

HIGH MW DNA EXTRACTION FROM DIVERSE ANIMAL AND PLANT SPECIES

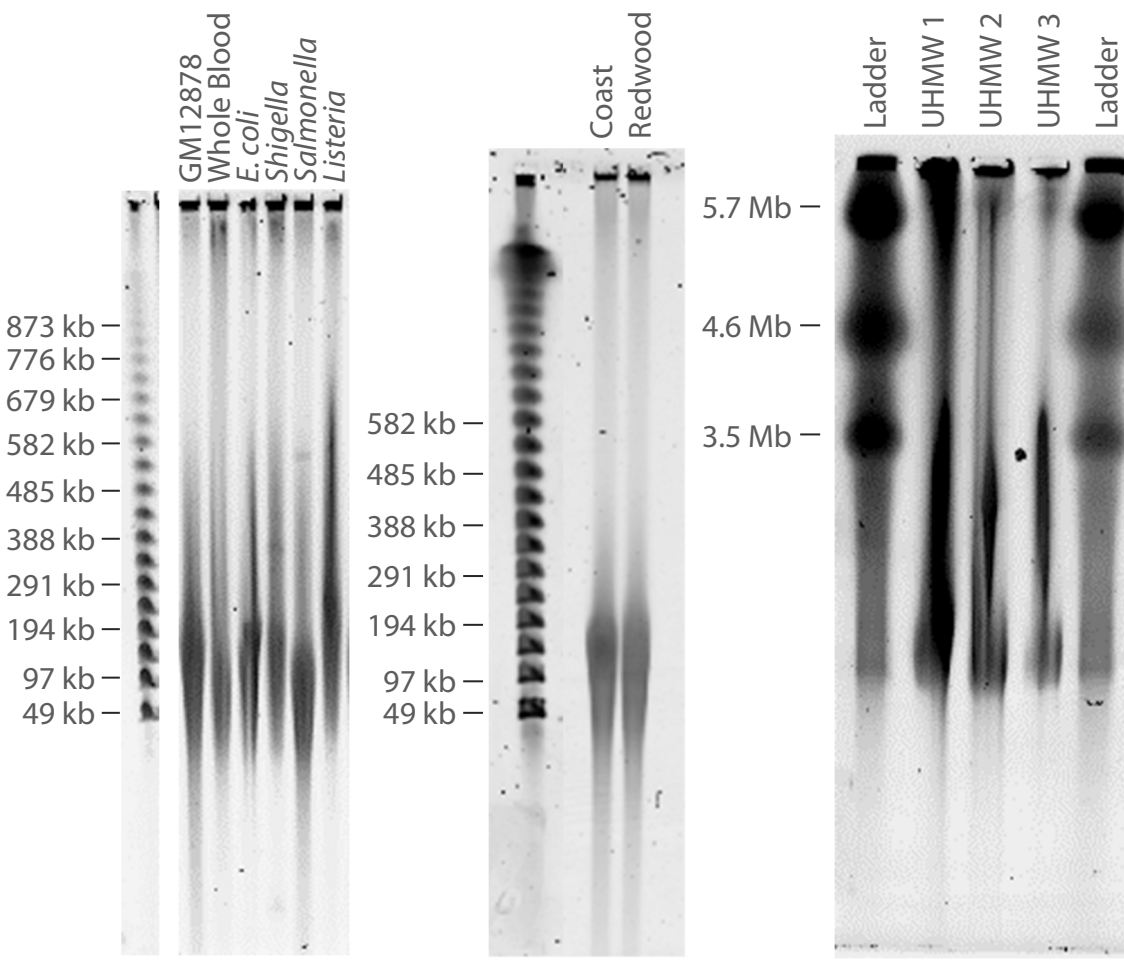
