Introducing Nucleon DNA extraction kit : for faster and safer extraction of DNA / from Scotlab.

Contributors

Scotlab (Firm)

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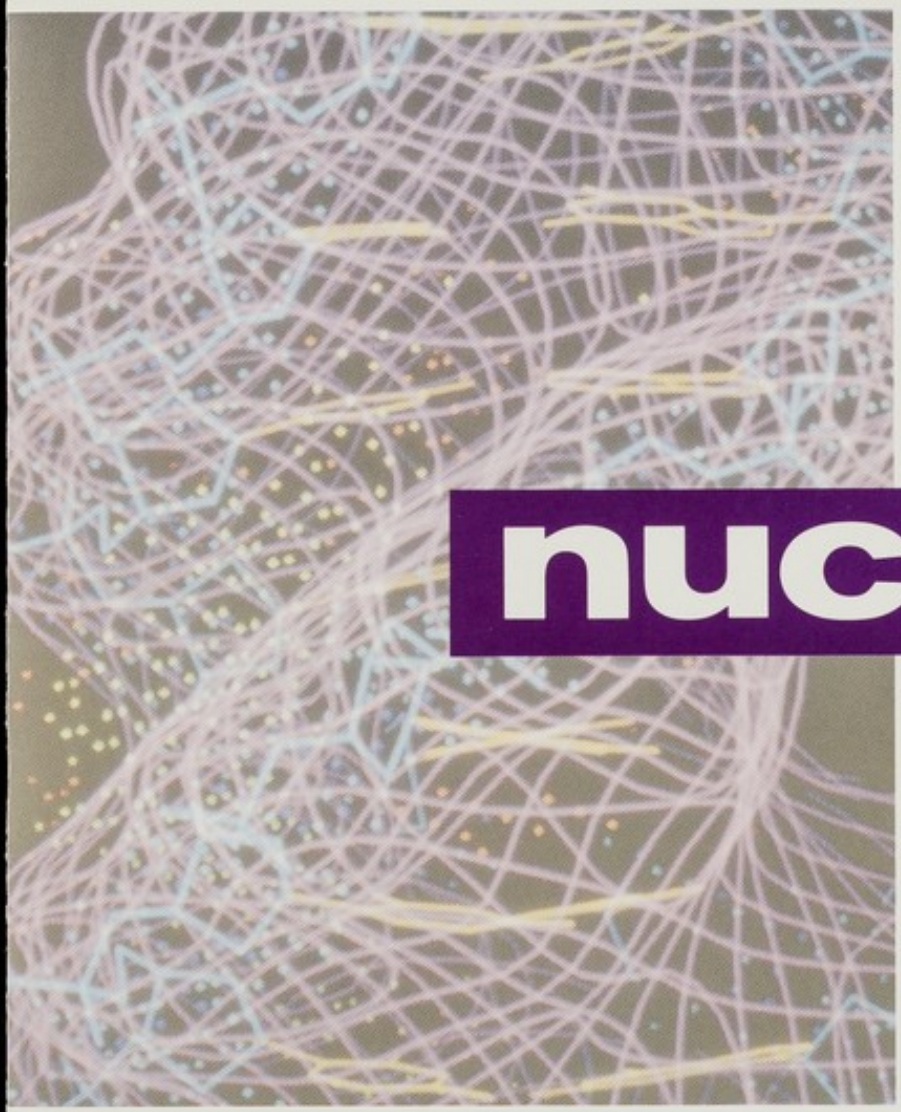
introducing



for **FASTER**
and **SAFER**
extraction
of **DNA**

nucleon™

DNA
extraction
KIT

PATENT APPLIED FOR

from scotlab

first FOR MOLECULAR BIOLOGY

- *Rapid DNA isolation (less than 2 hours)*
- *Eliminate phenol extractions*
- *Exceptional yields of DNA*
- *No Proteinase K digestions*
- *Extracted DNA is suitable for PCR or RFLP applications with Molecular Weight in excess of 20kb*
- *Highest purity : UV 260/280 nm ratios greater than 1.8*
- *Specially designed microtube insert optimises system for maximum DNA recovery from small volume samples (<1.5ml)*
- *Suitable for both small and large sample volumes (0.05ml - 30ml)*

nucleon I

DNA *extraction* **KIT**
FOR SMALL SAMPLES
(0.05-1.50 ml WHOLE BLOOD; $1x10^6$ to $3x10^6$ CULTURED CELLS).

