

exhibited antimetabolic activity of RS4 may be due to its interaction with microtubules.

RS4 showed an IC_{50} value of 350.22 and 410.15 $\mu\text{L}/\text{mL}$ in MCF-7 and Calu-6 cell lines, respectively [Table 4]. RS1, RS2, and RS3 showed an IC_{50} value more than 500 $\mu\text{L}/\text{mL}$ in MCF-7, HeLa, and Calu-6 cell lines, respectively. The results showed that the final product RS4 may be active against breast and lung cancers. However, the mechanism for such an effect needs further evaluation.

The postmodern “preventive medicine” concept of the Western medicine has absolutely recognized that food plays an important role in the incidence of many diseases. Dietary choice remains the basis for maintaining a healthy lifestyle and well-being, especially relating to cardiovascular disease, diabetes, obesity, hypertension, some cancers, circulatory diseases, and stroke, despite remarkable advances in medicine and pharmaceutical drug development.^[19,20] According to the National Cancer Registry Programme of the India Council of Medical Research, more than 1300 Indians die every day due to cancer. Between 2012 and 2014, the mortality rate due to cancer increased by approximately 6%. The risk of cancer incidence may also be due to the deviation from traditional functional food toward fast, junk, and westernized foods.

The different ingredients used in *rasam* have been individually attributed to various pharmacological effects in preclinical and clinical studies. It is trouble-free to ascertain that the *rasam*'s effects are due to the antioxidant effect of tamarind fruit pulp;^[21,22] antioxidant and anticarcinogenic effect of turmeric;^[23] antioxidant and anticancer activity of chili pepper;^[21] antioxidant activity of cumin;^[21] anticancer and antioxidant effects of garlic bulbs;^[21,24-27] antioxidant and bioavailability enhancing effect of black pepper;^[28,29] and antioxidant activity of coriander leaves.^[30] However, if all ingredients and/or active constituents of *rasam* were scientifically formulated together using available technology, it may not yield the desired physiological result; however, somehow in the preparation of *rasam*, the traditional processing naturally ensures higher cytotoxic, antimetabolic, and antiproliferation activity in the final product. The LC_{50} and IC_{50} values of *rasam* may not be very significant compared to active pharmaceutical agents that are administered in a fixed dose but consuming *rasam* as daily diet can ensure healing effect. The real challenge lies not in proving whether *rasam* is functional foods having health benefits, but in defining what these benefits are and developing the methods to expose them by scientific means.

CONCLUSION

Rasam is a South Indian traditional functional food that can treat breast and lung cancer on chronic use.

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Conflicts of interest

There are no conflicts of interest.

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