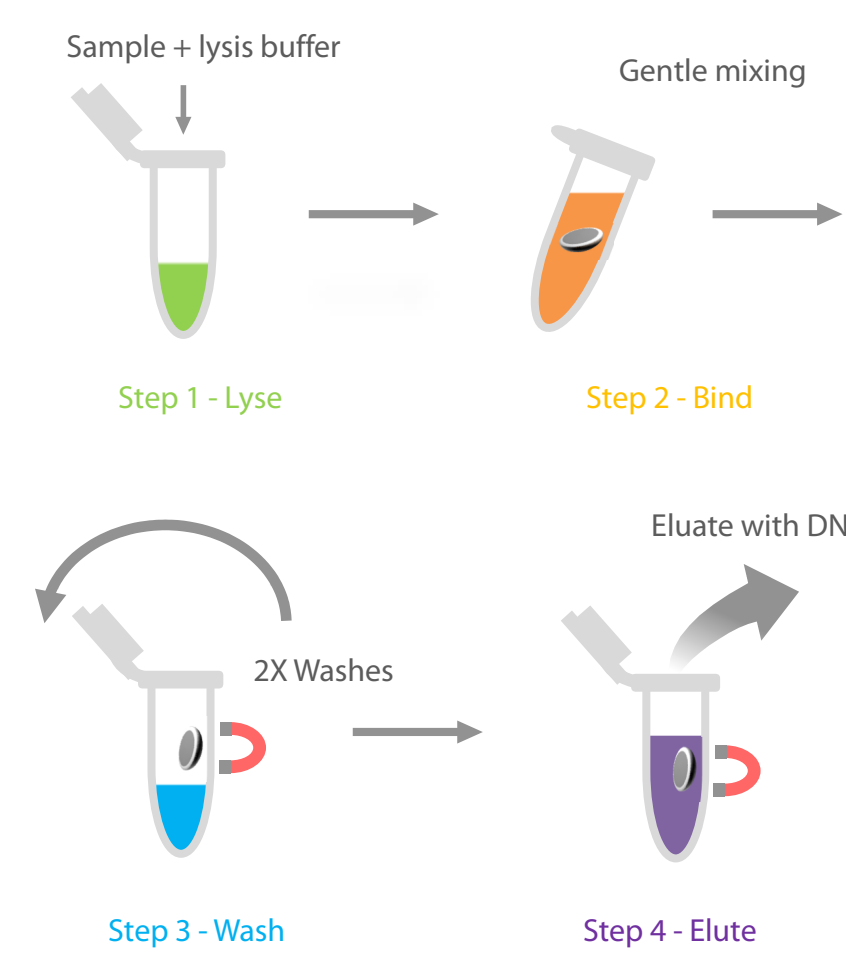
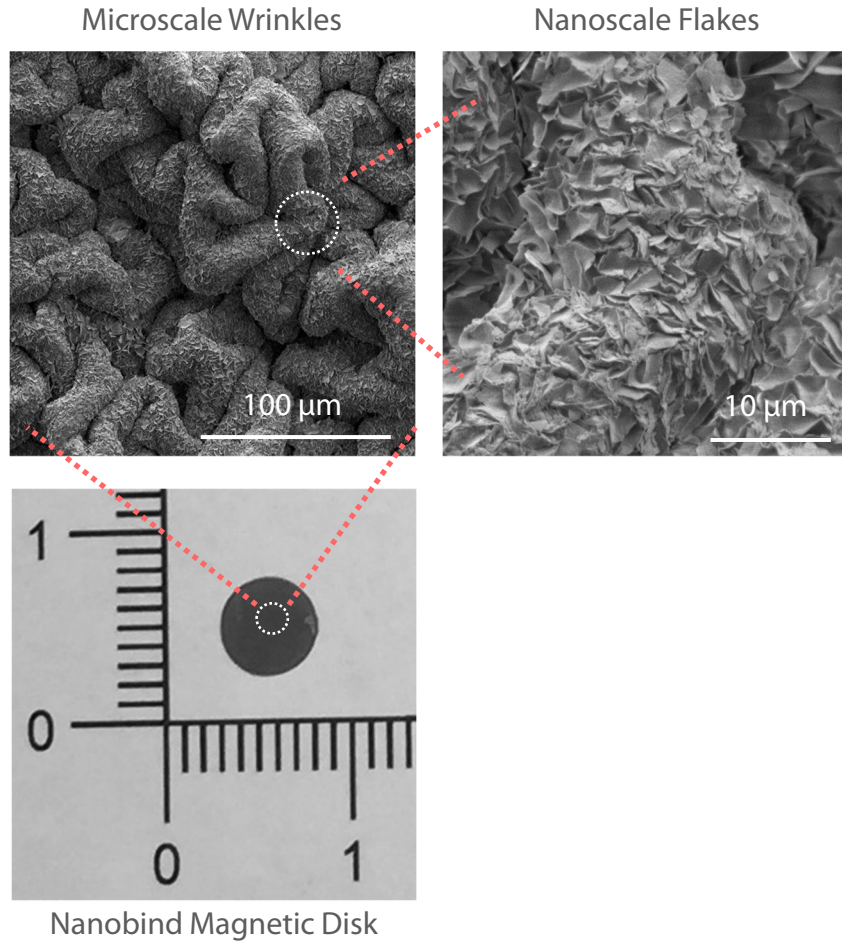


