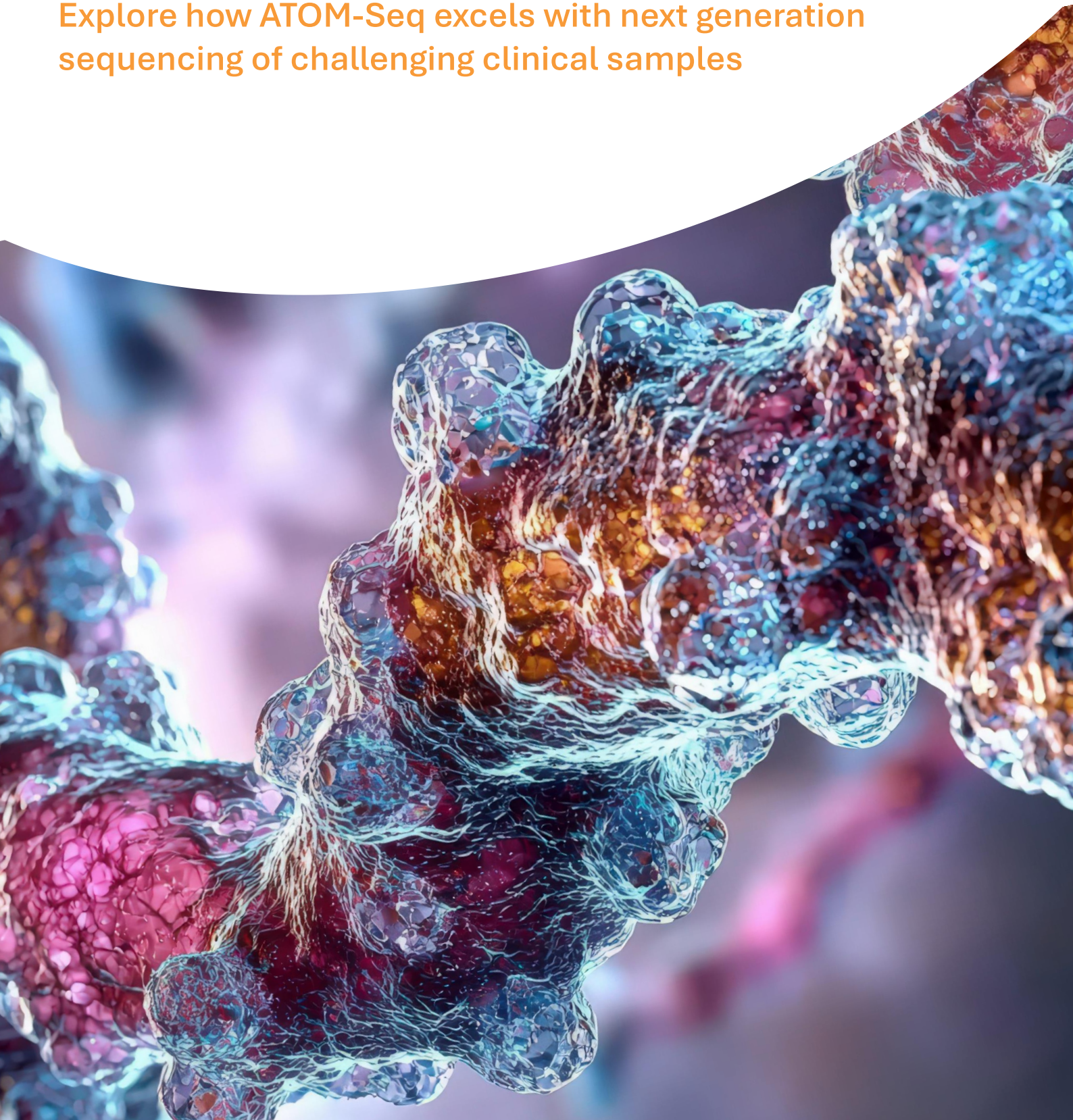
genefirst

XCeloSeq® Fusion Detection

Explore how ATOM-Seq excels with next generation sequencing of challenging clinical samples



Unparalleled Fusion Detection

What are RNA fusions?

