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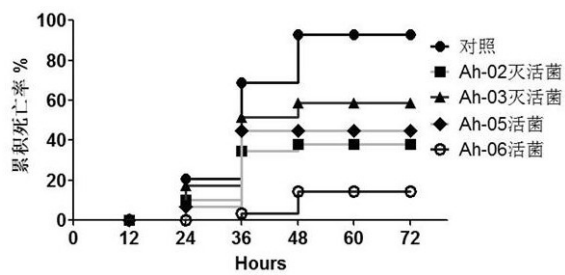
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菌株编号	Ah-01	Ah-02	Ah-03	Ah-04	Ah-05	Ah-06	Ah-07	Ah-08	Ah-09
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菌株来源	Diseased crucian carp	Diseased crucian carp	water	water	water	Pond soil	Pond soil	Diseased carp	Diseased carp
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目的基因及 NCBI 登陆号	引物序列 (5' - 3')	退火温度/°C	PCR 产物长度/bp
气溶素 ( <i>aerA</i> ) (NR_074841.1)	CGTGCTGGCAACAAAGGACAG CAAGAACAAGTTCAAGTGGCCA	50	309
溶血素 ( <i>hlyA</i> ) (AF485772.1)	ACGAAGGTGTGGTTCCAGT TTCGTGCCAAACCTGGATGT		55
β-溶血素 ( <i>β-hly</i> ) (FJ380998.1)	TCAGGGTCCGTAGGCTCACA TTGTGAGGGTTATCGTTGTGG		50
肠毒素 ( <i>altA</i> ) (L77573.1)	TGCTCGCCTTGCCTTGTAC TGACCCAGTCCTGGCACGGC		55
细胞毒肠毒素 ( <i>act</i> ) (KC687134.1)	GGTGATCGATCACCACCAGC AGAAGGTGACCACCAAGAACA		52
丝氨酸蛋白酶 ( <i>ahpA</i> ) (KC812110.1)	ACCTGACATCGGCATTGAAATC GGCGTACAGGGTCAGGGCATC		55
弹性蛋白酶 ( <i>ahpB</i> ) (AF193422.1)	GTTCTCGAACGGCAGCTTGG GGCCGGGATGGCGAGTTTC		55
脂肪酶 ( <i>lip</i> ) (AB237183.1)	CGGCATCGGCTGGTGACAGG ATCTTCTCCGACTGGTTCGG		50
鞭毛蛋白 ( <i>fla</i> ) (AY424358.1)	CCGTGCCAGGACTGGGTCTT GACTGGTTGCGGATGGT		50
黏附素基因 ( <i>aha</i> ) (EF189590.1)	GGCTATTGCTATCCCGCTCTGTT CGGTCCACTCGTCGTCCATCTTG		55
外膜蛋白 ( <i>omp</i> ) (KP942407.1)	CGGAAATTCACAATAGCCCGACTCTAC CGGTCGACCAGGAAAGTCCAGGCATC		60
III 型分泌系统 ( <i>apoB</i> ) (KP689330.1)	CGATAAGCAGTGAACGCCCTCT CTCGAAGACTTCGGGAGACG		55
I 型分泌系统 ( <i>vasH</i> ) (DQ667172.1)	TTTTCCACCCCTCTFGCCTATG AGCCGTGCCACCCGCTCCTT		55

10×PCR 缓冲液            2.5μL

25mM MgCl<sub>2</sub>            1μL

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10mM dNTP	0.5 $\mu$ L
20 $\mu$ M 正向引物	1 $\mu$ L
20 $\mu$ M 反向引物	1 $\mu$ L
模板 DNA	0.5~10 $\mu$ L
Taq 酶(5U/ $\mu$ L)	0.2 $\mu$ L
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ddH <sub>2</sub> O 补至总体积	25 $\mu$ L

Bacterial strain	Carrying case of virulence genes													1×10 <sup>8</sup> cfu/g 菌量致死率 (%)	LD <sub>50</sub> in <i>Carassius auratus</i> (cfu/g)
	<i>AerA</i>	<i>hlyA</i>	<i>β-hly</i>	<i>altA</i>	<i>act</i>	<i>ahpA</i>	<i>ahpB</i>	<i>lip</i>	<i>fla</i>	<i>aha</i>	<i>omp</i>	<i>apoB</i>	<i>vasH</i>		
Ah-01	+	+	+	+	+	+	+	+	+	+	+	-	+	100	1.18×10 <sup>6</sup>
Ah-02	+	+	+	+	+	+	+	+	+	+	+	+	+	100	6.05×10 <sup>5</sup>
Ah-03	+	+	-	-	+	+	+	+	+	+	+	+	+	100	1.55×10 <sup>6</sup>
Ah-04	+	+	-	+	+	+	+	+	-	+	+	+	+	53.33	8.12×10 <sup>6</sup>
Ah-05	-	-	-	-	-	+	-	+	-	-	-	-	-	0	>5×10 <sup>7</sup>
Ah-06	+	+	-	+	-	+	+	+	-	+	+	+	+	0	>5×10 <sup>7</sup>
Ah-07	+	-	+	+	+	+	-	+	-	+	-	+	+	23.33	1.8×10 <sup>7</sup>
Ah-08	+	-	+	+	+	+	-	+	+	+	-	-	+	60	5.25×10 <sup>6</sup>
Ah-09	+	+	+	+	+	+	+	+	+	+	+	-	+	66.66	2.36×10 <sup>6</sup>



菌株	免疫状态	感染数量/尾	死亡数/尾						累积死亡率%	免疫保护率%
			12h	24h	36h	48h	60h	72h		
对照	生理盐水	30	0	6	14	7	0	0	90	0
Ah-02	灭活菌	30	0	3	7	1	0	0	36.66	59.3
Ah-03	灭活菌	30	0	5	10	2	0	0	56.66	37
Ah-05	活菌	30	0	2	11	0	0	0	43.33	51.9
Ah-06	活菌	30	0	0	1	3	0	0	13.33	85.2

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