

LETTER to the EDITOR

Natural Pro-oxidants: an Alternative Remedy to Explore as Novel Cancer Therapeutic Agents

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Dear Editor

The present letter is an alternative view on the use of natural pro-oxidants as novel cancer therapeutic agents. This group of agents could be defined as natural products that induce oxidative stress, either by generating reactive oxygen species or by inhibiting the antioxidant systems.

Ozben (2007) have discussed the potential impact of oxidative stress on cancer cells in cancer therapy. They suggested a therapeutic strategy on the use of antioxidant inhibitors and/or ROS-generating compounds to trigger apoptosis in cancer cells as proposed by Kong et al. (2000). Ozben (2007) warned the consumer against using synthetic ROS-generating agents and antioxidant inhibitors due to the potential toxic side effects and mutagenic repercussions. Here, we suggest the use of natural products based pro-oxidant agent as ROS-generating agents and antioxidant inhibitors as substitutes for synthetic agents. There are numerous reports suggesting that dietary phytochemicals exhibit prooxidant and cytotoxic properties under certain conditions (Sakihama et al., 2001). The consequences of pro-oxidant activity could cause damage to the biomolecules of cancer cell such as DNA, proteins and lipids, and cellular death as consequence (Aruoma, 2003).

There are numerous reports on pro-oxidant activity in natural plants besides their antioxidant activity. It is noteworthy that some of the most abundant flavonoids and phenolic acids present in food have been reported to act as pro-oxidants (Yordi et al., 2012). Since natural products are generally considered as safe remedies they stand to be the best candidates for the development of natural pro-oxidant based alternative remedy as novel cancer therapeutic agents. Therefore, we suggest the future research in this direction for the improvement of human health especially in cancer patients to minimize undesirable painful side effects.

References

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