

# Hit and lead compound discovery of antibody-drug conjugate (ADC) targeting Doppel, a tumor-specific molecule

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<b>ONCOLOGY</b>	<b>Hit</b>
<b>Product Type</b>	Immunoglobulin product (mAb) (Antibody-Drug Conjugate)
<b>Indication</b>	Doppel-expressing cancer
<b>Target</b>	PRND (Doppel)
<b>MoA (Mechanism of Action)</b>	<p>Binding to cell surface antigen → Internalization → Lysosomal degradation → Active payload release → Cell death → Amplification through bystander killing effect</p> <p>The diagram illustrates the mechanism of action of the ADC. On the left, an <b>Ag(+) cancer cell</b> is shown with <b>Doppel antigen</b> on its surface. The process follows these steps: 1. <b>Doppel-ADC binding</b>, 2. <b>Receptor-mediated endocytosis</b>, 3. <b>Lysosomal degradation</b> within a <b>Lysosome</b>, 4. <b>Drug release</b> of <b>MMAE</b>, 5. <b>Microtubule disruption</b> leading to <b>Apoptosis</b>, and 6. <b>Free drug diffusion</b>. On the right, an <b>Ag(-) cancer cell</b> is shown where 7. <b>Bystander killing</b> occurs, leading to <b>Apoptosis</b> and <b>in situ amplification</b>. This is labeled as a <b>“Bystander killing effect”</b>. The overall process is labeled as <b>“Selective Targeting”</b>.</p>
<b>Competitiveness</b>	<p><b>First In Class</b></p> <ul style="list-style-type: none"> <li>• <b>High efficacy &amp; Low toxicity:</b> Doppel is rarely expressed in normal tissues and specifically expressed only in tumor.</li> <li>• <b>Overcome tumor heterogeneity:</b> introducing new linker to induce bystander killing effect.</li> <li>• <b>Patient selection:</b> companion diagnostics using doppel as a biomarker</li> </ul>
<b>Development Stage</b>	Hit
<b>Route of Administration</b>	Parenteral-Intravenous