RNA fusions result from the abnormal joining of segments from different genes or regions, often caused by chromosomal rearrangements

Potential consequences

Oncogenic transformation
May produce proteins that drive cancer

Loss of gene function
Disruption of original gene function may cause diseases

Non-functional RNA
Leads to cellular stress or inefficiency

Benefits of detecting unknown fusions

IMPROVED DIAGNOSIS

Helps identify rare fusions for accurate disease classification, especially in cancers

PERSONALISED MEDICINE

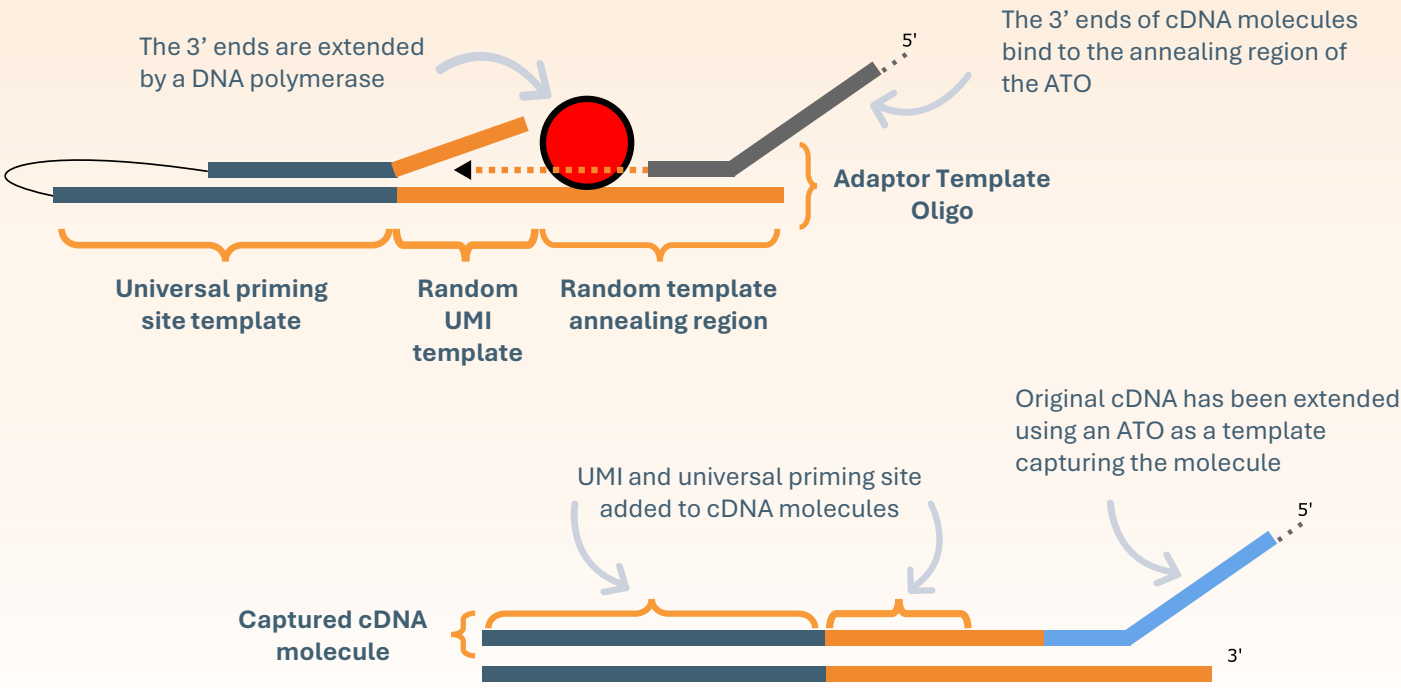
Both common and novel fusions can guide targeted therapy

BIOMARKER DISCOVERY

Novel fusions can serve as diagnostic, prognostic, or therapeutic biomarkers

ATOM-Seq®
An Alternative to Ligation-Based DNA Capture

A reimagined way of processing patient samples, combining advantages and overcoming limitations of common library preparation approaches

