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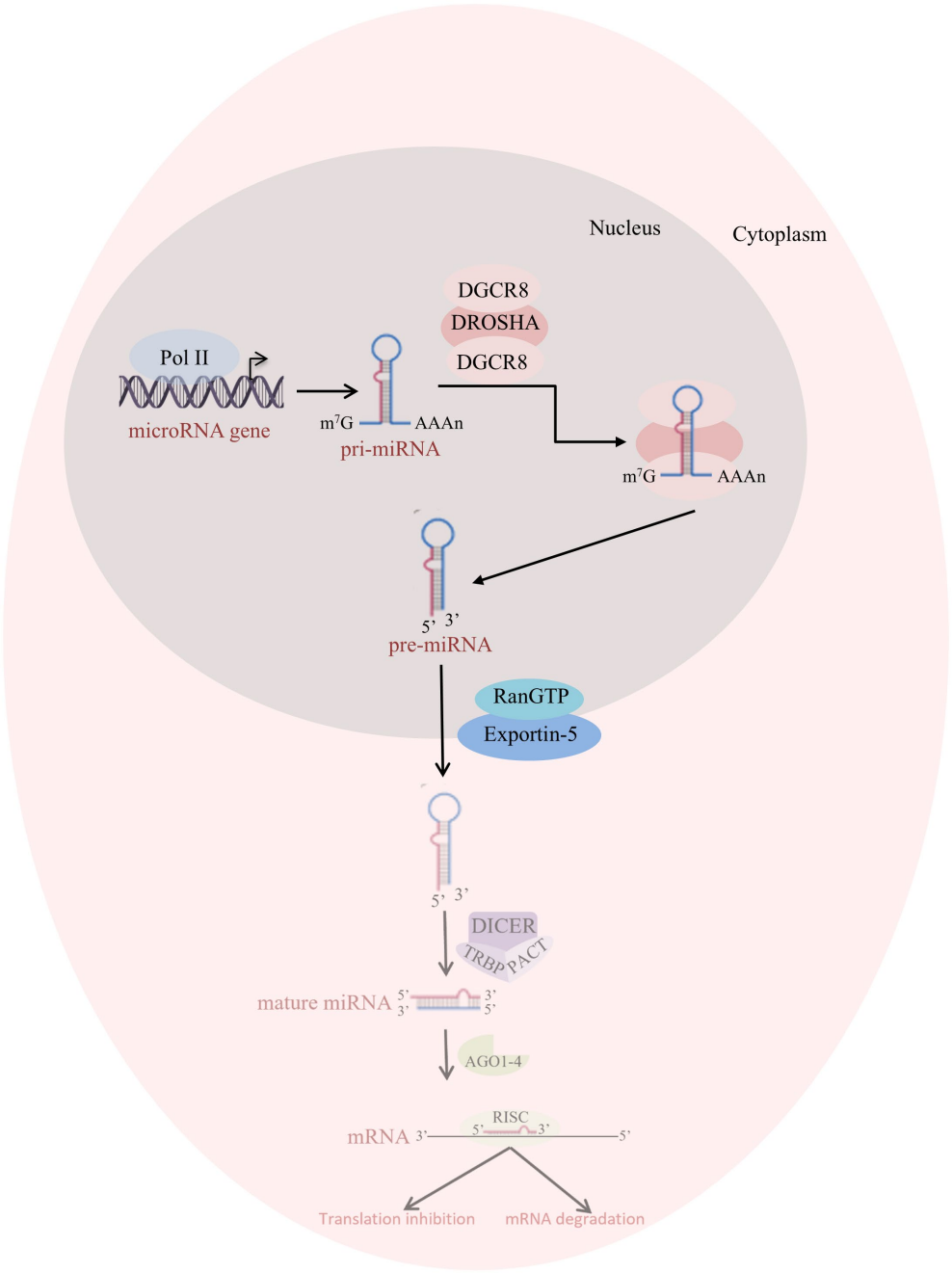
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*Article – Supplementary Figures*

