

## Solutions for Molecular Pathology Laboratory of Today, Tomorrow and Beyond...

BioGenex designs, develops, and commercializes advanced fully-automated molecular pathology systems for cancer diagnosis, prognosis, personalized medicine, and life science research. The recent introduction of our eFISHiency integrated workflow solution for FISH laboratories and miRNA system for characterization of CUP and for undifferentiated tumors is a game changer and unrivaled in the industry. Our fully automated molecular pathology work stations are the most advanced system globally. Our customer focused approach, with premier after sales support and excellent technical service, provides the best in class customer care. Our spirit of innovation drives us to deliver cutting edge technology, years ahead of our competition, and the finest systems for life Science research and diagnostics.



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**BioGenex**

# Game Changer

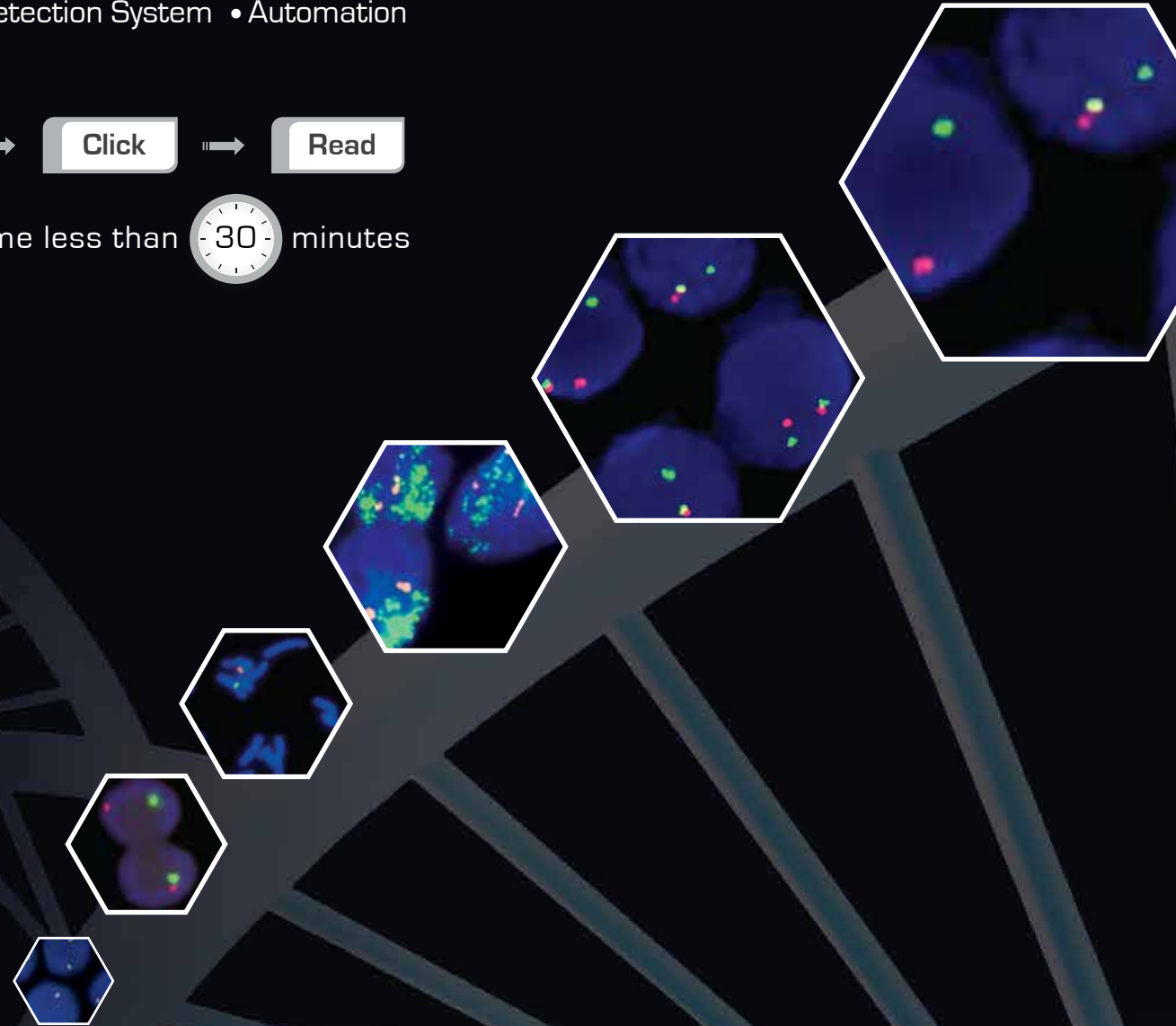
## eFISHiency Integrated System

• Probes • Detection System • Automation

Easy to Use



Hands on time less than 30 minutes



**BioGenex**

# Game Changer

- Ready to Use
- Intense Clean stain
- Optimized protocols

## eFISH Probes



## eFISH Kits

eFISH Kit	Xmatrx® System		
	ELITE	NANO	MINI
eFISH Histo*	✓	✓	✓
eFISH Cyto†	✓	✓	✓
eFISH Universal#	Manual/Automation		

\*For Fixed Paraffin Blocks (FFPE)

† For Cytospecimens

# For both FFPE & Cell

## Kit Components

- Nucleic Acid Retrieval
- Protease & Reconstitution Buffer
- Fixative (Cyto & Universal Kits)
- Wash Buffer



