

Tumor resident Protein Marker Panel

Prediction of Time to Recurrence in Patients with Intrahepatic Cholangiocarcinoma

Technology

Liver cancer of the type intrahepatic cholangiocarcinoma (ICC) is among the most aggressive forms of tumors. The chances of survival for affected patients are often low because the cancer frequently returns after treatment (5-year survival rate of 15-40%), and reliable prognostic markers are still lacking. The inventors have analyzed the protein composition of untreated ICC tumors in detail using modern mass spectrometry. This enabled the identification of two clearly distinct tumor groups: one enriched in components of the extracellular matrix, and another primarily characterized by strong cell proliferation. These groups also differ markedly in how quickly the cancer recurs after treatment. Based on these data, a test involving only six proteins was developed that reliably distinguishes between these tumor types—even in other patient groups. This makes the direct use of such protein analyses possible for stratifying patients. Overall, the invention demonstrates how cutting-edge technologies—from precise molecular analyses and the development of diagnostic tools to the testing of new therapeutic approaches—can work together to pave the way toward more personalized treatment strategies for cancer.

The technology is open for licensing, as well as for co-development with the inventors.

Innovation

- Six proteins are measured in tumor tissue directly after surgery:
 - VTNC, BGN, H10 high
→ low recurrence risk (good prognosis)
 - LDHA, ALDOA, SKI low
→ high recurrence risk (poor prognosis)
- The test uses a combination of mass spectrometry and antibodies, and works reliably.

Application

- Enables **better prognosis for patients** by allowing predictions about the time to recurrence and chances of survival.
- Enables doctors to **monitor patients more effectively** by comparing patient samples over time.
- Enables **more targeted and timely therapy** by identifying patients who require additional treatments (such as chemotherapy or radiation).

Responsible Scientist

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Patent Status

EP24718180.3

US 19/485,457

Patents pending

Earliest Priority Date

20.05.2022

Reference Number

ZEE2021122001

Status: Feb-26



CTF – The R&D Company of the
Freiburg University and the Freiburg
University Medical Center

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