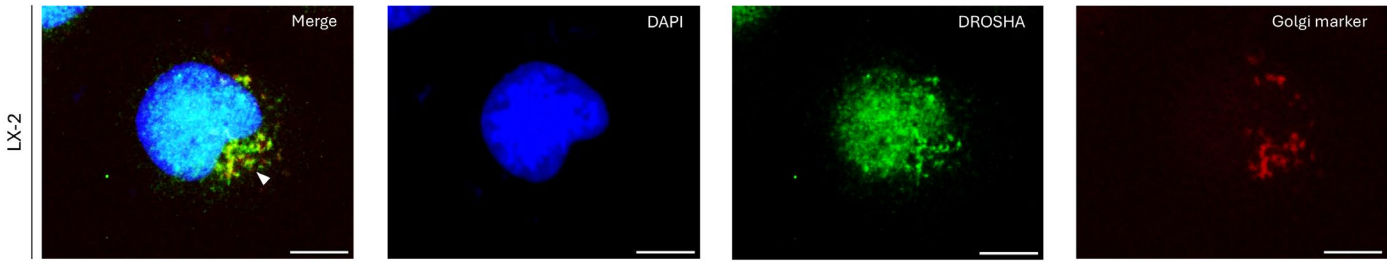
# Non-Canonical Compartmentalization of DROSHA Protein at the Golgi Apparatus: miRNA Biogenesis-Independent Functionality in Human Cancer Cells of Diverse Tissue Origin

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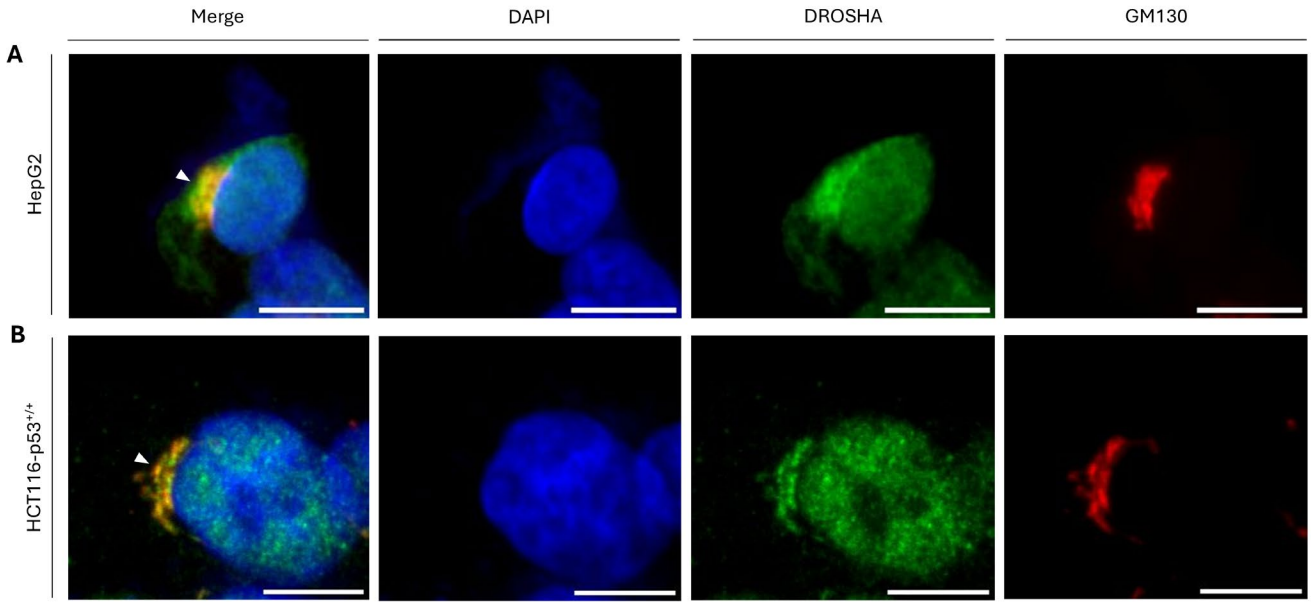
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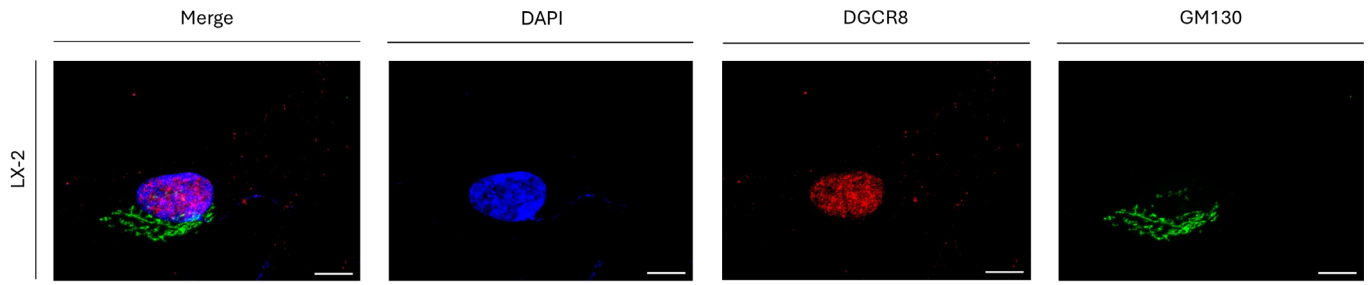