# eFISHiency Integrated System

## eFISH Visualization Kits & Accessories

The kits consist of convenient-to-use reagents including protease and buffers for pre-treatment and post-hybridization stringency washes. eFISH Histo is for formalin fixed paraffin blocks (FFPE), eFISH Cyto is for bone marrow aspirate, peripheral blood and smear slides and eFISH U is a universal kit for all sample types. Kits include template protocols optimized for use with eFISH probes and kits.

Reagents*	Volume
<b>eFISH Histo kit (20 Tests) on Automation</b>	<b>Cat # DF500-20X</b>
Nucleic Acid Retrieval Solution	1 ml
Pepsin powder 1	20 mg x 5
eFISH Reagent A	20 ml
eFISH Protease 1 Buffer	20 ml x 5
eFISH Wash buffer 1 (10X)	200 ml
<b>eFISH Cyto kit (20 Tests) on Automation</b>	<b>Cat # DF510-20X</b>
Pepsin powder 2	2 mg x 5
eFISH Formaline Fixative	20 ml
eFISH Reagent A	20 ml
eFISH Reagent B	20 ml
eFISH Protease 2 Buffer	20 ml x 5
eFISH Wash buffer 1 (10X)	200 ml
eFISH Wash buffer 2 (10X)	200 ml
<b>eFISH U kit (20 Tests) Manual</b>	<b>Cat # DF530-20K</b>
Nucleic Acid Retrieval Solution	250 ml
Pepsin powder 1U	25 mg x 5
Pepsin powder 2 U	5 mg x 5
eFISH Formaline Fixative	250 ml
eFISH Protease 1 Buffer	250 ml
eFISH Protease 2 Buffer	250 ml
eFISH Wash buffer 1 (10X)	500 ml
eFISH Wash buffer 2 (10X)	500 ml

Reagents & Consumables	Volume	Cat. No.
DAPI counter stain	1 ml	HK606-10K
<b>Barrier Slides</b>		
18x18mm	72 slides/box	XT128-SL
18x18mm	1440 slides/case	XT128-CL
25x25mm	72 slides/box	XT108-SL
25x25mm	1440 slides/case	XT108-CL
<b>Coverslips</b>		
18x18mm	175 coverslip/box	XT121-YBX
18x18mm	1750 coverslip/box	XT121-XBX
25x25mm	90 coverslip/box	XT122-90X
25x25mm	900 coverslip/box	XT122-YQK
<b>X-DeWax™</b>		
Ready to use	1000 ml	HX015-XAK
Concentrated	1000 ml	HX016-XAK

\*Kit component may change as per protocols update.

