

## P1156 Test Report

### Experiment: Verify the plasmid extraction efficiency of P1156 kit

- Sample type: high copy vector culture medium (50ml and 100ml), low copy vector culture medium (100ml and 200ml)
- Elution volume: 1000~2000 $\mu$ l
- Extraction time: 60 minutes
- Test kit: P1156
- Control kit: P1001, classic plasmid small amount extraction kit
- Detection method: nanodrop

#### Experiment data:

| A260/230 | A260/280 | Conc. $\mu$ g/ $\mu$ l | Yield $\mu$ g | Elution volume | B. liquid amount | Average yield of 1 ml B. liquid $\mu$ g | Vector type                        | Kit   | Verification conditions |                |
|----------|----------|------------------------|---------------|----------------|------------------|---|------------------------------------|-------|-------------------------|----------------|
| 2.16     | 1.83     | 82.96                  | 16.6          | 100 $\mu$ l    | 1ml              | 16                                      | 7-1Bacteria<br>High copy<br>vector | P1001 | /                       |                |
| 2.15     | 1.8      | 77.37                  | 15.5          |                |                  |   |                                    |       |                         |                |
| 2.02     | 1.78     | 768.13                 | 768.1         | 1ml            | 50ml             | 15.4                                    |                                    | P1156 | Without<br>PW1          |                |
| 2.18     | 1.79     | 893.92                 | 893.9         |                |                  | 17.9                                    |                                    |       |                         |                |
| 2.13     | 1.81     | 747.84                 | 747.8         |                |                  | 15.0                                    |                                    |       |                         |                |
| 2.26     | 1.79     | 561.06                 | 1122.1        | 2ml            | 100ml            | 11.2                                    |                                    |       | P1156                   | Without<br>PW1 |
| 2.16     | 1.85     | 726.04                 | 1452.1        |                |                  | 14.5                                    |                                    |       |                         |                |
| 2.26     | 1.88     | 621.74                 | 1243.5        |                |                  | 12.4                                    |                                    |       |                         | Add PW1        |
| 2.02     | 1.8      | 127.43                 | 12.7          |                |                  | 100 $\mu$ l                             |                                    |       |                         |                |
| 2.01     | 1.82     | 126.85                 | 12.6          |                |                  |   |                                    |       |                         |                |
| 1.88     | 1.81     | 296.56                 | 296.6         | 1ml            | 100 ml           |   | 2.9                                |       | P1156                   | Without<br>PW1 |
| 2.34     | 1.83     | 336.30                 | 336.3         |                |                  |   | 3.3                                |       |                         |                |
| 2.27     | 1.81     | 228.00                 | 228.0         |                |                  |   | 2.3                                |       |                         |                |
| 1.88     | 1.83     | 280.16                 | 560.3         | 2ml            | 200ml            |   | 2.8                                | P1156 |                         | Without<br>PW1 |
| 2.21     | 1.83     | 316.5                  | 633.0         |                |                  |   | 3.2                                |       |                         |                |
| 2.20     | 1.85     | 250.22                 | 500.4         |                |                  |   | 2.5                                |       |                         | Add PW1        |
|          |          |                        |               |                |                  |   |                                    |       |                         |                |

In this experiment, P1001 was used as control to verify the extraction of plasmid DNA and nucleic acid purity. The extracted plasmid DNA was analyzed by electrophoresis and Nanodrop, and the results are as follows:

1. The plasmid extracted from P1156 had A260/280 values ranging from 1.79 to 1.90 and A260/230 values ranging from 1.8 to 2.5, indicating that the purity of the plasmid DNA extracted by this kit meets the standard.
2. P1156 is a large column with 8 layers of glass fiber filter membrane. Due to the water absorption of the filter membrane, when washed with 1000 $\mu$ l, the final result is 850-900 $\mu$ l. 100-150 $\mu$ l is adsorbed by the filter membrane and cannot be washed.
3. When extract from low copy vector culture medium, P1156 get a yield of 250-550 $\mu$ g from 100ml/200ml bacterial solution, while the control is 12 $\mu$ g from 5ml. According to the yield, the extraction efficiency of P1156 is comparable to that of conventional small-amount extraction. When using PW1 to wash, the reading can be effectively reduced, which is equivalent to the yield of P1001, indicating that PW1 cleaning can wash away some RNA contamination and make plasmid yield more realistic.

4. When extract from high copy vector culture medium, the yield from 50ml bacterial solution with P1 156 is ~800µg, which is consistent with the efficiency of conventional plasmid extraction kits. When extract from 100ml bacterial solution, the plasmid extraction efficiency decreased due to exceeding the maximum binding capacity of the column (1 mg), but the total amount can reach 1.1-1.4mg.