**Supplementary Figure S1. Graphic illustration of the major functional role of DROSHA protein in a typical cell nucleus.** During the canonical pathway of miRNA biogenesis, the primary miRNAs (pri-miRNAs), transcribed by the RNA Polymerase II (Pol II), are cleaved by the Microprocessor complex DROSHA-DGCR8 (1:2 molecular stoichiometry), generating the precursor miRNAs (pre-miRNAs), which are, then, being exported from the nucleus to the cytoplasm, for further processing, by the "DICER-AGO" system engagement.



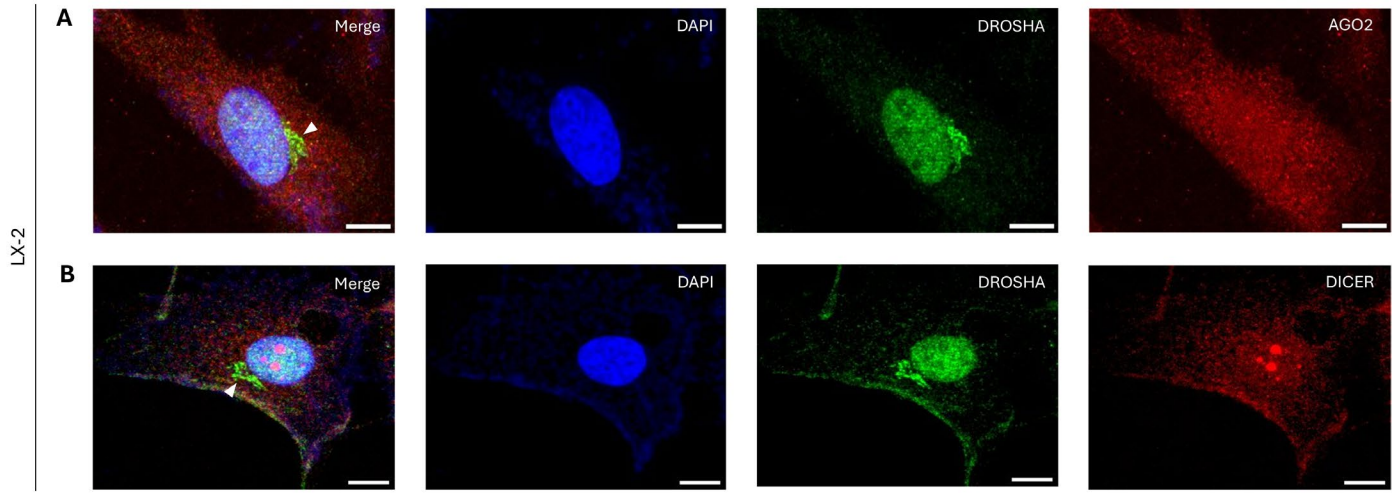

**Supplementary Figure S2. DROSHA's compartmentalization at the Golgi apparatus in human hepatic/liver, immortalized/"normal", cells.** CLSM-captured immunofluorescence images of LX-2 (human stellate hepatic/liver) cells, presenting highly overlapping signals of endogenous DROSHA protein and (transiently) transfected "CellLight™ Golgi-RFP" plasmid that produces a Golgi system-specific marker (white arrowhead: "DROSHA-at-Golgi" immunophenotype). DROSHA is visualized in green colour; Golgi apparatus-specific genetic marker is shown in red colour; and cell nucleus is presented in blue colour (DAPI). Scale bar: 10 μm.