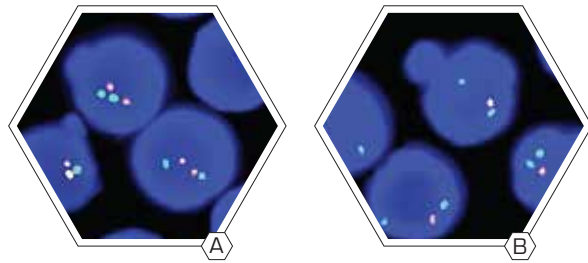


# eFISHiency Integrated System

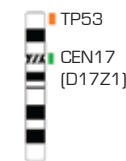
- Affordable
- Reproducible
- Reliable

## DELETION

eFISH TP53 / CEN17

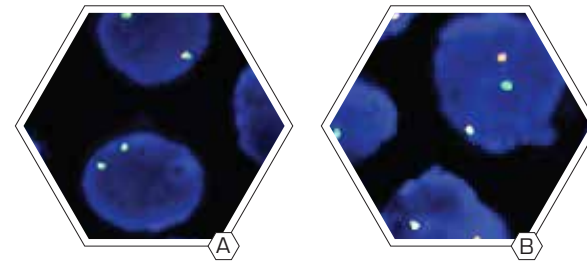


**A.** Normal interphase cells showing two orange and two green signals in each nucleus.  
**B.** Bone marrow tissue with deletion of the TP53 gene as indicated by one orange signal and two green signals in each nucleus.

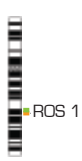


## BREAK APART

eFISH ROS1

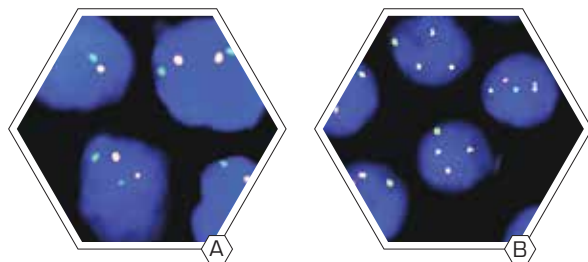


**A.** Normal interphase cells showing two orange/green fusion signals (yellow) in each nucleus.  
**B.** Paraffin embedded NSCLC cells showing one orange/green fusion signal (non-rearranged). One orange signal, and one green signal indicating translocation of ROS1.



## FUSION

eFISH BCR / ABL

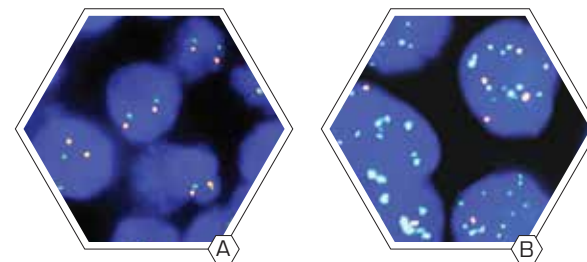


**A.** Normal interphase cells showing two orange and two green signals in each nucleus.  
**B.** Bone marrow biopsy tissue with translocation affecting the BCR/ABL loci as indicated by one orange signal, one green signal and two orange/green fusion signals.

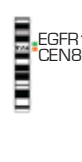


## COPY NUMBER

eFISH FGFR1 / CEN8



**A.** Normal interphase cells showing two orange and two green signals in each nucleus.  
**B.** Lung carcinoma tissue showing amplification of the FGFR1 gene (green) and partly polysomy 8 (orange).



