

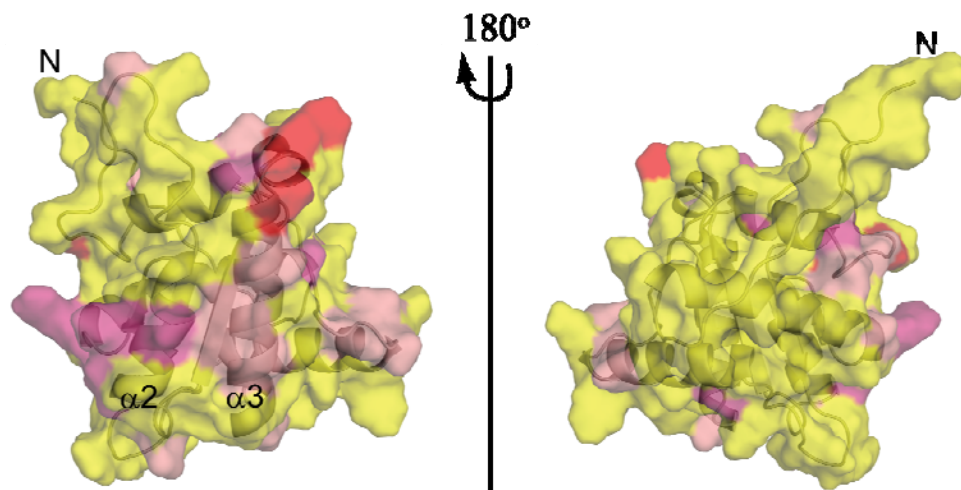
The structure of the cellular stress sensor Gadd45 α has been determined by NMR

This work has been published in the *Journal of Biological Chemistry* and is the major part of the PhD thesis of Ricard Sánchez at the Structural Biology Unit of CIC bioGUNE.

The Gadd45 nuclear proteins modulate the response of mammalian cells to genotoxic and physiological stress. Gadd45 regulate DNA repair, cell cycle, apoptosis, and modulate tumor formation by interacting with other proteins.

Human Gadd45 α is predominantly monomeric and folds into an α/β structure with two long flexible regions. The mitotic kinase Aurora-A interacts through its non-kinase N-terminal domain with a region of Gadd45 α encompassing the site of dimerization. This result suggest that the oligomerization of Gadd45 α could be a regulatory mechanism to modulate its interactions with Aurora-A, and possibly with other proteins too. However Gadd45 α appears to interact only weakly with the protein DNA sliding clamp Proliferating Cell Nuclear Antigen, in contrast with previous reports.

Link to the published article: <http://www.ncbi.nlm.nih.gov/pubmed/20460379>



Surface representation of Gadd45 α with residues colored indicating the extent of their perturbation by the binding to Aurora-A (from yellow to pink, magenta and red, in order of higher perturbation) the right-hand one results from a 180° rotation along the indicated axis.