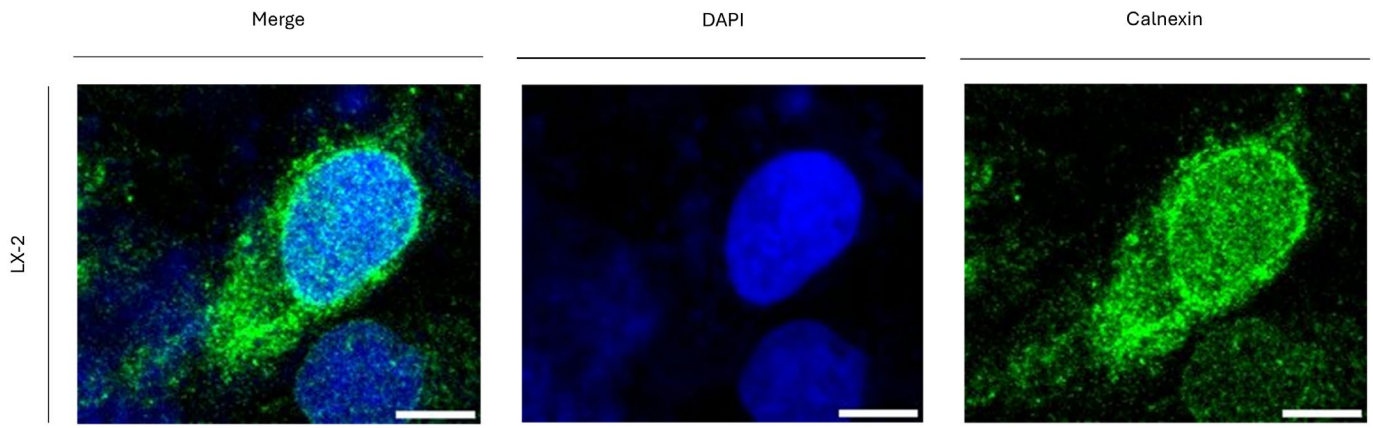

**Supplementary Figure S3. Co-compartmentalization of DROSHA and GM130 proteins at the Golgi organelle in human cancer cells.** CLSM-captured immunofluorescence images of (**A**) HepG2 (human hepatocellular carcinoma/liver cancer) and (**B**) HCT116-p53$^{+/+}$ (human colon cancer; wild-type *TP53*) cells, presenting highly overlapping immunodetection signals (merger of green and red colours) of DROSHA and GM130 proteins at the Golgi apparatus (white arrowheads: "DROSHA-at-Golgi" immunophenotype). DROSHA is visualized in green colour; GM130 (Golgi apparatus-specific biomarker) is shown in red colour; and cell nucleus is presented in blue colour (DAPI). Scale bar: 10 μm.




**Supplementary Figure S4. Lack of DGCR8 and GM130 co-localization patterning at the Golgi apparatus in LX-2 cells.** CLSM-captured immunofluorescence images of LX-2 (human stellate hepatic/liver) cells, demonstrating the absence of overlapping immunodetection signals in between DGCR8 (in the nucleus) and GM130 (at the Golgi system) proteins. DGCR8 is visualized in red colour; GM130 (Golgi organelle-specific biomarker) is shown in green colour; and cell nucleus is presented in blue colour (DAPI). Scale bar: 10 μm.




**Supplementary Figure S5. Golgi apparatus lacks AGO2 and DICER proteins in human hepatic/liver, immortalized/"normal", cells.** CLSM-derived immunofluorescence images of LX-2 (human stellate hepatic/liver) cells, demonstrating the absence of co-localization patterning in between DROSHA and (**A**) AGO2 or (**B**) DICER (fundamental RNAi-machinery components), at the Golgi apparatus (white arrowheads: "DROSHA-at-Golgi" immunophenotype). DROSHA is visualized in green colour; AGO2 and DICER are shown in red colour; and cell nucleus is presented in blue colour (DAPI). Scale bar: 10 μm.




**Supplementary Figure S6. Endoplasmic Reticulum visualization in human hepatic/liver, immortalized/"normal", cells.** CLSM-mediated immunofluorescence images of LX-2 (human stellate hepatic/liver) cells, presenting the sub-cellular distribution patterning of Calnexin, an Endoplasmic Reticulum (ER) membrane protein and major ER-specific marker. Calnexin is visualized in green colour; and cell nucleus is shown in blue colour (DAPI). Scale bar: 10 μm.

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