CANCER

miR-492—a potential biomarker for metastatic hepatoblastoma?

Metastatic hepatoblastoma tumors display increased expression of the microRNA (miRNA) miR-492, and levels of this miRNA can be used to differentiate metastatic from nonmetastatic stages of hepatoblastoma, report Julia von Frowein and co-workers in *Hepatology*.

Hepatoblastoma is the most common malignant liver tumor in early childhood, and high-risk patients—those with metastatic disease and low levels of α -fetoprotein—have a poor prognosis (3-year survival ~50%). von Frowein says that there is an unmet need for the development of new early diagnostic or therapeutic tools.

The oncogene *PLG1* is overexpressed in hepatoblastoma and is believed to influence the pathogenesis of this tumor. The researchers identified miR-492 as the only miRNA whose expression levels varied in response to *PLG1* dysregulation. Sequence analysis and

subsequent overexpression studies suggested that miR-492 originates from an exonic region of the *KRT19* gene, previously identified as a marker of hepatoblastomas and other tumors.

The analysis of miR-492 and *KRT19* expression in 26 hepatoblastoma samples showed a striking correlation; tumors with low levels of *KRT19* displayed weak expression of miR-492 and samples with high levels of *KRT19* showed increased expression of the miRNA. In addition, the expression levels of miR-492 and *KRT19* were higher in the 13 tumor samples from patients with distant metastases (stage IV according to the German system)

than in the 13 samples from patients with nonmetastatic hepatoblastoma (German stages I, II and IIIA).

“We will further validate the utility of miR-492 as a biomarker for early diagnostic purposes,” concludes von Frowein. “For evaluating the therapeutic utility of this miRNA we have to more precisely elaborate the exact functional impact of dysregulated miR-492 in hepatoblastoma.”

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Original article von Frowein, J. *et al.* miR-492 is processed from the keratin 19 gene and upregulated in metastatic hepatoblastoma. *Hepatology* doi:10.1002/hep.24125