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The aim of this thesis has been to increase our understanding of the complex mechanisms that control cellular response to DNA damages. A second goal has been to identify biomarkers that can predict the clinical response of breast tumours to radiotherapy. Several DNA repair associated proteins, as well as the PI3-K/AKT signalling pathway that promotes cellular survival, have been studied. The work in this thesis contributes new knowledge about the roles of these factors as predictors of the outcome of radiotherapy.
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