Preclinical Characterization of YBL-006, a Fully Human Anti-PD-1 Antibody Being Ready for Clinical Studies
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Abstract
Cancer immunotherapy aims to reverse tumour immunity which enhances T cell regulatory pathways to provide antitumor immunity. Tumors, either primary or metastatic, share a unique immunosuppressive microenvironment. PD-1 in tumor and PD-L1 in tumor macrophages are critical for immune evasion through the inhibition of effector T cells. The YBL-006 antibody was designed to bind to human PD-1 and not to bind to mouse PD-1. We report here the preclinical characterization of YBL-006 with tumor models and immune cell populations.

In vitro assay for safety prediction

In vivo efficacy of YBL-006 in HCC27 Human NSCLC MixXeno Model

Tissue cross-reactivity

YBL-006 reduced PD-L1 expression on human and mouse PD-1 expressing cells in vitro.

YBL-006 in vivo treatment in human tumor xenograft models demonstrated tumor shrinkage.

Pharmacokinetics

YBL-006 had a plasma half-life of 3-5 days and a terminal half-life of 5-7 days.

Table 1: Pharmacokinetics of YBL-006 from different species

<table>
<thead>
<tr>
<th>Species</th>
<th>Half-life (days)</th>
<th>T1/2 (days)</th>
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<tbody>
<tr>
<td>Human</td>
<td>3-5</td>
<td>5-7</td>
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<tr>
<td>Mouse</td>
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One-month repeated toxicology study and toxicokinetics

YBL-006 was well tolerated at doses ranging from 0.1 to 10 mg/kg.

References