# Double strand break repair and g-H2AX formation in erythrocytes of medaka (Oryzias latipes) after g-irradiation*

Alaa El-Din Hamid Sayed a, b, *, Kento Igarashi b, Tomomi Watanabe-Asaka b, Hiroshi Mitani b

## Abstract:

The study of the DNA damage response in erythrocytes after g-irradiation may provide evidence for its effectiveness as a biomarkers for genotoxic environmental stress. We previously reported various malformations in erythrocytes of medaka irradiated with10 Gy, but not in their micronuclei. In this study, we optimized an assay method for g-H2AX and double strand breaks in erythrocytes of adult medaka fish after 15 Gy of g-irradiation. The highest level of apoptosis and nuclear abnormalities, including in micronuclei, were recorded 4 h after g-irradiation, as was the highest level of g-H2AX foci in erythrocytes. These results suggest that recognition and repair processes occur as a response to DNA damage in erythrocytes in medaka.

## Keywords:

g-H2AX Erythrocytes DNA repair Fish Radiation

## Published In:

Environmental Pollution , 224 , 35-43