



Cell Technology, Inc

# Fluoro hROS

## APF: Selective Indicator for Highly Reactive Oxygen Species

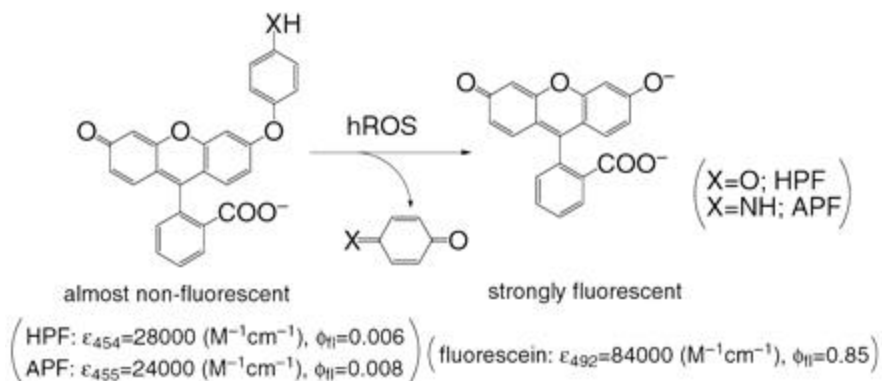
### Key Benefits

- Can monitor multiple time points to follow real time kinetics.
- Quenched cell permeable dye.
- One-step, no wash assay.
- Adaptable for High Throughput format
- Non-destructive cell based assay allows monitoring of additional parameters
- **Applications** - Fluorescence Plate Reader / Fluorescent Microscope / Flow Cytometry

### Introduction

A new novel probe, Aminophenyl fluorescein (APF) developed by Tetsuo Nagano et. al. (1), is a general selective indicator for the detection of highly reactive oxygen species (hROS). The probe has little reactivity towards other ROS such as: singlet oxygen ( $O_2^1$ ), superoxide ( $O_2^{\cdot -}$ ), hydrogen peroxide ( $H_2O_2$ ), nitric oxide ( $NO^{\cdot}$ ), and alkyl peroxide ( $RO_2^{\cdot}$ ) (see table below)<sup>1</sup>. APF is a cell permeable indicator that can be used to detect Hydroxyl Radical ( $\cdot OH$ ), Peroxynitrite: ( $ONOO^{\cdot}$ ) and hypochlorite ( $\cdot OCl$ ) production in cells.

### Assay Principle



**Reactivity Profile of APF:**

ROS (RFU)	APF (RFU) Ex:499 Em:515	DCFH-DA (RFU) Ex:500 Em:520
Hydroxyl Radical: $\cdot\text{OH}$	1200	7400
Peroxynitrite: $\text{ONOO}^-$	560	6600
Hypochlorite: $\text{OCl}^-$	3600	86
Oxygen Radical: $^1\text{O}_2$	9	26
Superoxide: $\text{O}_2^{\cdot-}$	6	67
Hydrogen Peroxide : $\text{H}_2\text{O}_2$	<1	190
Nitric Oxide: NO	<1	150
Alkylperoxyl Radical: $\text{ROO}\cdot$	2	710
Autoxidation	<1	2000

Catalog #	Contents	Size	Price (US\$)
FLAPF100-2	One vial APF	150 Tests*	175

\*Test size will depend on dilution and volume used per test. For example:

Dilution of APF	Volume of test	Numer of tests
1:500 (10 $\mu\text{M}$ final)	0.2 mL	147
1: 1000 (5 $\mu\text{M}$ final)	0.2mL	294

*Manufactured: by Daiichi Pure Chemicals Co. Ltd. Japan*

**References:**

1 Ken-ichi Setsukinai, Yasuteru Urano, Katsuko Kakinuma, Hideyuki J. Majima, and Tetsuo Nagano. Development of Novel Fluorescence Probes That Can Reliably Detect Reactive Oxygen Species and Distinguish Specific Species. THE JOURNAL OF BIOLOGICAL CHEMISTRY Vol. 278, No. 5, Issue of January 31, pp. 3170–3175, 2003

**Cell Technology, Inc.**  
**950 Rengstorff Ave Suite D**  
**Mountain View, CA 94043**  
**USA**

**Tel: 650-960-2170**  
**Fax: 650-960-0367**  
**sales@celltechnology.com**

[www.celltechnology.com](http://www.celltechnology.com)