

# SmartExtraction LHS-Kit

All in one pipette tip  
– automatic extraction of HMW DNA

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- + Binding – washing – elution – all in one pipette tip
- + High yield, high purity
- + One kit for various starting materials



# At a glance: The advantages of SmartExtraction LHS-Kits

Quality and quantity are of particular importance when extracting genomic DNA. SmartExtraction technology makes it possible to extract high-molecular DNA in pipette tips automatically. Special particle surfaces facilitate the specific, rapid binding and subsequent elution of DNA. Another special

feature: One kit for various starting samples: bacteria, yeasts, whole blood, eukaryotic cells, tissue samples, rodent tails. The use of chemistry for lysis, HMW DNA binding and extraction is based on the technology of IST Innuscreen GmbH.

- + No phenol/chloroform
- + No ion exchangers
- + No spin filter columns
- + No magnetic beads
- + One kit for various starting materials
- + The result: HMW DNA (200 kb - 500 kb)

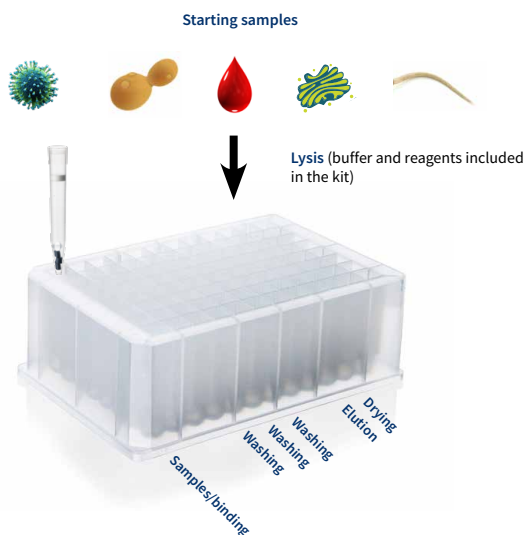


**Binding – washing – eluting**  
All in one pipette tip

## Application in the Liquid Handling Station

After lysis of the initial samples outside the Liquid Handling Station, the DNA can be isolated quickly and easily without centrifugation steps and without shaking (vortex). This is achieved by various automated pipetting steps in the Liquid Handling Station pipetting robot. Binding and washing steps

are performed in the pipette tip, as is the final elution. The required reagents are placed in a deep-well plate. Finally, the eluted, high-purity DNA is then available in the deep-well plate. The pipetting speeds and number of cycles have been selected to ensure high yields and to minimize shear forces.



<b>Technology</b>	SmartExtraction
<b>Process</b>	Automated in BRAND Liquid Handling Station
<b>Material</b>	Bacteria, yeasts, whole blood, Eukaryotic cells, tissue samples, rodent tails
<b>Elution volume</b>	200 µl - 400 µl
<b>Time in LHS</b>	22 min for 8 samples (without lysis)
<b>Binding capacity</b>	Theoretically unlimited

Fig. Smart Extraction process in the LHS

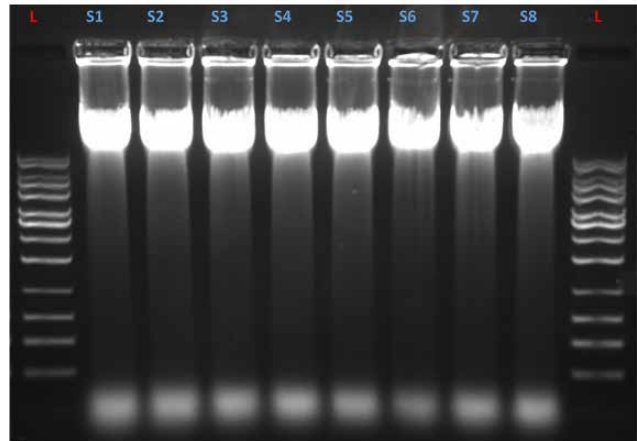
## Results of DNA extraction from 2 ml of whole blood

The high binding capacity of the SmartExtraction surfaces in the pipette tip makes it possible to isolate a larger amount of

Sample	Concentration (ng/μl)	Yield (μg)	A <sub>260/280</sub>	A <sub>260/230</sub>
Sample_1	346,95	69,39	1,833	2,021
Sample_2	315,45	63,09	1,881	2,033
Sample_3	312,35	62,47	1,882	2,021
Sample_4	346,55	69,31	1,878	2,039
Sample_5	350,05	70,01	1,875	2,043
Sample_6	347,95	69,59	1,883	2,050
Sample_7	352,20	70,44	1,884	2,039
Sample_8	361,30	72,26	1,879	2,027

Spectrophotometric measurements of mouse tail DNA. Data showed all eight cell DNA samples have a high concentration and yield along with good absorbance ratios. No contaminants were detected in the measurements.

DNA in many cases compared to magnetic bead applications. Clumping of DNA is also avoided.



Gel electrophoresis photo of the eight mouse tail samples. Bright bands of high molecular weight indicated a successful DNA extraction from the eight mouse tails while fuzzy bands of low molecular weight indicate the presence of mRNA in the samples. L, Ladder; S1 to S8, mouse tail samples one to eight.

## Ordering Information

### SmartExtraction LHS-Kit

For the automated isolation of high molecular weight DNA (HMW)

Description	for 8 samples	for 16 samples	for 32 samples
Ery Lysis Solution A (conc.)	11 ml	2 x 11 ml	2 x 25 ml
Ery Lysis Solution B (conc.)	6 ml	10 ml	25 ml
Lysis Solution CBV	5 ml	10 ml	15 ml
Proteinase K	for 1 x 1,5 ml working solution	for 1 x 1,5 ml working solution	for 2 x 1,5 ml working solution
RNase A	60 μl	2 x 60 μl	300 μl
Binding Optimizer	1 ml	1 ml	2 x 1 ml
Washing Solution LS (conc.)	4 ml	6 ml	12 ml
Elution Buffer	2 ml	10 ml	15 ml
Deep Well Plate (2.0 ml)	1	2	4
SmartExtraction Tips	8	2 x 8	4 x 8
Manual	1	1	1
Cat. No.	709427	709428	709429



Fig. Smart Extraction Kit for 16 samples (709428)

#### Not included:

- + PBS, 1x
- + 96%–99.8% ethanol (molecular biology grade, undenaturated)B
- + 80% ethanol
- + Isopropanol
- + ddH<sub>2</sub>O; ultrapure for dissolving Proteinase K, Ery A and B

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