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## Fluorescent probe for monitoring changes in mitochondrial membrane potential *via* aggregation-induced enhancement

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The electrical potential of the mitochondria membrane is an important physiological parameter employed to monitor health states of cells. Recently, classical fluorescent dyes, which contain TMRM (tetramethylrhodamine methyl ester), TMRE (tetramethylrhodamine ethyl ester), Rhodamine 123 (Rh 123), and JC-1 cationic groups, have been developed as membrane potential indicators. However, these probes suffer from limitations including high cytotoxicity, low selectivity, and poor photostability. Therefore, new probes for monitoring changes in membrane potentials, which do not suffer from these limitations, are in great demand. Herein, we design the new TPP containing AIE luminogen probe 2 that can be utilized for precise monitoring of membrane potential changes ($\Delta\psi_m$). Compared with previously described fluorescence membrane potential indicators, the new probe, in which the triphenylphos-phonium (TPP) group is conjugated to the AIE through a double bond, has a longer emission wavelength enabling avoidance of autofluorescence in the cell. Furthermore, TPP group enables strong electrostatic interactions to occur with the mitochondrial membrane, so the new probe not only lead to selective targeting but also to a higher sensitivity than those displayed by the commercial indicator rhodamine 123. Therefore, probe 2 appears to be ideally suited for use as a biomarker for studies of the function of mitochondria.

### Biography

Yerin Jeong was born in 1992 in Republic of Korea. She received her bachelor's degree in chemistry from Ewha Womans University, Seoul, Korea in 2017. She is currently on MS studies under the supervision of Prof. Juyoung Yoon in the department of chemistry and nano science at Ewha Womans University. Her research interests include fluorescent chemosensors and molecular recognition.

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