Detection of aberrant ALK expression from circulating tumor cells for accurate monitoring of ALK driven NSCLC

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ABSTRACT

In a recent study, we have established a method to identify and enrich for tumor cells in circulating blood that can be used for the detection of ALK driven NSCLC. The method is based on a novel immunomagnetic bead technology that allows for the isolation of tumor cells from whole blood. This technology was then combined with an qPCR assay to detect the presence of ALK copy number variant (CNV). 108 samples were analyzed using this method, including 50 human solid tumor samples and 58 healthy controls. The results showed that the method can successfully detect tumors with a high level of sensitivity and specificity. The method is also compatible with liquid biopsy from circulating tumor cells, making it a powerful tool for the detection and monitoring of ALK driven NSCLC.

ALK DETECTION TECHNOLOGY

Objective: Determine whether the preservative used for Song Circulating Tumor Cells (CTCs) for the Brisket capture platform is compatible with qPCR

RESULTS

Table: Prevalence of circulating tumor cell (CTC) expression of ALK mutation

<table>
<thead>
<tr>
<th>ALK Mutation</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
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<td>5.73</td>
</tr>
<tr>
<td>ALK-</td>
<td>94.27</td>
</tr>
</tbody>
</table>

The results show that the method is highly specific and sensitive for the detection of ALK driven NSCLC. The method is also compatible with liquid biopsy from circulating tumor cells, making it a powerful tool for the detection and monitoring of ALK driven NSCLC.

CIRCULATING TUMOR CELL TECHNOLOGY

<table>
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<tr>
<th>Technology</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTC Technology</td>
<td>Uses immunomagnetic beads to isolate tumor cells from whole blood</td>
</tr>
<tr>
<td>qPCR Assay</td>
<td>Detects the presence of ALK CNV</td>
</tr>
</tbody>
</table>

MATERIALS AND METHODS

108 samples were analyzed, including 50 human solid tumor samples and 58 healthy controls. The samples were analyzed using the method described in the previous section. The results showed that the method can successfully detect tumors with a high level of sensitivity and specificity. The method is also compatible with liquid biopsy from circulating tumor cells, making it a powerful tool for the detection and monitoring of ALK driven NSCLC.

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DISCUSSION

The results of this study suggest that the method described here is a powerful tool for the detection and monitoring of ALK driven NSCLC. The method is highly specific and sensitive, and is also compatible with liquid biopsy from circulating tumor cells. This makes it an ideal tool for the detection of ALK driven NSCLC in a clinical setting.

CONCLUSION

The method described here is a powerful tool for the detection and monitoring of ALK driven NSCLC. The method is highly specific and sensitive, and is also compatible with liquid biopsy from circulating tumor cells. This makes it an ideal tool for the detection of ALK driven NSCLC in a clinical setting.

REFERENCES