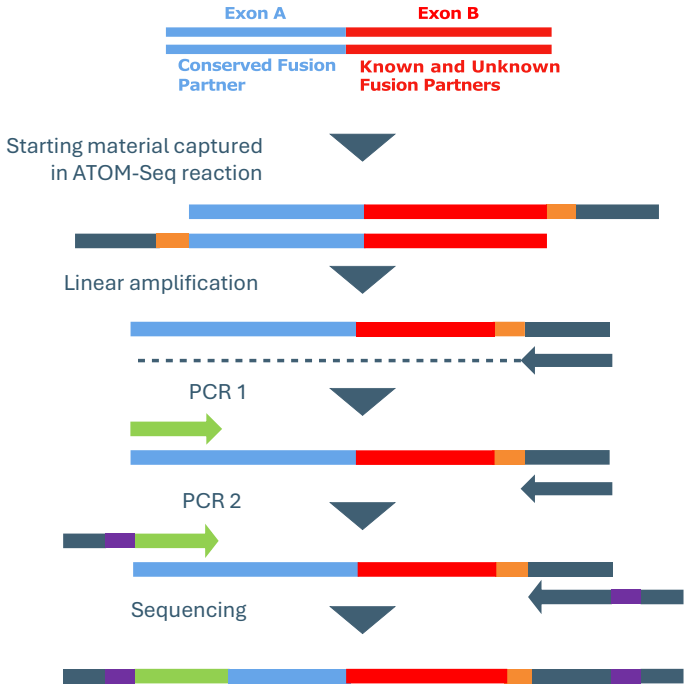


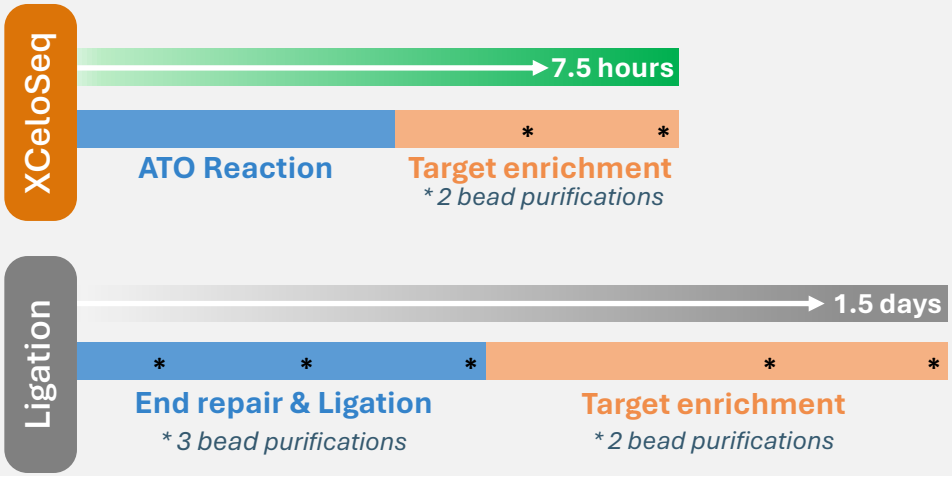
Targeted RNA Enrichment Workflow

Assays designed to capture FFPE RNA and enrich conserved fusion partners to detect and identify every fusion

Uniquely designed for challenging material

- Simple, ligation-free approach with no DNA end-repair
- Captures all single- and double-strand DNA
- Captures short and degraded material
- Efficient with low input quantities
- Single primer enrichment to maximise capture regardless of DNA breakpoint
- Unique molecular identifies for error suppression
- Minimal bead purification steps





Simple NGS workflows powered by ATOM-Seq

- Single-day workflow
- Fewer bead purifications and less hands-on time
- Easy customisation

Workflow benefits

Generate high-quality libraries with workflows optimised for use with FFPE material

Simple, single-day protocols, leveraging the simplicity and efficiency of DNA polymerases

Detect all fusions as PCR enrichment requires only one target-specific primer

Broad compatibility with Illumina, Ion Torrent, Element Bioscience and MGI sequencers

ATOM-Seq captures all cDNA, sexcels with even the lowest quality RNA from FFPE samples

Count fusions with confidence with Unique Molecular Identifiers

Targeted RNA Panel Gene Targets

	SEQ007	SEQ008	SEQ012	SEQ014	SEQ015	SEQ017	SEQ018	SEQ019
ABL1	●				●	●		●
ABL2	●							●
AKT1	●							
AKT2	●							
AKT3	●		●					
ALK	●	●	●	●	●		●	
ARHGAP26	●		●					
AXL	●		●					
BCL11B								●
BCL2							●	●
BCL6							●	●
BCR						●	●	●
BIRC3							●	
BRAF	●	●	●		●			
BRD3	●		●					
BRD4	●		●					
CAMTA1				●				
CBFB						●	●	
CCNB3				●				
CCND1							●	
CCND3							●	
CDK6							●	
CHD1						●		●
CHIC2						●	●	
CIC				●				
CIITA							●	
CREBBP						●	●	●
CRLF2	●							●
CSF1R	●					●		●
DEK							●	
DUSP22							●	
EBF1								●
EGFR	●	●	●					
EIF4A1							●	
EPC1				●				
EPOR	●							●
ERBB2	●							

