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EDITORIAL

Long noncoding RNA HMlincRNA717 and AC130710 have been officially named as gastric cancer associated transcript 2 (GACAT2) and GACAT3, respectively

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Shortly after the articles entitled "Low expression of lncRNA-HMlincRNA717 in human gastric cancer and its clinical significances" and "lncRNA-AC130710 targeting by miR-129-5p is upregulated in gastric cancer and associates with poor prognosis" published in *Tumour Biology* [1, 2], the long noncoding RNA (lncRNA) HMlincRNA717 and AC130710 that were studied in these papers have been officially named by HUGO Gene Nomenclature Committee (HGNC). Human Gene Nomenclature Database (www.genenames.org/hgnc-searches) shows that their HGNC ID is 50516 and 50847, respectively. And readers can find the detail information from "http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=50516" and "http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=50847" [3, 4]. Both of them are long intergenic ncRNAs (lincRNAs).

As HMlincRNA717 and AC130710 were first found to be associated with gastric cancer, the committee has named them as "gastric cancer associated transcript 2 (GACAT2)" and "gastric cancer associated transcript 3 (GACAT3)," respectively [3, 4]. For HMlincRNA717, the approved symbol is GACAT2, and the approved name is gastric cancer associated transcript 2 (non-protein coding) [3]. For AC130710, the approved symbol is GACAT3, and the approved name is gastric cancer associated transcript 3 (non-protein coding) [4].

HMlincRNA717's previous symbol/name is "MTCL1 antisense RNA 1," MTCL1-AS1. Its synonym and Ensembl number is HMlincRNA717 and ENST00000579368, respectively. Its gene is located at human Chr 18p11.22. Its transcript is 818 nucleotides (nt) in length.

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Our previous lncRNA microarray screening discovered that GACAT2 (HMlincRNA717) is one of the 135 aberrantly expressed lncRNAs in gastric cancer tissues comparing with paired adjacent nontumorous tissues (GEO accession numbers: 47850) [5–7]. When using cell lines as models, we further found that GACAT2 was significantly downregulated in five gastric cancer cell lines (AGS, BGC-823, HGC-27, MGC-803, and SGC-7901) compared with normal gastric epithelial cell GES-1 [2]. Similar to the situations in cell lines, by expanding the gastric cancer sample size (313 samples), we found that GACAT2 was downregulated in 62.6 % gastric cancer tissues compared to the paired adjacent normal tissues [2]. It also significantly decreased in dysplasia compared with healthy control group. Its expression level was significantly associated with cancer distant metastasis, perineural invasion, and venous invasion [2].

AC130710's previous symbol/ name is "long intergenic nonprotein coding RNA 1458," LINC01458. Its synonym and Ensembl number is lncRNA-AC130710 and ENST00000426539, respectively. Its gene is located at human Chr 2p24.3. Its transcript is 1,096 nt in length.

Contrary to GACAT2, the expression level of GACAT3 (AC130710) was not only significantly upregulated in gastric cancer tissues but also in gastric cancer cell line MGC-803 [2], which is consistent with the results of the lncRNA microarray [5, 7]. Its expression level was significantly correlated with tumor size, distant metastasis, and TNM stages [2].

Moreover, the mechanism study showed that GACAT3 is one of the predicted targets of miR-129-5p with one complementary binding site [2]. We detected the GACAT3 expression level in MGC-803 cell line transfected with miR-129-5p mimics, and the results showed that GACAT3 expression level was significantly decreased [2]. Since the fact that miR-129-5p, negatively regulating its targeting genes in

post-transcriptional level, was downregulated in gastric cancer cells [8], these data revealed that miR-129-5p may play an important role in the regulating of GACAT3 expression in gastric cancer.

In conclusion, our results suggested that GACAT2 and GACAT3 may play crucial roles in the occurrence and development of gastric carcinoma and may be used as potential biomarkers in the diagnosis of gastric cancer.

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Conflicts of interest None

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