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Nanobind Magnetic Disks



Nanobind Magnetic Disks

- Micro- and nanowrinkles protect HMW DNA from shearing
- High binding capacity
- High purity for single molecule sequencing

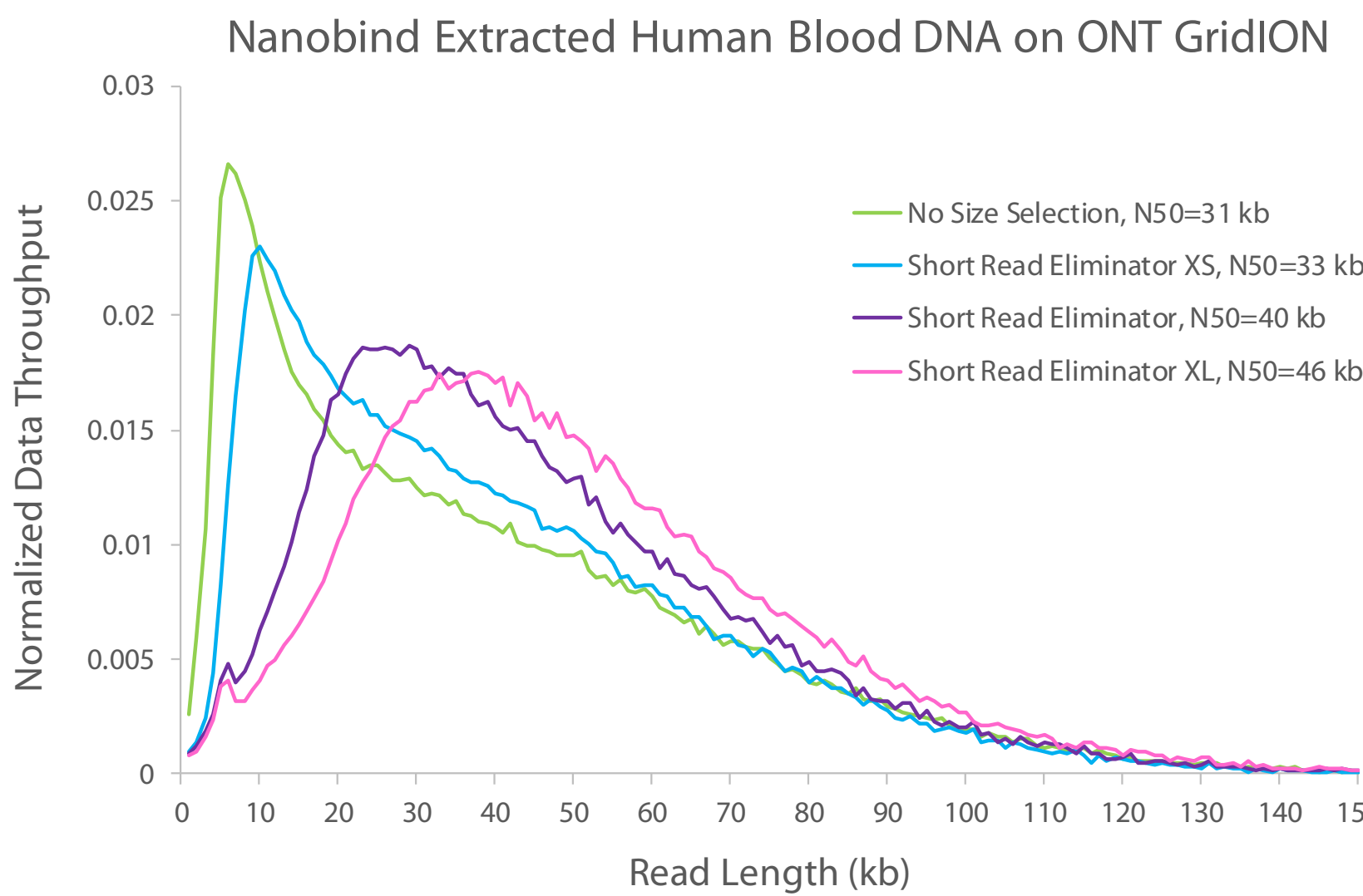
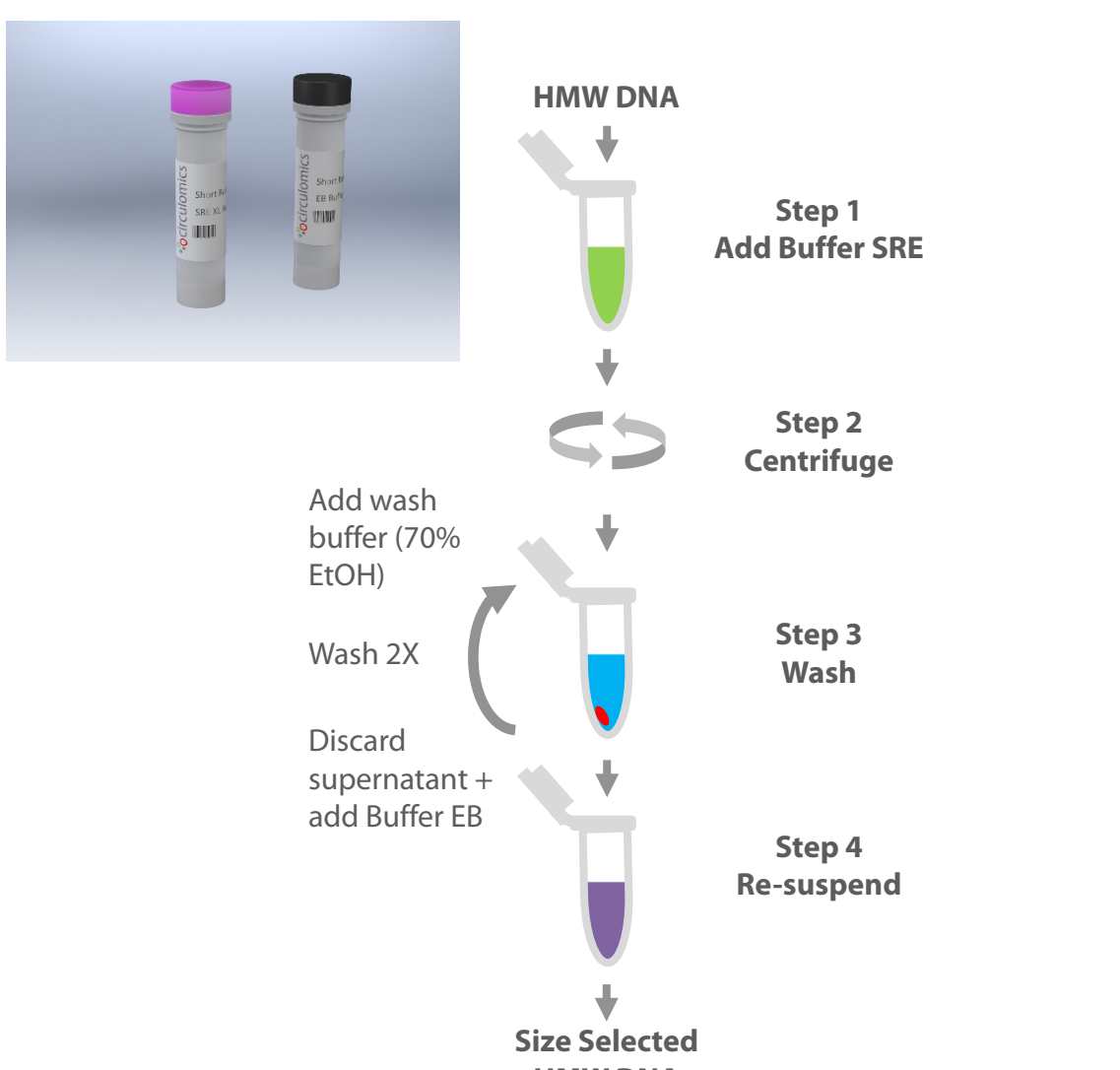
Rapid Magnetic Purification

