Identification of important volatile organic compounds as cancer biomarkers

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Abstract: Cancer is an important public health problem in the world. Cancer is rapidly increasing in most countries and the cancer rate is likely to be doubled by the end of 2035 [1]. It is estimated that more than 50% of the cancers are curable if they are detected in early stages and treated appropriately. It has been demonstrated that during cancer the concentration of volatile organic compounds (VOCs) alters in body fluids or breath. Knowing which VOCs, as a biomarker, alter during the cancer initiation and development and the relationship between them are known to be useful for cancer diagnosis research. Here, we analyzed COD database [2] containing comprehensive information on cancer-related to highlight potentially significant VOCs for cancer detection. Results showed that about 20 volatile organic compounds change in four or more than four types of cancer, which belong to four chemical classes, namely aldehydes, alkanes, ketones and alcohols.

Keywords: volatile organic compounds, Cancer, cancer diagnosis,

References

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