	SEQ007	SEQ008	SEQ012	SEQ014	SEQ015	SEQ017	SEQ018	SEQ019
ERBB4	●							
ERG	●	●	●			●		
ESR1	●		●					
ESRRA	●							
ETV1	●	●	●					
ETV4	●		●					
ETV5	●		●					
ETV6	●		●			●	●	●
EWSR1	●		●	●	●			
FGFR1	●	●	●		●	●	●	●
FGFR2	●	●	●		●			
FGFR3	●	●	●		●			
FGR	●		●					
FOXO1				●				
FUS				●				
GLI1				●				
GLIS2						●		
HMGA2				●				
IKZF1						●		●
IKZF2								●
IKZF3						●		●
IL2RB	●							
INSR	●		●					
JAK1	●							
JAK2	●				●	●	●	●
JAK3	●							
JAZF1				●				
KAT6A						●		
KIT	●							
KLF2								●
KMT2A						●	●	●
MALT1							●	
MAML2	●		●					
MAST1	●		●					
MAST2	●		●					
MEAF6				●				
MECOM						●		

	SEQ007	SEQ008	SEQ012	SEQ014	SEQ015	SEQ017	SEQ018	SEQ019
MET	●	●	●					
MLF1							●	
MLLT10						●	●	
MLLT4						●		●
MRTFA						●	●	
MRTFB				●				
MSMB	●		●					
MUSK	●		●					
MYB	●		●					
MYC	●					●	●	●
MYH11						●		
NCOA2				●				
NF1						●		●
NFKB2							●	
NOTCH1	●		●			●	●	●
NOTCH2	●		●					
NRG1	●	●	●					
NTRK1	●	●	●		●			
NTRK2	●	●	●		●			
NTRK3	●	●	●	●	●			●
NUMBL	●		●					
NUP214						●		●
NUP98						●		●
NUTM1	●		●					
P2RY8							●	●
PAG1								●
PAX5								●
PBX1								●
PDCD1LG2						●	●	●
PDGFB				●				
PDGFRA	●		●			●	●	●
PDGFRB	●		●			●		●
PICALM						●		●
PIK3CA	●		●					
PKN1	●		●					
PLAG1				●				
PML						●		

	SEQ007	SEQ008	SEQ012	SEQ014	SEQ015	SEQ017	SEQ018	SEQ019
PPARG	●		●					
PRDM16							●	
PRKCA	●		●					
PRKCB	●		●					
PTK2B	●							●
RAF1	●		●					
RARA	●					●		
RBM15						●		
RELA	●		●					
RET	●	●	●		●			
ROS1	●	●	●	●		●		
RSPO2	●		●					
RSPO3	●		●					
RUNX1						●		●
RUNX1T1						●		
SEMA6A								●
SETD2						●		●
SS18				●				
STAT6				●				
STIL							●	●
SYK	●							
TAF15				●				
TAL1								●
TCF12				●				
TCF3						●	●	●
TERT	●		●					
TFE3	●		●	●				
TFEB	●		●					
TFG				●		●		
THADA	●		●					
TMPRSS2	●		●					
TP63							●	
TSLP	●							
TYK2	●							●
USP6				●				
YWHAE				●				
ZCCHC7								●

GeneFirst Limited

Unit 2 The Quadrant,
Abingdon Science Park, Abingdon,
Oxfordshire, OX14 3YS
Phone: +44 (0) 1865 407 400
Email: sales@genefirst.com
Web: www.genefirst.com

Product Code	Product Name	Gene Targets	Recommended Reads
SEQ007	XCeloSeq Fusion Research Kit	74	3.5 million
SEQ008	XCeloSeq Lung Cancer Fusion Kit	15	2 million
SEQ012	XCeloSeq Solid Cancer Fusion Kit	53	3 million
SEQ014	XCeloSeq Sarcoma Fusion Kit	26	1.5 million
SEQ015	XCeloSeq Actionable Fusion Kit	12	1.5 million
SEQ017	XCeloSeq Myeloid Fusion Kit	39	2.75 million
SEQ018	XCeloSeq Lymphoma Fusion Kit	33	2.5 million
SEQ019	XCeloSeq Acute Lymphoblastic Leukaemia Fusion Kit	44	2.75 million