

AMP case report: December 2016 test yourself answers

In the December 2016 issue was a report, "[Isolated hepatic neuroendocrine tumor expressing albumin mRNA and arginase-1](#)," written by members of the Association for Molecular Pathology. Here are answers (in bold) to the three "test yourself" questions that followed that case report.

1. Which of the following is true regarding primary hepatic neuroendocrine tumors?

- a) They represent the third most common type of primary liver cancer.
- b) Features of neuroendocrine differentiation are frequently found in both hepatocellular carcinomas and cholangiocarcinomas.
- c) They have a tendency to metastasize to endocrine organs.
- d) A neuroendocrine tumor presenting in the liver will prompt an extensive search for a primary tumor site.**
- e) They are known to arise from neural crest cells that migrate to the liver during embryogenesis.

2. From the case report, which of the following may be inferred regarding branch chain in situ hybridization for albumin mRNA?

- a) It has limited utility because of the widespread presence of albumin in serum and interstitial tissue.
- b) It requires fresh frozen tissue as a substrate.
- c) It has high sensitivity for mRNA detection in routinely fixed paraffin-embedded tissue due to probe tiling and signal amplification.**
- d) Fluorescence microscopy is required for analysis.
- e) The results must be confirmed by protein immunohistochemistry due to mRNA cross-reactivity with pseudo-albumin.

3. Detection of albumin mRNA in a documented neuroendocrine tumor restricted to the liver is suggestive of:

- a) contamination by background hepatocytes.
- b) contamination by extracellular albumin.
- c) the presence of a housekeeping gene common to all neuroendocrine tumors.
- d) an incorrect diagnosis.
- e) multipotential plasticity of a primary hepatic tumor stem/progenitor cell.**