# Game Changer

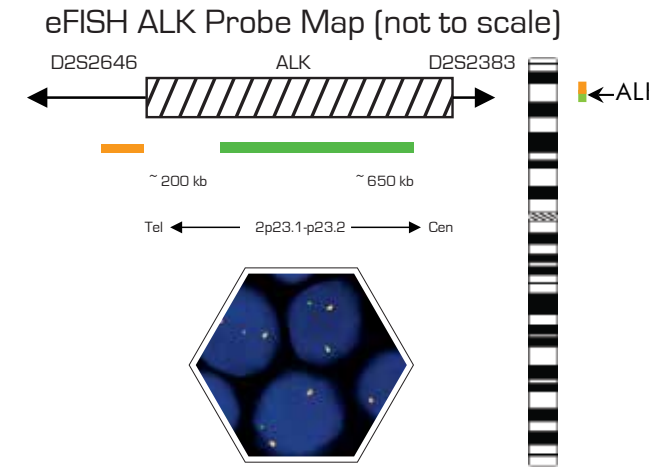
## High Sensitivity & Specificity - Optimum Results

eFISH probes provide improved signal intensity. All eFISH probes are processed by a unique Repeat Subtraction Technique resulting in intense clear stain.

## Ordering Information

### eFISH Oncology Probes

The use of eFISH ALK Dual Color Break Apart Probe along with appropriate filters produces orange and green signal for hybridization regions of chromosomal region 2p23. In normal interphase cells or cells without 2p23 translocation, two orange/two green fusion signals appear. In regions where 2p23 is affected by translocation, one separate green signal and one separate orange signal are observed.



Product Description	Probe Type	Colors	Cat. No. [10 Tests]	Cat. No. [20 Tests]
eFISH 1p36/1q25	Gene Deletion	●/●	FP044-10X	FP044-20X
eFISH 19q13/19p13	Gene Deletion	●/●	FP045-10X	FP045-20X
eFISH ALK	Breakapart	●/●	FP056-10X	FP056-20X
eFISH CHOP	Breakapart	●/●	FP050-10X	FP050-20X
eFISH CMYC/CEN 8	Copy Number	●/●	FP065-10X	FP065-20X
eFISH COL1A1	Breakapart	●/●	FP054-10X	FP054-20X
eFISH COL1A1/PDGFB	Dual Fusion	●/●	FP052-10X	FP052-20X
eFISH EGFR/CEN 7	Copy Number	●/●	FP040-10X	FP040-20X
eFISH EWSR1	Breakapart	●/●	FP048-10X	FP048-20X
eFISH FGFR1/CEN 8	Copy Number	●/●	FP042-10X	FP042-20X
eFISH FGFR2/CEN 10	Copy Number	●/●	FP055-10X	FP055-20X
eFISH FOXO1	Breakapart	●/●	FP077-10X	FP077-20X
eFISH FUS	Breakapart	●/●	FP058-10X	FP058-20X
eFISH HER2/CEN17	Copy Number	●/●	FP039-10X	FP039-20X
eFISH MDM2/CEN 12	Copy Number	●/●	FP038-10X	FP038-20X
eFISH MET/CEN 7	Copy Number	●/●	FP047-10X	FP047-20X
eFISH NMYC/2q11	Copy Number	●/●	FP043-10X	FP043-20X
eFISH p16/CEN 9	Gene Deletion	●/●	FP041-10X	FP041-20X
eFISH PDGFB	Breakapart	●/●	FP053-10X	FP053-20X
eFISH PIK3CA/CEN 3	Copy Number	●/●	FP059-10X	FP059-20X
eFISH RB1/13q12	Gene Deletion	●/●	FP079-10X	FP079-20X
eFISH RET	Breakapart	●/●	FP061-10X	FP061-20X
eFISH ROS1	Breakapart	●/●	FP060-10X	FP060-20X
eFISH SYT	Breakapart	●/●	FP049-10X	FP049-20X
eFISH TERT/5q31	Copy Number	●/●	FP066-10X	FP066-20X
eFISH TFE3	Breakapart	●/●	FP051-10X	FP051-20X
eFISH TP53/CEN 17	Gene Deletion	●/●	FP062-10X	FP062-20X
eFISH VHL/CEN 3	Gene Deletion	●/●	FP046-10X	FP046-20X

• eFISH probes are Analyte Specific Reagents. Analytical and performance characteristics are not established.