- 1 disk per tube
- Rapid 1 hour bind, wash, and elute process
- HMW + UHMW DNA extraction protocols
- Manual processing using magnetic rack
- Automated processing using Thermo Fisher KingFisher
- Broad sample types include cells, bacteria, blood, plants, tissues, and insects

HMW and UHMW DNA Extraction

- HMW DNA extraction protocol = 50 kb – 300+ kb
- UHMW DNA extraction protocol = 50 kb – 1+ Mb
- HMW DNA + high purity = long read lengths and high sequencing yields across diverse sample types

Short Read Eliminator



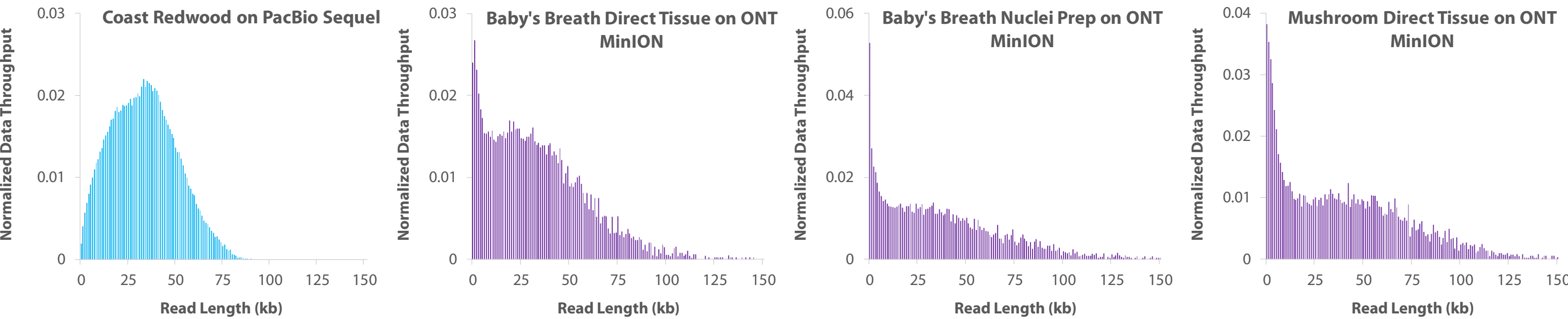
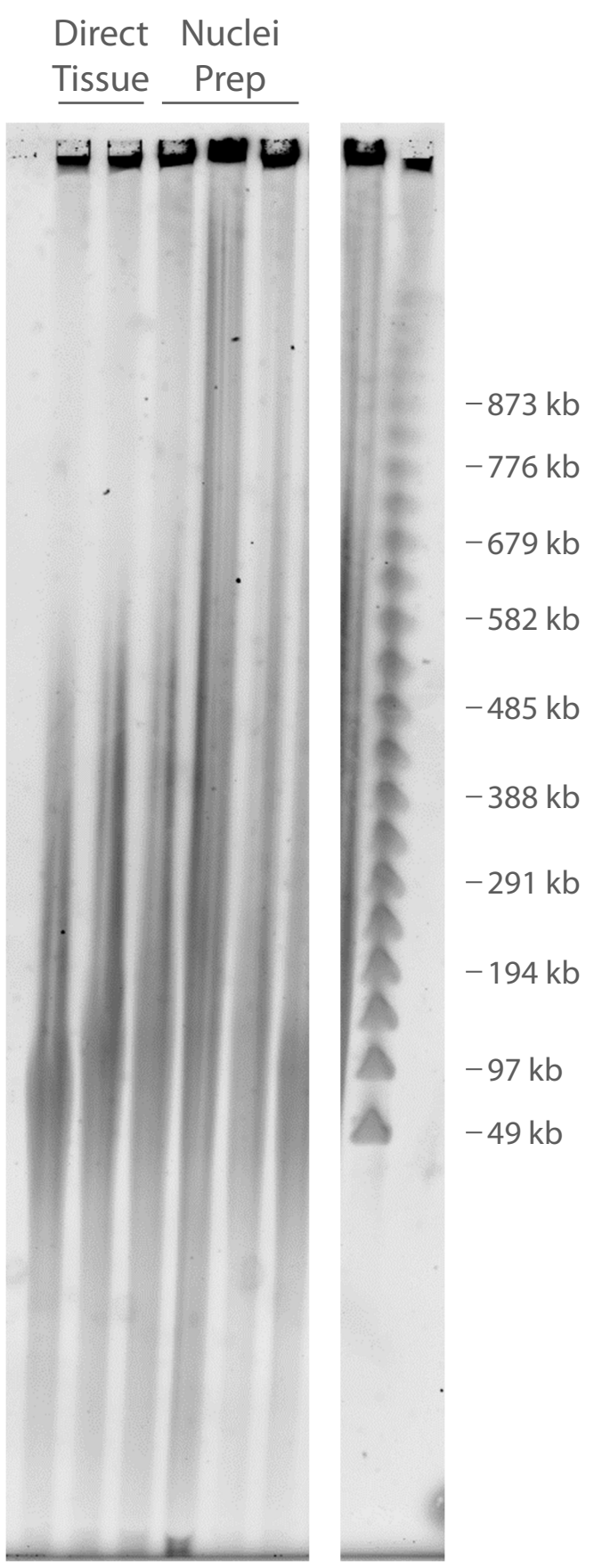
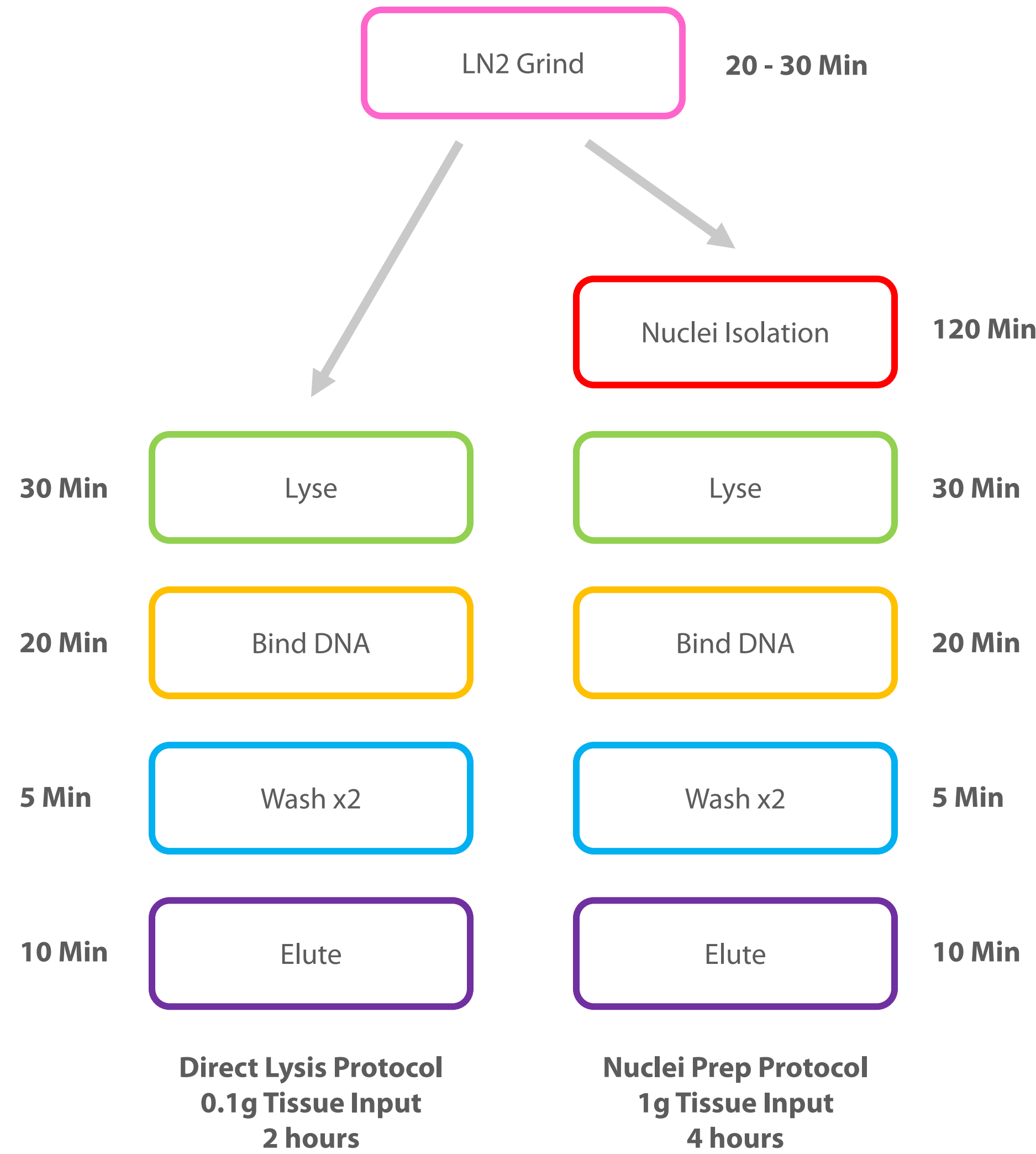
The Short Read Eliminator Family

