

# Caenorhabditis elegans as a model to investigate the FLASH effect in protontherapy

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## Organisation

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## SCOPE OF THE METHOD

<b>The Method relates to</b>	Human health
<b>The Method is situated in</b>	Basic Research, Education and training, Translational - Applied Research
<b>Type of method</b>	In vivo
<b>Used species</b>	Caenorhabditis elegans

## DESCRIPTION

### Method keywords

Caenorhabditis elegans

C. elegans

Radiotherapy

### Scientific area keywords

Cancer therapy

Protontherapy

FLASH

## Method description

UHDR irradiations show healthy tissue sparing effect known as the FLASH effect. Since 2014, the FLASH effect is investigated worldwide to understand how it works and how to trigger it. The FLASH effect is defined as an *in vivo* effect. However, *in vivo* models are often expensive and time-consuming. Therefore, we wanted to use a simple, easy to manipulate but still relevant *in vivo* model. *C. elegans* was selected because of the extensive available literature and its ease of maintenance. After irradiation of *C. elegans* embryos, a growth delay can be observed on surviving worms.

## Lab equipment

- Irradiation set-up (protons, XR, electrons, etc.),
- Basic biology lab equipment.

## Method status

Still in development

## PROS, CONS & FUTURE POTENTIAL

### Advantages

- Easy to manipulate
- Small *in vivo*

## REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

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