

P006 Negative regulatory domain in ERM is SUMO-dependent
**Cindy DEGERNY, Yvan de LAUNOIT and
Jean-Luc BAERT**

*UMR8161/ CNRS, IBL, rue Calmette, 59021 Lille Cedex,
France*

ERM, ER81 and PEA3 belong to the PEA3 group of Ets transcription factors and are involved in many normal cellular processes. They are also often overexpressed in cancers and their expression is correlated to invasive phenotype. To exert their function, their transcriptional activity is positively regulated by many post-translational modifications. However, we have reported that sumoylation negatively regulates ERM activity but involved mechanisms are still unknown.

PEA3 group members share an N-terminal transactivation domain (TAD) whose activity is negatively regulated by a flanking domain named negative regulatory domain (NRD). In ERM, we show that NRD maps residues 73 to 298 and encompasses three of the five consensus SUMO sites identified in the protein. Mutagenesis and proteins interfering with the SUMO pathway have been used to demonstrate that these SUMO sites are involved in the NRD function. Although the presence of the three sites induces maximal inhibition of activity, only one functional SUMO site allows significant transcriptional repression whatever its localization in NRD. Finally, we find that the SUMO sites outside the NRD also act negatively on ERM activity suggesting that all the SUMO sites exert a negative effect on ERM transcriptional activity. Altogether, these results show new insights into PEA3 group member transcriptional regulation by SUMO.