- Enhance read lengths and enrich long-reads by depleting short DNA
- High cutoffs up to 40 kb
- Progressive depletion begins at cutoff and is more efficient as DNA gets shorter
- High recovery of HMW DNA
- Rapid 1 hour process requires only a centrifuge

Version	Depletion Range	Recovery	Sample Notes
SRE XS	Begins at 10 kb	50-90%	For sheared / fragmented DNA
SRE	Begins at 25 kb	50-70%	For high quality HMW DNA (>48 kb)
SRE XL	Begins at 40 kb	40-50%	For very high quality HMW DNA (>>48 kb)

Plant Samples

New Nanobind Plant Big DNA Kit will include chemistries for HMW DNA extraction from 1) plant nuclei preps and 2) directly from plant tissue (in development).

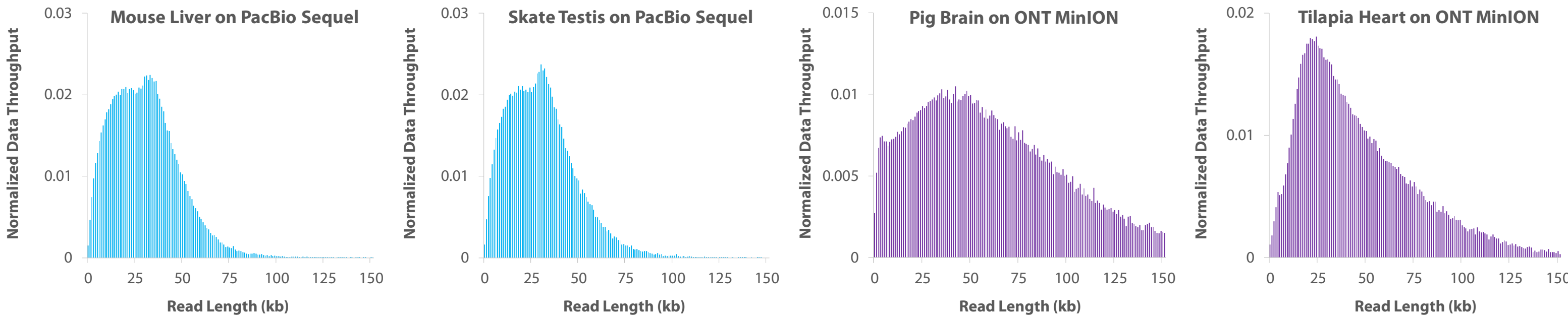
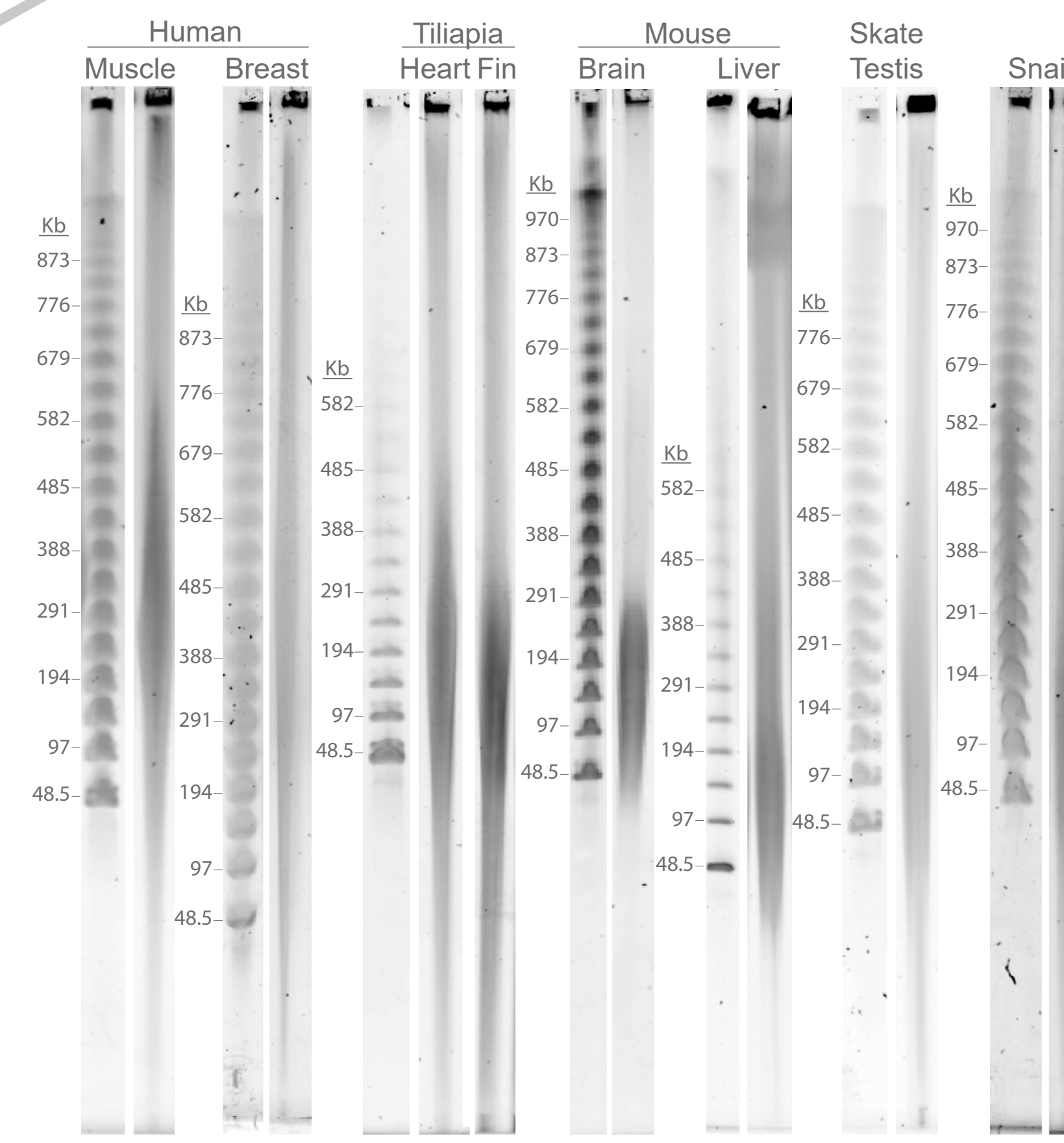
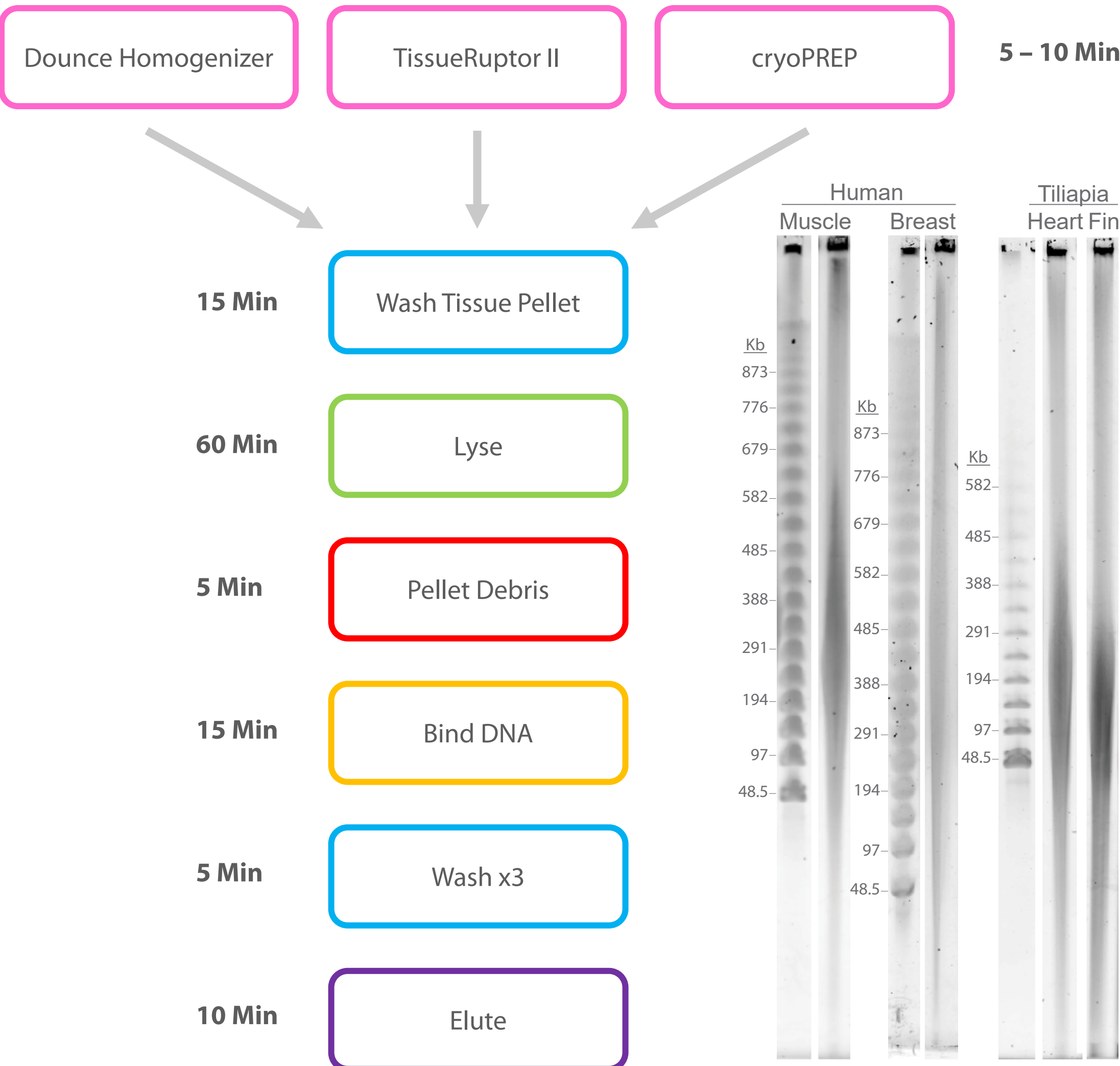