The small volume **Nucleon™** *I DNA extraction kit is designed to optimise the isolation of DNA where maximum recovery of pure DNA is required from minimal sample volumes such as in screening studies or in the clinical environment. All the stages in the protocol from cell lysis to DNA washing are conducted in a microtube format ensuring compatibility with standard equipment in the molecular biology laboratory. A specially designed microtube insert (see fig.3) minimises the interface at the* **Nucleon™** *Silica Suspension addition stage and maximises DNA recovery by eliminating repeated partitions. The upper DNA containing phase is simply poured off, eliminating shear damage during pipetting procedures.*

nucleon II

DNA *extraction* **KIT**
FOR LARGER SAMPLES

The **Nucleon™** *II DNA extraction kit has been optimised for the isolation of DNA from either 5-30ml of whole blood or $3x10^6$ to $3x10^7$ cultured cells. Sufficient Nucleon Silica Suspension is provided for up to 50 DNA preparations from individual whole blood volumes of less than 20ml. In order to minimise the cost of shipping the very large volumes of reagents required, full reagent compositions and preparation protocols are provided with each kit. Sufficient reagents are however provided to enable the immediate use of the kit for the first few DNA extractions.*

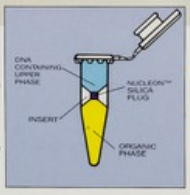


FIGURE 3. *Nucleon™ microtube with insert after the addition Nucleon™ Silica Suspension*

- *Optimised for small samples*
- *Manipulations conducted in standard 1.5ml microtubes*
- *Specially designed insert for maximum DNA recovery*

for **FASTER** *and* **SAFER** *preparation of genomic* **DNA** *from whole blood and animal cell cultures*

THE **NUCLEON™** DNA EXTRACTION SYSTEM HAS BEEN DEVELOPED FOR THE RAPID AND EFFICIENT ISOLATION OF DNA FROM COMPLEX SAMPLES SUCH AS WHOLE BLOOD OR ANIMAL CELL CULTURES. THE DNA IS RECOVERED IN HIGH YIELD (AT LEAST TWICE THAT YIELDED BY CONVENTIONAL PHENOL/CHLOROFORM PROTOCOLS), HAS A MOLECULAR WEIGHT IN EXCESS OF 20 KB. AND IS IN A PURE FORM WITH U.V. 260/280 NM RATIOS IN EXCESS OF 1.8.

THE **NUCLEON™** PROTOCOL ELIMINATES THE REQUIREMENT FOR PROTEINASE DIGESTIONS AND PHENOL EXTRACTIONS, ENSURING RAPID AND SAFE DNA PREPARATION. A TYPICAL **NUCLEON™** DNA EXTRACTION IS ILLUSTRATED IN FIGURE 1 AND TAKES LESS THAN 2 HOURS TO COMPLETE. THE PROCEDURE INVOLVES THE USE OF THE SPECIALLY MODIFIED **NUCLEON™** SILICA SUSPENSION AFTER A SODIUM PERCHLORATE EXTRACTION AND SINGLE PARTITION AGAINST CHLOROFORM.

NUCLEON™ SILICA SUSPENSION PERFORMS TWO FUNCTIONS IN THE DNA EXTRACTION PROCEDURE:

nucleon™

DNA *extraction* KIT

- THE **NUCLEON™** SILICA ACTUALLY BINDS PROTEINS BY THE FORMATION OF AN IMIDE BOND AS SHOWN IN FIGURE 2.
- **NUCLEON™** SILICA FORMS A SOLID "STRATUM" AT THE INTERFACE BETWEEN THE CHLOROFORM AND THE DNA CONTAINING UPPER PHASE (SEE FIGURES 1 AND 3).

