PCR REAGENTS

High performance, reliable polymerase • Complete range to meet various applications
Advanced buffer chemistry, for enhanced results

- Taq DNA Polymerase
- Hot Start Taq DNA Polymerase
- Taq Plus DNA Polymerase
- High Fidelity DNA Polymerase
- Mammalian Genotyping Kit
BioDot Taq DNA Polymerase provides superior results for routine applications. Modified to improve DNA-binding, this polymerase offers higher processivity and greater template affinity, resulting in consistently superior performance. BioDot Taq Polymerase exhibits a 5’ to 3’ nuclease activity, but no 3’ to 5’ (proofreading) activity and works well with a wide range of DNA templates including GC-rich sequences.

The polymerase is supplied with a 5X buffer containing MgCl₂ and a proprietary mix of enhancers (dNTP’s not included). For convenience, BioDot Taq is also available in a ready to use 2X Master Mix - just add primers and template DNA. The Master Mix can be ordered with a red loading dye that allows samples to be loaded directly on an agarose gel.

BioDot Taq Polymerase clearly amplifies complex mammalian genomic DNA. Replicate PCR amplification of 815bp genomic DNA with moderate GC-rich content (55% GC) using 0.5u BioDot Taq Polymerase. The consistent amplification (DNA yield) and clean background are hallmarks of BioDot Taq Polymerase and Master Mix.

BioDot Hot Start Taq DNA Polymerase and Master Mix

Engineered for controlled polymerase activity, BioDot Hot Start Taq DNA Polymerase is bound with a monoclonal antibody that blocks enzyme activity. This allows reactions to be set up at room temperature without the risk of non-specific amplification. When samples are ready, the reaction mixture is heated to 95°C to denature the antibody and initiate the reaction. Similar to the standard BioDot Taq, Hot Start Taq is provided with a 5X buffer with dNTPs included, or in a ready to use 2X Master Mix. The Master Mix can be ordered with or without a red gel loading dye.

BioDot Hot Start Taq Polymerase clearly amplifies complex mammalian genomic DNA. Amplification was performed with decreasing amounts of starting material, from 500ng to 31.25ng.
BioDot Taq Plus DNA Polymerase, an optimized blend of our Hot Start Taq and a proofreading polymerase, provides up to 5x better fidelity than standard Taq and increased enzyme activity. It is the perfect choice for GC and AT rich templates, low copy number and long PCR. The mixture of 5’-3’ polymerase activity and 3’-5’ exonuclease activity produces fragments suitable for TA cloning. BioDot Taq Plus is provided with a 5X buffer (dNTPs included) or in a convenient one tube 2X Master Mix.

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<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Volume</th>
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<tbody>
<tr>
<td>BD1000-TP-250</td>
<td>BioDot Taq Plus DNA Polymerase</td>
<td>250u (5u/µl)</td>
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<tr>
<td>BD1000-TP-500</td>
<td>BioDot Taq Plus DNA Polymerase</td>
<td>1000u (5u/µl)</td>
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<tr>
<td>BD1001-TP-200</td>
<td>BioDot 2x Taq Plus Master Mix</td>
<td>200 x 50µl Reactions</td>
</tr>
<tr>
<td>BD1001-TP-1000</td>
<td>BioDot 2x Taq Plus Master Mix</td>
<td>1000 x 50µl Reactions</td>
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BioDot Taq Plus demonstrates high processivity even in the presence of crude lysates. The gel image shows amplification of an 850bp fragment of human chromosome with stretches of problematic AT and GC rich content. The first three lanes show the PCR product of amplification of 50ng, 5ng and 2.5ng amplified in the presence of crude lysate. The three right most lanes show the same amplification without the crude lysate.

BioDot High Fidelity DNA Polymerase is ideally suited to amplification of crude samples with a high level of accuracy. In Lanes 1 through 8, decreasing amounts of polymerase (starting with 0.5 unit) are used in a colony PCR application in which bacterial DNA is amplified successfully, without any purification or removal of cell debris.

For applications requiring highly accurate amplification, choose BioDot High Fidelity DNA Polymerase. Modified for better sensitivity and higher activity for more reproducible performance, this polymerase will amplify a wide range of targets, including those that are GC or AT rich as well as crude samples. A 3’-5’ proofreading exonuclease activity and an error rate of $4.55 \times 10^{-7}$ makes BioDot High Fidelity DNA Polymerase the perfect partner for cloning applications. The supplied 5X buffer with dNTPs is optimized for compatibility with a variety of targets.

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<tr>
<td>BD1000-HF-200</td>
<td>BioDot High Fidelity DNA Polymerase</td>
<td>200u (2u/µl)</td>
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<tr>
<td>BD1000-HF-1000</td>
<td>BioDot High Fidelity DNA Polymerase</td>
<td>1000u (2u/µl)</td>
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Traditionally, mouse genotyping protocols have involved Proteinase K digestion, neutralization, organic extraction and lots of hands on time to get PCR-ready DNA. The BioDot 1 Hour Mammalian Genotyping Kit is quick and easy - add sample to the proprietary buffer and incubate for 5-10 minutes, then add the deactivation buffer and incubate for 10 minutes. The crude lysate can be amplified using fast PCR and BioDot Hot Start Taq Master Mix with red loading dye (included). The kit contains everything needed - just add sample and primers.

### Item No.  Description  Reactions
BD1300-MG-80  BioDot 1 Hour Mammalian Genotyping Kit  80
BD1300-MG-400  BioDot 1 Hour Mammalian Genotyping Kit  400

Lanes 1, 2 and 3 compare the BioDot 1 Hour Mammalian Genotyping Kit with traditional methods for 3mm mouse tail snips. Lane 1 - BioDot Kit, 1 hour workflow. Lanes 2 and 3 - traditional Proteinase K digestion and PCR with Taq polymerase mix, overnight incubation. Lanes 4-7 - Replicate PCR amplification from mouse ear tissue (2.5mg) using the BioDot kit showing reproducibility.

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**Also from Dot Scientific**

### Benchmark Thermal Cylcers

**TC 9639**
- Intuitive touch screen control
- Program wizard for quick set up of protocols
- Unique multiformat block accepts:
  - 0.2ml tubes/stripes
  - 0.2ml PCR plate
  - 0.5ml tubes
  - Optional adapter for slides

**TC 32**
- Intuitive touch screen control
- Personal sized - 32x0.2ml tubes
- Small but powerful