

Breast Cancer **Tissue Bank**

Evaluation of DNA extraction kits using the epMotion 5075 Vac Workstation

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- Establish an automated methodology for DNA extraction using tissue bank samples (EDTA blood).
- High yield.
- High quality DNA.





Eppendorf *epMotion*[®] 5075 VAC liquid handling workstation

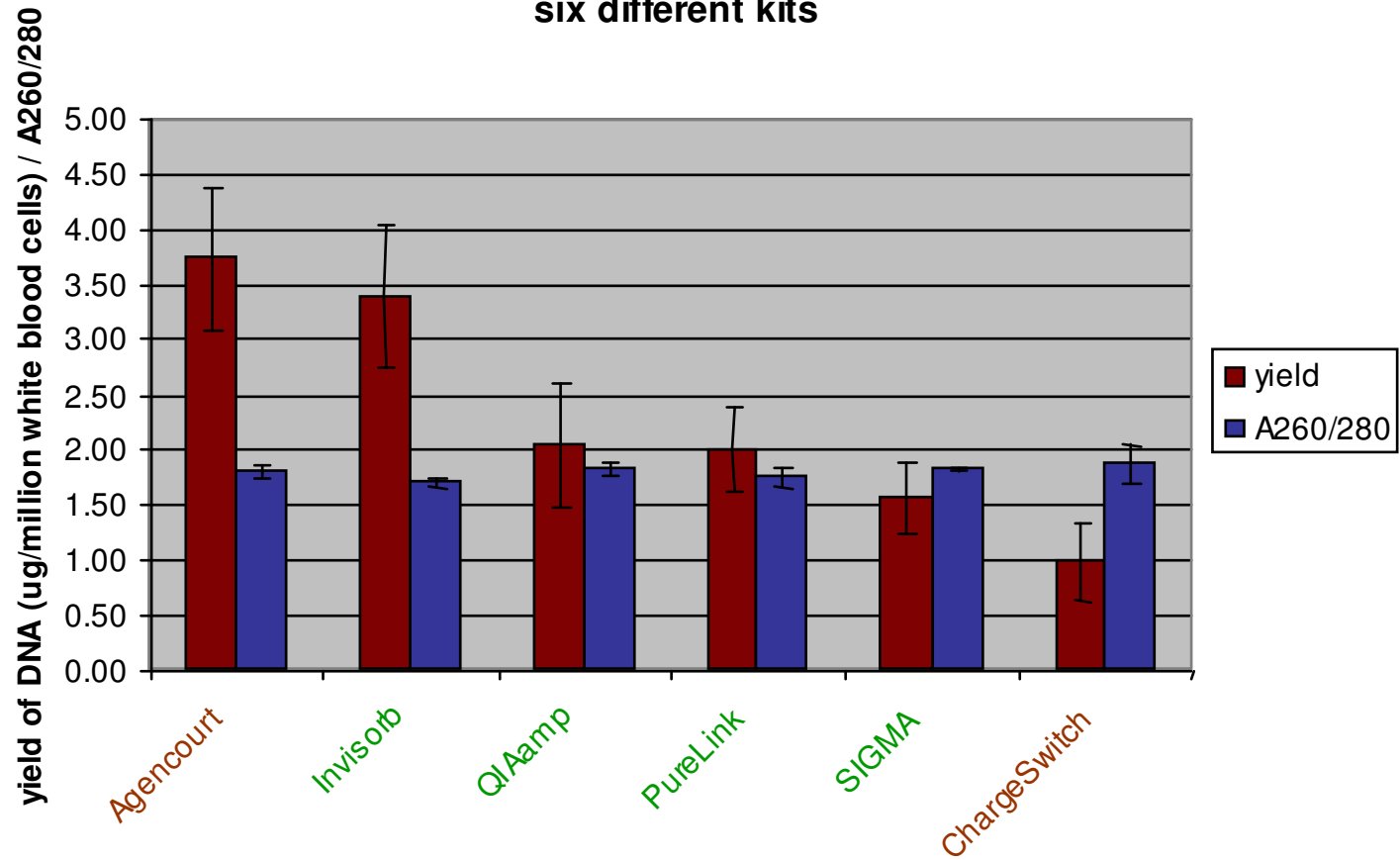
- Easy-to-use
- A mid-throughput system
- Multi-functional

Six genomic DNA extraction kits were tested

- magnetic beads
 - AGENCOURT[®] GENFIND[™]V2 blood & serum genomic DNA isolation kit
 - ChargeSwitch[®] gDNA 100 µl blood kit
- silica membrane filter plate
 - Invisorb[®] Blood mini HTS 96 kit/ep
 - QIAamp 96 DNA blood kit
 - PureLink[™] genomic DNA kit
 - Liquid Sample Reagent Pack (SIGMA) / Unifilter plate (Whatman)

Yield and purity

Fig. 1B Comparison of the average yield and purity of DNA between six different kits



High MW genomic DNA suitable for direct use in downstream applications

Fig. 2 Genomic DNA analyzed on gel electrophoresis.