PacBio Sequel I / II							
Sample	Protocol	Sequencing	260/280	260/230	Subread N50 (bp)	Polymerase N50 (bp)	Yield (Gb)
Coast Redwood	Nuclei	5X needle, 30 kb BP, Sequel I	1.8	1.4	32,558	35,250	5.3
Rice	Nuclei	No shear, 20 kb BP, Sequel I	1.9	1.7	29,750	31,750	8.5
Brazilian Hyacinth	Nuclei	No shear, 20 kb BP, Sequel I	1.8	2.0	29,750	31,750	11.0
Baby's Breath	Nuclei	No shear, 10-50 kb BP, Sequel I	1.63	1.38	24,000	N/A	9.0

Oxford Nanopore MinION / GridION / PromethION							
Sample	Protocol	Sequencing	260/280	260/230	Read Length N50 (bp)	% Data >100 kb	Yield (Gb)
Raspberry	Nuclei	5X needle, No SS, LSK109, PRO002	N/A	N/A	24,616	6.7%	47.9
Baby's Breath	Nuclei	5X needle, No SS, LSK109, 106D, 1 hr	1.65	1.31	33,438	4.7%	0.43
Baby's Breath	Direct	5X needle, No SS, LSK109, 106D, 1 hr	1.88	1.71	30,163	1.5%	0.54
Mushroom	Direct	5X needle, No SS, LSK109, 106D, 1 hr	1.87	1.24	35,688	5.5%	0.50

Tissue Samples

Nanobind Tissue Big DNA Kit can perform HMW DNA extraction from mammalian, fish, avian, crustacean, mollusk, and select insect species.



PacBio Sequel I / II							
Sample	Protocol	Sequencing	260/280	260/230	Subread N50 (bp)	Polymerase N50 (bp)	Yield (Gb)
Mouse Liver	TR	5X needle, 30 kb BP, Sequel I	1.87	2.1	29,410	30,756	9.4
Stickleback Liver	CP	No shear, 45 kb BP, Sequel II	1.85	2.14	39,448	43,934	90.3
King Crab	DH	60 kb shear, 25 kb BP, Sequel II	1.87	2.28	26,515	28,772	76.2
Prawn Muscle	TR	15 kb shear, 15 kb BP, Sequel I	1.81	1.66	23,186	53,091	9.8

Oxford Nanopore MinION / GridION / PromethION							
Sample	Protocol	Sequencing	260/280	260/230	Read Length N50 (bp)	% Data >100 kb	Yield (Gb)
Pig Brain	DH	No shear, No SS, LSK109, 106D	1.84	2.32	58,251	19.9%	7.0
Pig Liver	DH	No shear, SRE, LSK109, 106D	1.9	2.05	36,357	5.8%	10.1
Zebrafish Muscle	TR	5X needle, No SS, LSK109, 106D	1.85	1.66	24,071	0.5%	4.6
Tilapia Heart	TR	5X needle, SRE, LSK9109, 106D	1.86	2.18	49,392	7.7%	9.6