

Prognostic Breast Cancer Test – Optimizing treatment based on tumor fingerprinting

KEYWORDS

- Cancer - Fingerprinting
- IVD (prognosis)
- Breast Cancer
- Personalised Treatment

Technology Market :

- Breast cancer progression is associated with the extent of hypoxia at the primary site
- A transcriptomic signature related to the cycling nature of tumor hypoxia has been identified and validated as a prognostic tool on datasets from ~2000 breast cancer patients
- A signature-based algorithm allows patient stratification at the time of diagnosis (see Figure) with a significantly better discriminating capacity than existing assays
- Together with conventional clinico-pathological criteria, the algorithm provides the physician with a decision-making tool to optimize breast cancer patient treatment

The UCL invention

- Paraffin-embedded or frozen tumor specimens are subjected to mRNA extraction and qPCR, the results of which are then processed by a signature-based algorithm
- The algorithm is highly flexible and can be trained for tumors of different origins and tumor subsets

Technology Status

- The signature-based algorithm was retrospectively validated on public datasets
- Ongoing prognostic analysis on ER+ HER- node-negative breast cancer patients
- Patent pending and algorithm property of the inventors

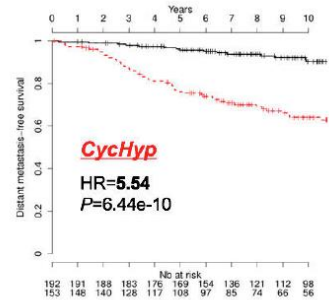


Figure. Stratification of ER⁺ HER2⁻ node-negative breast cancer patients at high (red) and low (black) risk at the time of diagnosis.

Importantly, some patients wrongly classified at high risk using the clinicopathological criteria (« false positive ») were identified at low risk when using the signature and inversely the signature identified patients at high risk among those wrongly classified at low risk based on clinicopathological criteria (« false negative »), further validating the discriminating potential of the signature (not shown).