

PCR REAGENTS

High performance, reliable polymerase • Complete range to meet various applications

Advanced buffer chemistry, for enhanced results

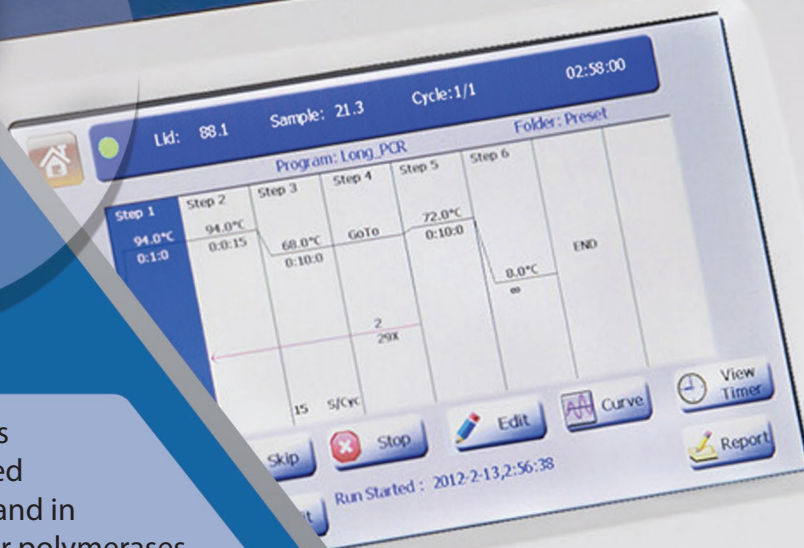
BioDot Taq DNA Polymerase

BioDot Hot Start Taq Polymerase

BioDot Taq Plus DNA Polymerase

BioDot High Fidelity DNA Polymerase

BioDot Mammalian Genotyping Kit



The new PCR reagent line from Dot Scientific takes polymerase performance to a new level. Developed by a team of scientists with extensive experience and in depth knowledge of PCR enzyme biochemistry, our polymerases incorporate specific protein modifications to improve results. In addition, our unique buffer solutions are formulated with proprietary enhancers to bolster the productivity of our active enzymes.

BioDot Taq DNA Polymerase and Master Mix

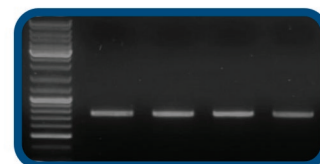


- **Ideal for routine PCR applications as well as genotyping, colony PCR and fast PCR**
- **Improved template affinity and increased processivity for higher enzymatic activity and greater yields**
- **Proprietary buffer optimized for a variety of assay conditions**
- **Supplied with 5X buffer or as a convenient 2X Master Mix**

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 $MgCl_2$ and a proprietary mix of enhancers (dNTPs 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.



Item No.	Description	Size
BD1000-500	BioDot Taq DNA Polymerase	500u (5u/μl)
BD1000-1000	BioDot Taq DNA Polymerase	1000u (5u/μl)
BD1000-6000	BioDot Taq DNA Polymerase	6000u (5u/μl)
BD1001-200	BioDot 2x Taq Master Mix	200 x 50μl Reactions
BD1001-1000	BioDot 2x Taq Master Mix	1000 x 50μl Reactions
BD1001-R-200	BioDot 2x Taq Red Master Mix	200 x 50μl Reactions
BD1001-R-1000	BioDot 2x Taq Red Master Mix	1000 x 50μl Reactions

BioDot Hot Start Taq DNA Polymerase and Master Mix



- **Exceptional sensitivity for low copy PCR**
- **Ideal for multiplex PCR and amplification of GC-rich DNA**
- **Same enhanced features as BioDot Taq Polymerase**
- **Buffer optimized for fast cycling and reproducibility**

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 (dNTPs not included), or in a ready to use 2X Master Mix. The Master Mix can be ordered with or without a red gel loading dye.

Gel image shows exceptional sensitivity of BioDot Hot Start Taq Polymerase with 405bp plant mitochondrial DNA. Amplification was performed with decreasing amounts of starting material, from 500ng to 31.25ng.