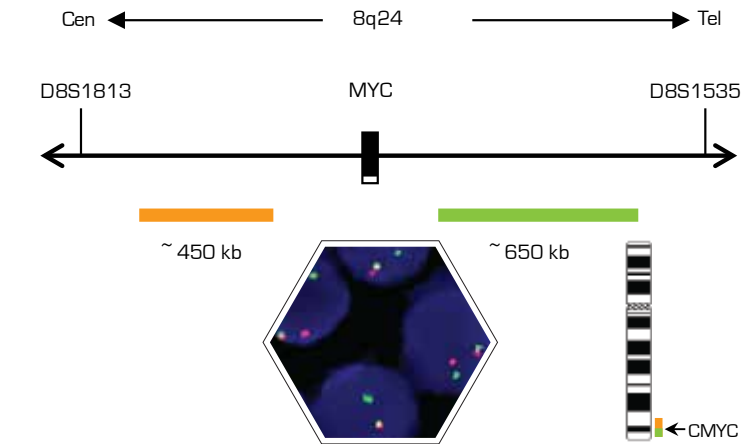
# eFISHiency Integrated System

## Ordering Information

### eFISH Hematology Probes

eFISH CMYC Dual Color break apart Probe is a mixture of two direct labeled probes hybridizing to the 8q24 band. The orange fluorochrome direct labeled probe hybridizes proximal to the CMYC gene, the green fluorochrome direct labeled probe hybridizes distal to that gene.

CMYC Probe Map (not to scale)



Product Description	Probe Type	Colors	Cat. No. [10 Tests]	Cat. No. [20 Tests]
eFISH ALK	Breakapart	●/●	FP056-10X	FP056-20X
eFISH AML1/ETO	Dual Fusion	●/●	FP072-10X	FP072-20X
eFISH BCL2/IGH	Dual Fusion	●/●	FP074-10X	FP074-20X
eFISH BCL6	Breakapart	●/●	FP080-10X	FP080-20X
eFISH BCR/ABL	Dual Fusion	●/●	FP071-10X	FP071-20X
eFISH BIRC3/MALT1	Dual Fusion	●/●	FP075-10X	FP075-20X
eFISH CCND1	Breakapart	●/●	FP069-10X	FP069-20X
eFISH CCND1/CEN 11	Copy Number	●/●	FP063-10X	FP063-20X
eFISH CCND1/IGH	Dual Fusion	●/●	FP057-10X	FP057-20X
eFISH CMYC	Breakapart	●/●	FP064-10X	FP064-20X
eFISH CMYC/CEN 8	Copy Number	●/●	FP065-10X	FP065-20X
eFISH CMYC/IGH	Dual Fusion	●/●	FP067-10X	FP067-20X
eFISH D13S319/13q34/CEN 12	Copy Number	●/●/●	FP078-10X	FP078-20X
eFISH EGR1/5p15	Gene Deletion	●/●	FP068-10X	FP068-20X
eFISH ETV6	Breakapart	●/●	FP083-10X	FP083-20X
eFISH ETV6/RUNX1	Dual Fusion	●/●	FP076-10X	FP076-20X
eFISH IGH	Breakapart	●/●	FP070-10X	FP070-20X
eFISH p16/CEN 9	Gene Deletion	●/●	FP041-10X	FP041-20X
eFISH PDGFRB	Breakapart	●/●	FP081-10X	FP081-20X
eFISH PML/RARA	Dual Fusion	●/●	FP073-10X	FP073-20X
eFISH RB1/13q12	Gene Deletion	●/●	FP079-10X	FP079-20X
eFISH TERT/5q31	Copy Number	●/●	FP066-10X	FP066-20X
eFISH TP53/CEN 17	Gene Deletion	●/●	FP062-10X	FP062-20X

