Data were entered in Epi Info version 7.2 and analyzed using IBM SPSS version 22.

Results A total of 503 subjects were interviewed, out of which, 408 (81.1%) were males and 95 (18.9%) were females. Mean (SD) age of the subjects was 28.8 (10.7) years. Most subjects i.e. 387 (76.9%) resided in urban areas. Most were graduate or postgraduate i.e. 237 (47.1%), and almost half i.e. 50.1% were currently unemployed. Median (IQR) family income was Rs 30,000 (38,000).

Out of 503, 229 (45.5%) subjects had consumed SSBs in the last week, and another 135 (26.8%) had consumed it in the last month (but not within the last week). Median (IQR) consumption of SSBs in one year was 4800 (14600) ml. Almost half of them i.e. 250 (49.5%) had a preference for soft drinks, which was followed by 187 (37.2%), who preferred sweetened packaged fruit drinks. Only 64 (12.7%) checked for calorie content before consumption.

Conclusions Although most subjects had the knowledge that SSBs are harmful to health, the consumption and expenditures on SSBs were high.

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SUPPRESSION OF FUMARATE HYDRATASE ACTIVITY INCREASES THE EFFICACY OF CISPLATIN-MEDIATED CHEMOTHERAPY IN GASTRIC CANCER

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Background Gastric cancer (GC) is one of the most common malignancies worldwide. Due to the low rate of early detection, most GC patients were diagnosed at advanced stages and had a poor response to chemotherapy. Some studies found that Fumarate hydratase (FH) participated in the DNA damage response and its deficiency was associated with tumorigenesis in some cancers. In this study, we investigated the relationship between FH and cisplatin (CDDP) sensitivity in GC cell lines.

Methods We examined the role of FH for CDDP sensitivity in GC cells. Immunoblotting, qPCR, MTS were used to verify the relationship between FH expression and CDDP sensitivity. GC cells with FH knockdown were treated by CDDP and the apoptotic indexes were measured. Then we used FH inhibitor-Miconazole Nitrate (MN) to study the role of FH on GC cell death induced by CDDP. CDDP-induced apoptosis was quantified by immunoblotting and flow cytometric analysis. The role of FH on CDDP-induced DNA damage was evaluated using electrophoresis, comet assay and immunofluorescence. The synergistic effect of MN with CDDP on GC was measured on GC cells, cell line-derived xenografts, and patient-derived xenograft (PDX) model.

Results We found that FH was the most significant gene which induced by CDDP treatment and the suppression of FH could enhance the cytotoxicity of CDDP. MN could inhibit FH activity and enhance the effect of CDDP *in vitro* and *in vivo*. We also investigated the significance of expression of FH in GC tissues. The FH expression, which was higher in GC tissues than in noncancerous tissues, was negatively associated with the prognosis of patients.

Conclusions In summary, we demonstrated that FH is a reliable indicator for response to CDDP treatment in GC and the

inhibition of FH may be a potential strategy to improve the effects of CDDP-based chemotherapy.

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LNCRNA XIST REGULATED CHEMOTHERAPEUTIC SENSITIVITY OF MIR-125B-2-3P BY TARGETING WEE1 IN COLORECTAL CANCER

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Background Accumulating evidence has demonstrated that microRNAs regulate diverse tumorigenic processes, and play important roles in tumor metastasis and growth. Recently, miR-125b-2-3p was identified as a meaningful prognosis factor predicting the chemotherapeutic sensitivity in advanced colorectal cancer (CRC). However, the biological function and molecular mechanism of miR-125b-2-3p in chemotherapy of advanced CRC are urgent to explain.

Methods MiR-125b-2-3p expression was detected by real-time PCR (RT-PCR) in CRC tissues. The gain-of-function experiments were performed to assess the effect of miR-125b-2-3p on CRC growth, metastasis, invasion and drug sensitivity *in vitro* and *in vivo*. The prediction of the database has determined the competitive endogenous RNAs (ceRNAs) and target gene, which has confirmed by bioinformatic analysis, luciferase reporter assays, rescue experiments and western blot assays.

Results MiR-125b-2-3p expression was significantly downregulated in CRC tissues and cell lines. The high expression of miR-125b-2-3p was correlated with lower growth ability and metastasis. In addition, miR-125b-2-3p overexpression remarkably improves the chemotherapeutic sensitivity *in vitro* and *in vivo*. Mechanistically, miR-125b-2-3p was regulated by competitive endogenous RNAs, LncRNA-XIST, and influenced the expression of WEE1 G2 checkpoint kinase (WEE1). Upregulation of miR-125b-2-3p would reverse CRC growth and EMT process caused by LncRNA XIST by rescue analysis.

Conclusions Low expression of miR-125b-2-3p in CRC was linked to lower chemotherapeutic sensitivity and poor survival. LncRNA XIST would promote CRC invasion and migration by functioning as a ceRNA for miR-125b-2-3p to mediate WEE1 expression. Our finding suggested that miR-125b-2-3p may serve as a potential marker of chemotherapeutic sensitivity in CRC patients.

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ASTRAGALUS POLYSACCHARIDE PROMOTES ADRIAMYCIN-INDUCED APOPTOSIS IN GASTRIC CANCER CELLS

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Background As a polysaccharide, astragalus polysaccharide (APS) is extracted from the radix of astragalus membranaceus, a commonly applied herbal compound in traditional Chinese medicine. APS has been reported to increase tumor response, stabilize and reduce chemotherapy toxicity, and improve performance status.