res* 1996;22:65–72.

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Conflicts of interest

The author declares no conflicts of interest.

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