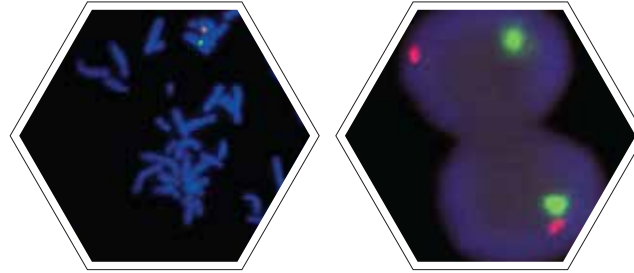
• eFISH probes are Analyte Specific Reagents. Analytical and performance characteristics are not established.

# Game Changer

## Ordering Information

### eFISH Enumeration Probes

Chromosome enumeration probes (CEP) are chromosome-specific FISH probes that hybridize to highly repetitive human satellite DNA sequences, usually located near centromeres. CEP signals are bright, and enable the identification and enumeration of human chromosomes in interphase and meta-phase cells from fresh and archived samples.



Product Description	Probe Type	Colors	Cat. No. (10 Tests)	Cat. No. (20 Tests)
eFISH 1p12	Copy Number	●	FP084-10X	FP084-20X
eFISH 2q11	Copy Number	●	FP085-10X	FP085-20X
eFISH CEN 3	Copy Number	●	FP086-10X	FP086-20X
eFISH 4p11	Copy Number	●	FP087-10X	FP087-20X
eFISH CEN 6	Copy Number	●	FP088-10X	FP088-20X
eFISH CEN 7	Copy Number	●	FP089-10X	FP089-20X
eFISH CEN 8	Copy Number	●	FP090-10X	FP090-20X
eFISH CEN 9	Copy Number	●	FP091-10X	FP091-20X
eFISH CEN 10	Copy Number	●	FP092-10X	FP092-20X
eFISH CEN 11	Copy Number	●	FP093-10X	FP093-20X
eFISH CEN 12	Copy Number	●	FP094-10X	FP094-20X
eFISH 13q12	Copy Number	●	FP095-10X	FP095-20X
eFISH CEN 13/ CEN 18/CEN 21	Copy Number	●/●/●	FP096-10X	FP096-20X
eFISH CEN 17	Copy Number	●	FP097-10X	FP097-20X
eFISH CEN 18	Copy Number	●	FP098-10X	FP098-20X
eFISH 21q22	Copy Number	●	FP099-10X	FP099-20X
eFISH CEN X	Copy Number	●	FP100-10X	FP100-20X
eFISH CEN Yq12	Copy Number	●	FP101-10X	FP101-20X
eFISH CEN X/Yq12	Copy Number	●/●	FP102-10X	FP102-20X

