Klentaq1  Cat #: 100

**Amount:** 100 ul (sufficient for 2000 25 ul reactions up to 1 kb)

**Shipping conditions:** Ambient temperature

**Storage conditions:** -20°C for enzyme, 4°C for 10x Klentaq reaction buffer

**Thermo stability:** Retains at least 85% activity after 1 hour at 95°C

**Shelf life:** At least 1 year from date of receipt under proper storage conditions.

**PRODUCT DESCRIPTION:**
Klentaq1 is a 5′-exonuclease deficient Taq polymerase (an N-terminal deletion of Taq) with improved fidelity and thermostability. 10x buffer composition is: 500 mM Tris-Cl pH 9.2, 160 mM ammonium sulfate, 0.25% Brij 58, and 35 mM magnesium chloride. We also offer (upon request) 10x buffer at pH 7.9 for better fidelity.

**TYPICAL PCR PROTOCOL for a 25 μl reaction:**

<table>
<thead>
<tr>
<th>Reagent</th>
<th>Volume</th>
<th>Final Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>10x Klentaq1 PCR buffer</td>
<td>2.5 μl</td>
<td>1x</td>
</tr>
<tr>
<td>dNTP mix (10 mM)</td>
<td>0.5 μl</td>
<td>200 μM each</td>
</tr>
<tr>
<td>Left Primer</td>
<td>variable</td>
<td>0.2 μM</td>
</tr>
<tr>
<td>Right Primer</td>
<td>variable</td>
<td>0.2 μM</td>
</tr>
<tr>
<td>DNA template†</td>
<td>variable</td>
<td>0.1-100 ng</td>
</tr>
<tr>
<td>Betaine 5M*</td>
<td>6.5 μl (optional)</td>
<td>1.3 M</td>
</tr>
<tr>
<td>Klentaq1 Polymerase**</td>
<td>0.05 μl</td>
<td>2.5 units</td>
</tr>
<tr>
<td>de-ionized distilled H₂O</td>
<td>Adjust final volume to 25 μl</td>
<td>-</td>
</tr>
</tbody>
</table>

†DNA amount depends mostly on genome size and target gene copy number.

*Betaine is a general PCR enhancer. It usually improves the yield and specificity of amplification especially for longer targets.

**To determine specific optimal enzyme concentration, we strongly recommend an enzyme titration test for each target. Targets larger than 1 kb may require more enzyme or may benefit from the use of an LA (Long Accurate) version of the polymerase.

**CYCLING CONDITIONS**
1. Denaturing: 94°C for 2 minutes for 1 cycle
2. Denaturing: 94°C for 40-60 seconds
3. Annealing: 50°-68° depending on the specific Tm primers for 40-60 seconds
4. Extension: 68°C for 2 min / 1kb target
5. Repeat steps 2-4 for 25-40 cycles

**REFERENCES:**
Barnes, W.M. (1994) PCR amplification of up to 35 kb DNA with high fidelity and high yield from bacteriophage templates, PNAS 91, 2216-2220.

U.S. Patent No. 5,436,149

Please visit us on the web at www.klentaq.com for troubleshooting and detailed protocols.

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