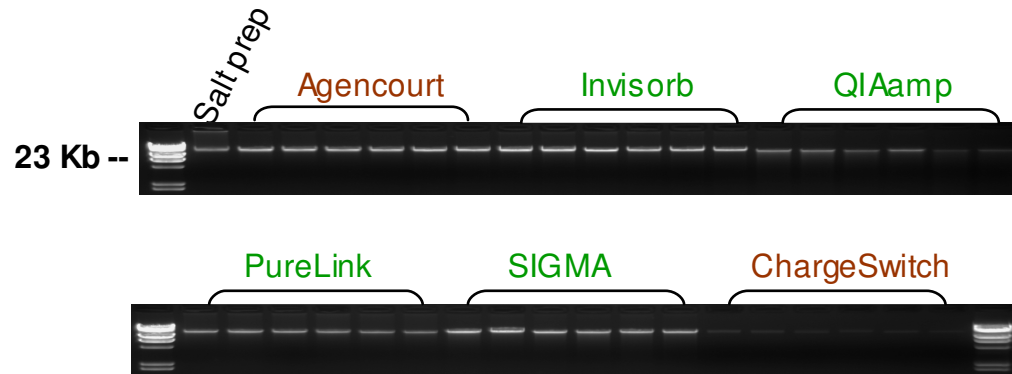


Fig. 4 Long-range PCR

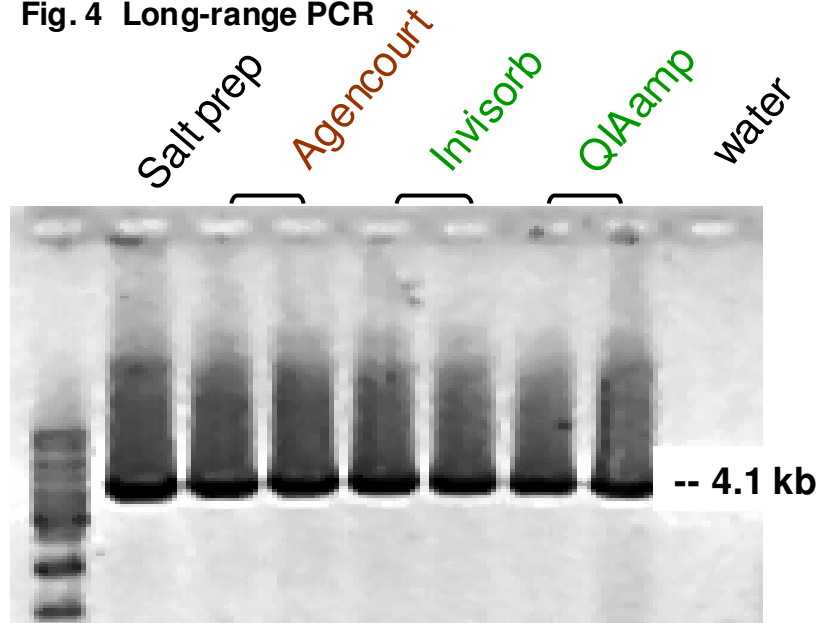
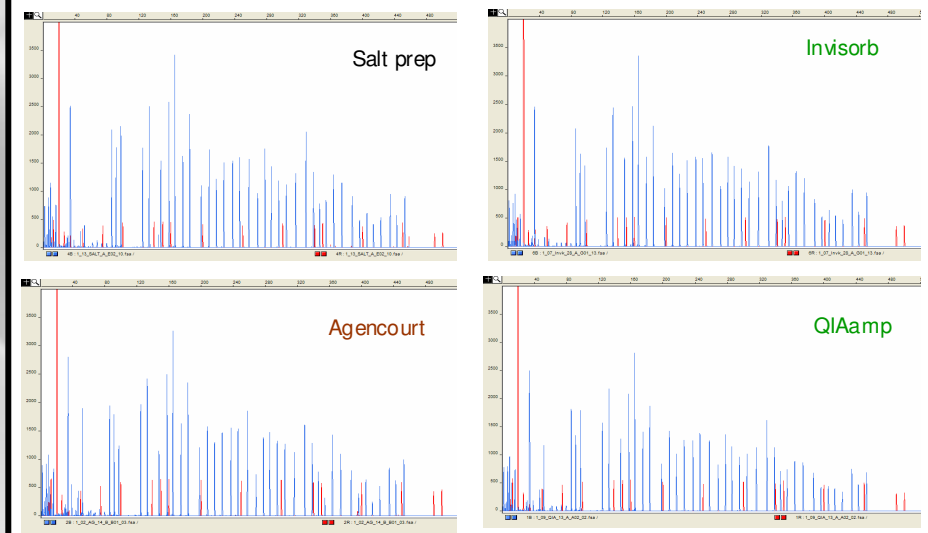


Fig. 5 MLPA



Comparison of processing time and cost

KIT	Method	Max volume of blood	Run time - for 96 samples	Requires vac lid &/or vacuum	Cost per 4 plate kit including freight (RRP \$AU)	Cost per reaction	Tips required for 96 well plate	Actual cost per sample
Agencourt Genfind	Mag beads	200 µl	5hr 13min	No	\$1,563.00	\$4.07	768 Plain 576 Filter	\$6.86
✓ Invisorb	Silica memb	200 µl	2hr 13min	Vacuum	\$1,138.00	\$2.96	24 Plain 296 filter	\$3.73
✓ QIAamp	Silica memb	200 µl	1hr 50min	Vac lid and Vacuum	\$1,668.00	\$4.34	40 Plain 200 Filter	\$4.90
Purelink	Silica memb	200 µl	2hr 2min	Vac lid and Vacuum	\$1,437.00	\$3.74	40 Plain 208 Filter	\$4.32
Whatman/ Sigma	Silica memb	180 µl	2hr 13 min	Vacuum	\$888.00	\$2.31	24 Plain 296 Filter	\$3.30
ChargeSwitch	Mag beads	100 µl	5hr 23min	No	\$2,004.48	\$5.22	672 Plain 576 Filter	\$7.86