Universal Colorful Staining of Cancer Tissues and Normal Tissues for Histological Diagnosis

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S1. Experimental sections

Measurements

UV-vis spectra were recorded on a Cary 5000 photometer. Fluorescence spectra were obtained on an F-7000 instrument (Hitachi Company). The fluorescence imaging of tissue stained with a confocal laser scanning microscopy (Zeiss Company). The H&E images, **PMI-Man** based images and **PMI-Man** with eosin (P&E) based images were scanned using an Olympus BX43 microscopy.

Stains

Stains were applied directly to tissue sections and intact tissues without further modification.

Tissue collection and processing

The tissues were cut into 4 μm thick sections and mounted on microscope slides. They were stored at room temperature until immediately prior to staining, at which point the sections were deparaffinized, stained according to the protocol below and imaged with confocal fluorescence microscopy and light microscopy.

Tissue section staining with PMI-Man or costaining of PMI-Man and eosin

A section of tissue was deparaffinized by xylene twice for 30 min and 20 min, and then soaked in alcohol, 95% alcohol, 80% alcohol, 75% alcohol and water for 10 min. Then, the section of tissue was exposed to **PMI-Man** (100 μM) for 30 min, and dried in air. For staining with **PMI-Man** and eosin, the tissue was briefly exposed to **PMI-Man** (100 μM) for 30 min, followed by 2% eosin in ethanol for 5 min, and thoroughly rinsed with water to remove any excess stain.

For fluorescence imaging, tissue stained by **PMI-Man** or costained with **PMI-Man** and eosin was excited at 633 nm for **PMI-Man** and 488 nm for eosin, respectively, with a confocal laser scanning microscope (Zeiss Company).

The H&E images, **PMI-Man** based images and **PMI-Man** with eosin (P&E) based images were scanned at 20X with a slide scanner using Olympus BX43 microscopy.

S2. Additional Figures

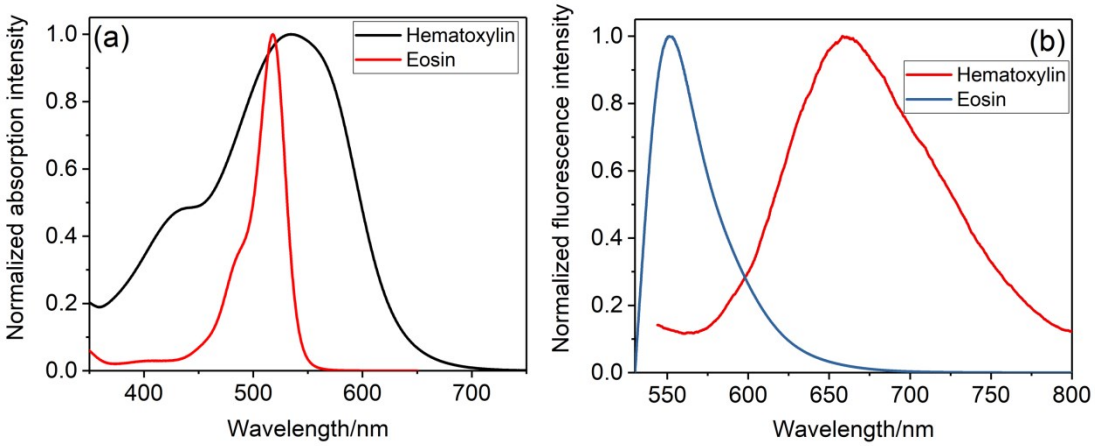

Fig. S1 The structures and their normalized UV-Vis (a) and fluorescence (b) spectra of hematoxylin and eosin.

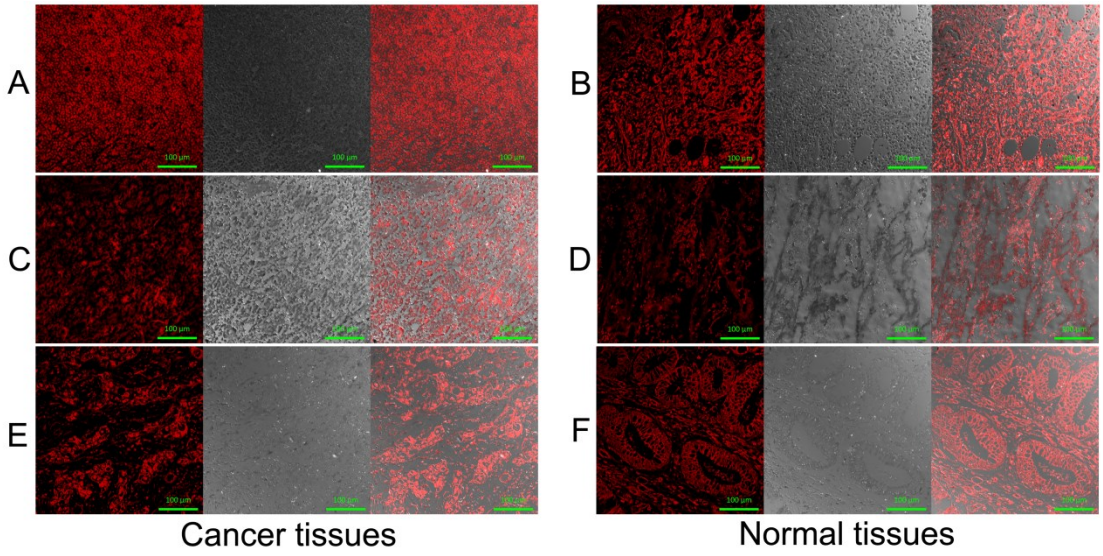

Fig S2. Fluorescence imaging (λ_{ex} = 633 nm) of cancer tissues (A: lymphoma; C: small cell lung carcinoma; E: gastric adenocarcinoma) and normal tissues (B: lymph nodes; D: lung; F: gastric mucosa) stained with **PMI-Man** (100 μM) under a 20× objective lens.