Item No.	Description	Size
BD1000-HS-500	BioDot Hot Start Taq DNA Polymerase	500u (5u/μl)
BD1000-HS-1000	BioDot Hot Start Taq DNA Polymerase	1000u (5u/μl)
BD1000-HS-6000	BioDot Hot Start Taq DNA Polymerase	6000u (5u/μl)
BD1001-HS-200	BioDot Hot Start 2x Taq Master Mix	200 x 50μl Reactions
BD1001-HS-1000	BioDot Hot Start 2x Taq Master Mix	1000 x 50μl Reactions
BD1001-HSR-200	BioDot Hot Start 2x Taq Red Master Mix	200 x 50μl Reactions
BD1001-HSR-1000	BioDot Hot Start 2x Taq Red Master Mix	1000 x 50μl Reactions

BioDot DNA Polymerase and Master Mix



- **Higher fidelity for long PCR amplicons, up to 35kb**
- **Ideal for problematic templates**
- **Better sensitivity and higher activity for low copy and long PCR**
- **Enzyme of choice for TA cloning**

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 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 not included) or in a convenient one tube 2X Master Mix.

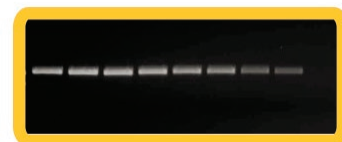
Item No.	Description	Volume
BD1000-TP-250	BioDot Taq Plus DNA Polymerase	250u (5u/μl)
BD1000-TP-500	BioDot Taq Plus DNA Polymerase	1000u (5u/μl)
BD1001-TP-200	BioDot 2x Taq Plus Master Mix	200 x 50μl Reactions
BD1001-TP-1000	BioDot 2x Taq Plus Master Mix	1000 x 50μl Reactions

BioDot High Fidelity DNA Polymerase



- **50X higher fidelity than Taq DNA polymerase**
- **Works with crude DNA samples**
- **Ideal for blunt end cloning, mutagenesis and microarrays**
- **Optimized buffer system with unique PCR enhancers**

BioDot High Fidelity 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 4.55×10^{-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.

Item No.	Description	Size
BD1000-HF-200	BioDot High Fidelity DNA Polymerase	200u (2u/μl)
BD1000-HF-1000	BioDot High Fidelity DNA Polymerase	1000u (2u/μl)



BioDot dNTP Mix

BioDot dNTP Set

The 40mM dNTP Mix is a single tube that contains premixed dNTPs at a concentration of 10mM each. The 100mM dNTP Set contains four individual tubes, one each of dATP, dCTP, dGTP and dTTP. The nucleotides are supplied in ultra-pure water as an ammonium salt.

- Ready to use 40mM mix or set of 4 separate 100mM solutions
- Free of impurities and inhibitors that reduce sensitivity and yield
- No nuclease, protease or nickase activity
- Greater than 99% pure, purified by HPLC
- Stable for 24 months at -20°C

The success of your PCR reaction depends on the quality of the starting materials. BioDot dNTP's are purified by HPLC in a strict process that results in greater than 99% purity. The stringent purification process eliminates PCR inhibitors such as tetraphosphates and pyrophosphates that can interfere with the sensitivity of your PCR and reduce yields. Extensive quality control testing is performed to ensure the dNTPs are free of nuclease, protease and nickase activity. Each lot is performance tested in standard PCR, long PCR and qPCR reactions to assess reproducibility and sensitivity.

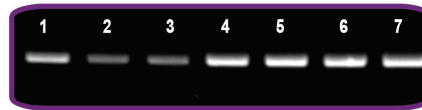
Item No.	Description	Size
BD3040-M-1	BioDot 40mM dNTP Mix, ready-to-use, 10mM/5µmol each	0.5ml
BD3040-M-4	BioDot 40mM dNTP Mix, ready-to-use, 10mM/20µmol each	2ml
BD3101-S-1	BioDot 100mM dNTP Set, dATP, dCTP, dGTP, dTTP	250µl/25µmol each
BD3101-S-4	BioDot 100mM dNTP Set, dATP, dCTP, dGTP, dTTP	1ml/100µmol each

BioDot 1 Hour Mammalian Genotyping Kit



- DNA extraction and amplification in an hour
- Proprietary lysis buffer optimized for ear punches, tail snips and other mammalian tissues
- Single tube - no organic solvents or clean up procedures
- Enhanced BioDot Hot Start Taq Polymerase Master Mix included

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.



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.

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

