Bibliography

**OncoBEAM™ Technology: BEAMing Digital PCR**

Sysmex Inostics’ BEAMing Digital PCR technology combines emulsion PCR with magnetic beads and flow cytometry for the highly sensitive detection of mutant tumor DNA molecules.

**OncoBEAM™ Advantage: Unparalleled Sensitivity with High Multiplexing Capabilities**

Blood-based mutation analysis requires a sensitive technology. Our BEAMing technology delivers increased sensitivity compared to other liquid biopsy methods providing reliable molecular information for timely and non-invasive treatment selection and enhanced prediction of resistance to therapy.

- Data shown at SABCS 2015 highlighted the fact that the OncoBEAM™ PIK3CA blood test was a better predictor of therapy response than the standard of care (SOC) tissue test.

- In lung cancer patients, eligible for 3rd generation TKIs, the OncoBEAM™ EGFR blood test accurately identified patients who would benefit from T790M targeted therapy even when tissue was not available for treatment decisions.

- Data presented at WCGI 2016 showed that 30% of the analyzed mCRC patients had a mutant allele fraction (MAF) of between 0.01% - 1.00% using the OncoBEAM™ 34 mutation RAS test (see Fig. 1).

**OncoBEAM™: Analytical Sensitivity**

<table>
<thead>
<tr>
<th>Assay (Mutation Number)</th>
<th>Analytical Sensitivity — Cut-Off (% Mutant Fraction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGFR (10) / L858R / Del19</td>
<td>0.03</td>
</tr>
<tr>
<td>KRAS (15) / NRAS (18) / BRAF (2) / HRAS (2)</td>
<td>0.03</td>
</tr>
<tr>
<td>AKT1 (1) / ESR1 (12) / PIK3CA (9)</td>
<td>0.02</td>
</tr>
<tr>
<td>ALK (12) / ROS1 (3)</td>
<td>0.02 – 0.04*</td>
</tr>
<tr>
<td>IDH1 (1) / IDH2 (5)</td>
<td>0.02 – 0.04*</td>
</tr>
</tbody>
</table>

* Depending on mutation

**OncoBEAM™: The Gold Standard for Blood-Based Molecular Cancer Testing of ctDNA**

- 2/3 of the top 15 global pharmaceutical oncology companies are repeat customers
- 35,000+ samples analyzed across multiple cancer types
- Development & Commercialization of first blood-based ALL-RAS IVD KIT for mCRC patients
- Chosen technology for OPUS, CRYSTAL, TIGER, CORRECT, BELLE, AURA
- and a multitude of other landmark trials

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*Fig. 1.* In first-line treatment of metastatic colorectal cancer, 50% of patients show ctDNA at <1% fraction.