

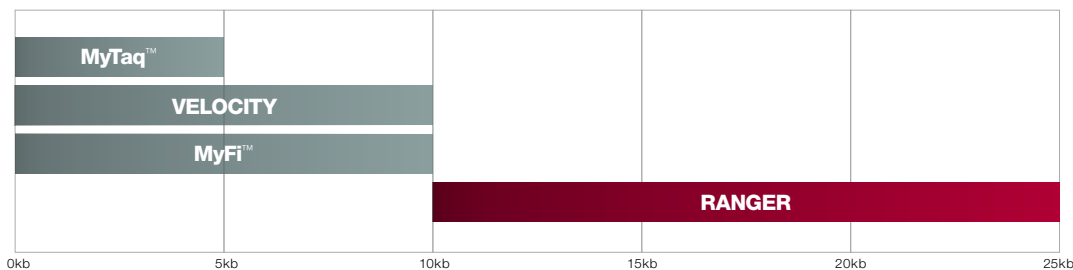
Long Range PCR Delivered

RANGER DNA Polymerase

- Long range, from 10kb-25kb
- Higher fidelity than *Taq*, to ensure low error rates
- Validated for human genomic DNA
- Novel buffer system, including ultra-pure dNTPs and $MgCl_2$
- Available as a convenient all-in-one master mix

RANGER DNA Polymerase is a hot-start enzyme, possessing 5'-3' DNA polymerase and 3'-5' proofreading exonuclease activities, thus offering both high-fidelity and enhanced specificity. The polymerase is supplied with an industry-leading novel buffer system, specifically formulated and validated to the unique properties of RANGER.

RANGER is an easy-to-use high-performance enzyme, specifically designed to amplify templates from 10kb upwards with extreme sensitivity (fig. 1). Due to its antibody-based hot-start property, RANGER has the added convenience of room temperature reaction assembly, reducing unwanted non-specific amplification such as primer-dimer formation. This new hot-start enzyme from Bioline is supplied with 5x RANGER Reaction Buffer, a proprietary formulation containing dNTPs, $MgCl_2$ and enhancers at optimal concentrations, giving superior amplification.



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RANGER DNA Polymerase

RANGER is highly suitable for all PCR applications of long templates, including sequencing, mapping of chromosomal translocation breakpoints and other structural variations, as well as TA cloning.

RANGER is a ready-to-use 2x mix, lacking polymerase activity during the reaction set-up, thus reducing non-specific amplification. The advanced formulation of RANGER Mix enables extreme sensitivity (fig. 2) and increased fidelity. RANGER Mix contains all the reagents necessary for trouble-free PCR reaction set-up. For your convenience all of the components are supplied in one tube, to reduce the number of pipetting steps and to improve efficiency and reproducibility.

RANGER is perfect for ultra-sensitive amplification of long PCR product

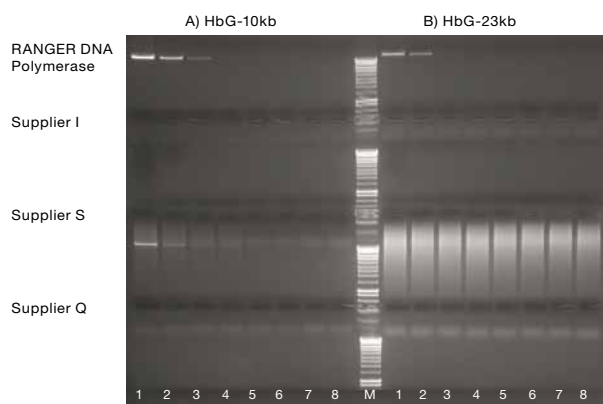


Fig. 1 Amplification of complex DNA greater than 10kb
A) A 10kb fragment and B) a 23kb fragment of human β -globin (*HbG*) gene, were amplified using RANGER Polymerase and the results were compared with amplifications using high-fidelity hot-start DNA polymerases from other suppliers. The process used a serial dilution of human genomic DNA (5ng, 1.6ng, 550pg, 180pg, 60pg, 20pg, 6pg and 0pg human genomic DNA, lanes 1-8 respectively), incubated for 1 min at 95°C (or according to the manufacturer's protocol) followed by either 30 cycles of [10s at 98°C, 8min at 66°C] for the 10kb fragment, or [1min at 95°C, 18min at 66°C] for the 23kb fragment and a final extension for 10min at 72°C. Marker is HyperLadder I (M). The results illustrate that RANGER DNA Polymerase can be used to amplify products up to 23kb from human genomic DNA, unlike many other competing long-fragment DNA polymerases tested.

RANGER Mix delivers extreme efficiency and sensitivity with larger fragments

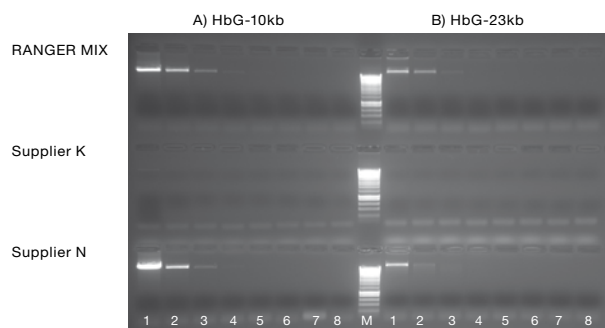


Fig. 2 Efficiency and sensitivity of high-fidelity polymerase mixes
A) A 10kb fragment and B) a 23kb fragment of human β -globin (*HbG*) gene, were amplified using RANGER Mix and the results were compared with amplifications using high fidelity hot-start DNA mixes from supplier K and supplier N. The process used a serial dilution of human genomic DNA (5ng, 1.6ng, 550pg, 180pg, 60pg, 20pg, 6pg and 0pg human genomic DNA, lanes 1-8 respectively), incubated for 1 min at 95°C (or according to the manufacturer's protocol) followed by either 30 cycles of [10s at 98°C, 8min at 66°C] for the 10kb fragment, or [1min at 95°C, 18min at 66°C] for the 23kb fragment and a final extension for 10min at 72°C. Marker is HyperLadder I (M). The results illustrate that RANGER Mix is more sensitive than other suppliers mixes, particularly with larger fragments.

Ordering Information

PRODUCT	PACK SIZE	CAT NO.
RANGER DNA Polymerase	250 Units	BIO-21121
RANGER DNA Polymerase	500 Units	BIO-21122
RANGER DNA Polymerase	2500 Units	BIO-21123
RANGER Mix	100 Reactions	BIO-25051
RANGER Mix	500 Reactions	BIO-25052

PSGBL0911V1.0



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