

# Fluorescent sulforaphane derivatives with selective anticancer activity

## About the solution

The invention concerns fluorescently labelled sulforaphane derivatives containing an isothiocyanate group responsible for strong and selective anticancer activity. The compounds combine therapeutic potential with the ability to trace their intracellular behaviour thanks to a stably attached fluorophore.

Studies confirm efficient reduction of prostate and breast cancer cell viability while maintaining non-toxicity toward healthy cells. The derivatives rapidly enter cells, accumulate mainly in mitochondria and exhibit long retention, enabling analysis of distribution, uptake dynamics and clearance.

The isothiocyanate group is essential for biological activity – control analogues lacking this moiety show no cytotoxicity. The fluorophore allows simultaneous use of the compounds as research tools for monitoring intracellular processes.

The invention integrates properties of potential anticancer agents with those of molecular imaging probes.

## Technology readiness level

TRL 4 – Technology validated in laboratory conditions.



TRL 4

## Research Team

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## IP Protection

The invention is protected by a patent application in the Polish Patent Office under the number: **P.445728**

## Applications:

- Design of next-generation selective anticancer agents,
- Imaging of sulforaphane derivative distribution and retention in cells,
- Studies on drug mechanisms and intracellular metabolic processes.

## Cooperation opportunities:

- Licensing of the compounds or the synthetic technology,
- Joint R&D projects focused on further development and validation,
- Preclinical evaluation in collaboration with pharmaceutical partners.