THIS SOLID **NUCLEON™** STRATUM TRAPS BOTH BOUND AND UNBOUND PROTEINACEOUS MATERIAL IN THE LOWER ORGANIC PHASE. THIS FACILITATES RECOVERY OF THE DNA WITHOUT REPEATED PARTITIONS, ENSURING HIGH YIELDS OF HIGH MOLECULAR WEIGHT DNA.

THE **NUCLEON™** SILICA DOES NOT INTERACT WITH, OR BIND TO, THE DNA WHICH MINIMISES THE POTENTIAL HAZARD OF SHEARING OR PHYSICAL BREAKING OF THE DNA STRANDS DURING PELLETING PROCEDURES.

FOR RESEARCH USE ONLY

NUCLEON™ I	*for* SMALL VOLUMES	*40 preparations (0.05ml-1.5ml)* CAT.No. SL-8501	**£89.95**
NUCLEON™ II	*for* LARGE VOLUMES	*up to 50 preparations (5.0ml-30ml)* CAT.No. SL-8502	**£79.95**
	accessories:		
TREFF 1.5ml MICROTUBES		*1000, natural* CAT.No. SL-7001	**£17.50**
BIORACK *reversible rack*		*for 0.5 and 1.5ml microtubes* CAT.No. SL-5010	**£12.95**
ECONORACK		*for 52x1.5ml microtubes* CAT.No. SL-4111	**£7.95**
SCOTLAB MICROCENTAUR *centrifuge*		*for 1.5ml microtubes* CAT.No. SL-9020	**£795.00**

FIGURE 1.

Principal steps in a typical ***Nucleon***™ *protocol*

Cell Lysis

↓

RNAase Digestion
(optional)

↓

Sodium Perchlorate

↓

Chloroform treatment

↓

Nucleon™ suspension addition

↓

DNA recovery
(see illustration 1)

↓

DNA washing

FIGURE 2.

Mechanism of ***Nucleon***™ *Silica protein binding*

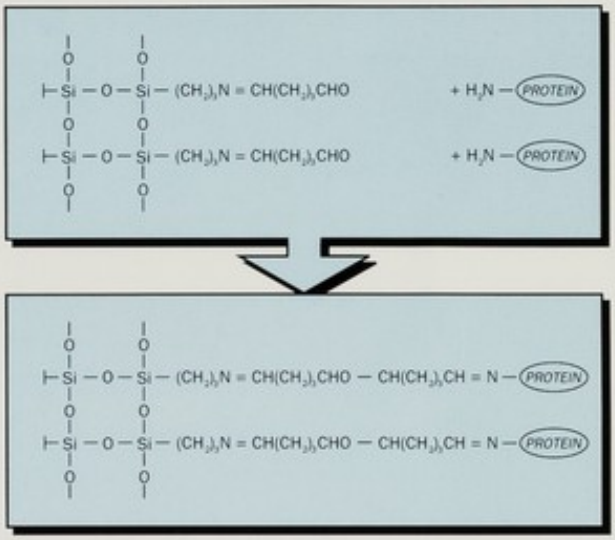
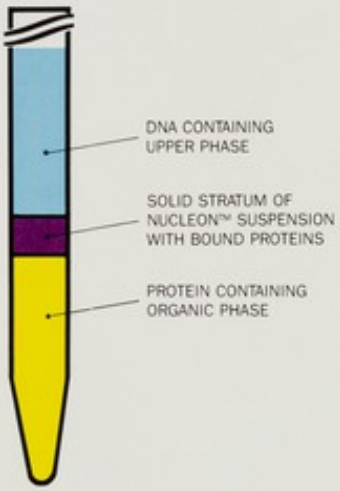


ILLUSTRATION 1.

Tube after the addition of ***Nucleon***™ *Silica suspension prior to DNA recovery*



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