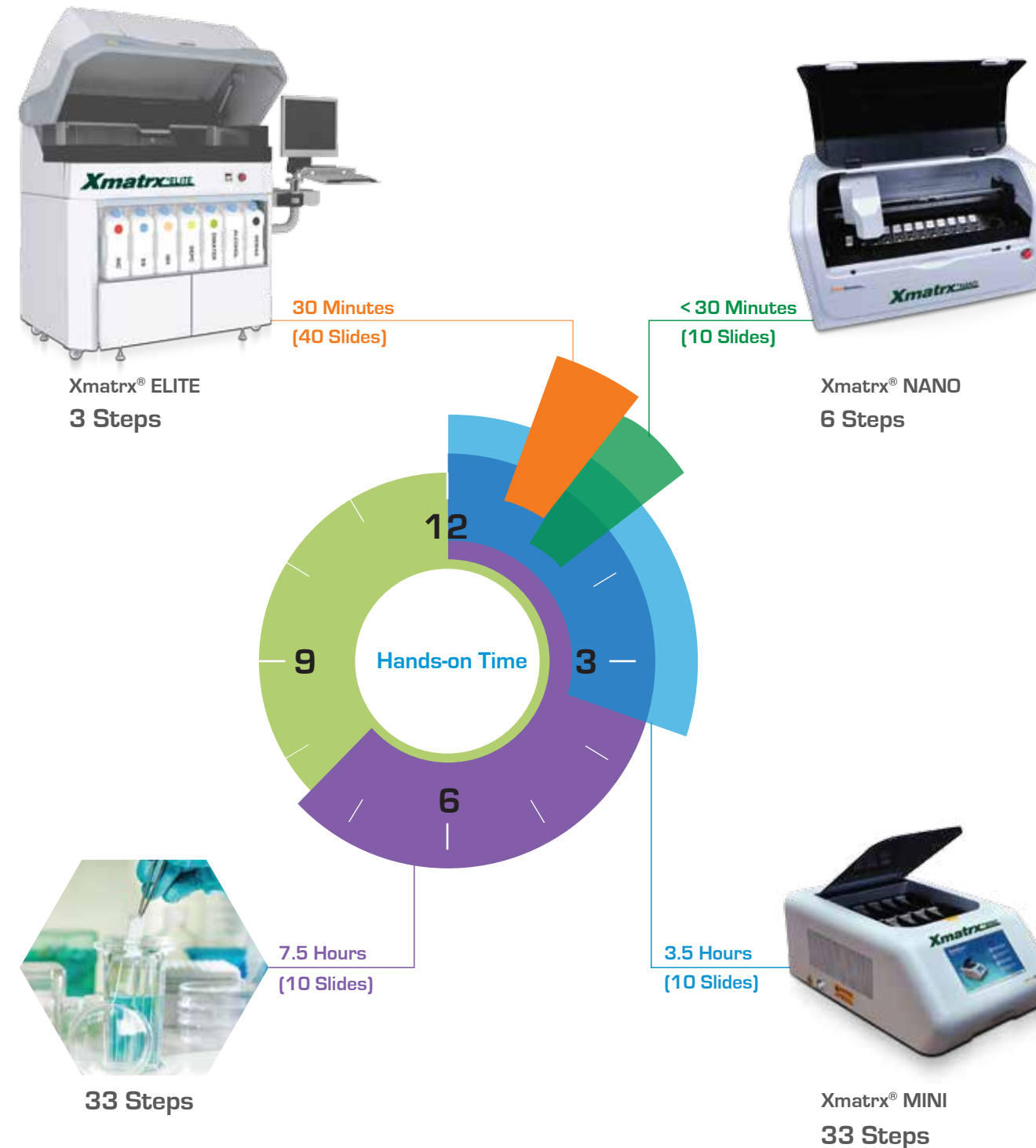
### eFISH Probe Characteristics

Fluorochrome	Excitation	Emission	Similar to
eFISH ■	418 nm	467 nm	DEAC
eFISH ■	503 nm	528 nm	FITC
eFISH ■	547 nm	572 nm	Rhodamine

# eFISHiency

Adaptable to your Work Flow

HANDS-ON TIME REDUCED BY >90%



# Integrated System

Multiple Options for Automation

## Xmatrx® ELITE

Microtome to Microscope

- The World's First and Only Fully Automated Front-end FISH Processing System
- Run up to 40 slides under multiple protocols
- Reduce hands-on tech time from 7.5 hours to 30 minutes

33 Steps Reduced to 3



## Xmatrx® NANO

eFISHiency System for FISH Automation

- On-board dewaxing, oil seal and final coverslip after DAPI
- Add micro-reagents manually to save cost
- Run 10 different protocols at the same time
- Intelligent SMS information for alerts

33 Steps Reduced to 6



## Xmatrx® MINI

eFISHiency Workstation

- eFISHiency Workstation for manual FISH assay
- Hybridizer with eXACT™ temperature control
- 10 Independently programmable thermal cyclers
- Built-in touch screen display
- Manual coverslip application and removal

### Accessories



Oil stamp



Coverslip stand



Suction pen

