

TRAF5-mediated Tax ubiquitination modulates IKK phosphorylation but not binding to NEMO

Amandine Bonnet, Sabrina Pène, Laurence Bénit, Laetitia Waast, Ali Bazarbachi, Renaud Mahieux, Claudine Pique

► **To cite this version:**

Amandine Bonnet, Sabrina Pène, Laurence Bénit, Laetitia Waast, Ali Bazarbachi, et al.. TRAF5-mediated Tax ubiquitination modulates IKK phosphorylation but not binding to NEMO. *Retrovirology*, BioMed Central, 2014, 11 (Suppl 1), pp.P102. inserm-00924969

HAL Id: inserm-00924969

<https://www.hal.inserm.fr/inserm-00924969>

Submitted on 7 Jan 2014

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



POSTER PRESENTATION

Open Access

TRAF5-mediated Tax ubiquitination modulates IKK phosphorylation but not binding to NEMO

Amandine Bonnet¹, Sabrina Pène¹, Laurence Bénit¹, Laetitia Waast¹, Ali Bazarbachi², Renaud Mahieux³, Claudine Pique^{1*}

From 16th International Conference on Human Retroviruses: HTLV and Related Viruses
Montreal, Canada. 26-30 June 2013

Tax is a powerful activator of the NF- κ B pathway, a property shown to be required for HTLV-1-induced immortalization of primary T lymphocytes. A pivotal step in the stimulation of this pathway is the activation of the cytoplasmic I κ B-kinase (IKK) complex, which consists of two catalytic subunits, IKK-alpha and beta and a regulatory subunit, IKK-gamma/NEMO. Previous studies showed that the ability of Tax to bind to and activate the IKK complex depends on its prior conjugation to ubiquitin. TRAF5, a member of the TNF Receptor-Associated Factor family, is an adaptor protein and E3 ubiquitin ligase which functions downstream various membrane receptors, notably for the activation of the NF- κ B pathway. Interestingly, TRAF5 was also shown to interact with the Epstein Barr Virus (EBV)-encoded LMP1 oncoprotein and to contribute to LMP1-induced IKK activation. In this study, we investigated whether TRAF5 could also be a functional partner of Tax. We found that overexpressing TRAF5 significantly increases endogenous Tax ubiquitination while conversely endogenous Tax ubiquitination is reduced upon siRNA-mediated TRAF5 silencing. Surprisingly, preventing TRAF5-mediated Tax ubiquitination by siRNA depletion of TRAF5 does not affect Tax binding to endogenous NEMO. However, Tax-induced phosphorylation of IKK-alpha/beta is significantly decreased in the same setting, which coincided with a decreased ability of Tax to activate a NF- κ B promoter. These findings reveal that TRAF5 mediates Tax ubiquitination for IKK activation and suggest that Tax binding to NEMO and Tax-induced IKK phosphorylation are regulated by distinct molecular determinants.

Authors' details

¹INSERM, U1016, Institut Cochin, CNRS, UMR8104, Université Paris Descartes, Sorbonne Paris Cité, Paris, France. ²Department of Internal Medicine, American University of Beirut, Beirut, Lebanon. ³Oncogenèse Rétrovirale, CIRI, INSERM U1111-CNRS UMR5308, Université Lyon 1, Ecole Normale Supérieure de Lyon, LabEx ECOFECT, Lyon, Cedex 07, France.

Published: 7 January 2014

doi:10.1186/1742-4690-11-S1-P102

Cite this article as: Bonnet *et al.*: TRAF5-mediated Tax ubiquitination modulates IKK phosphorylation but not binding to NEMO. *Retrovirology* 2014 11(Suppl 1):P102.

Submit your next manuscript to BioMed Central
and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



* Correspondence: claudine.pique@inserm.fr

¹INSERM, U1016, Institut Cochin, CNRS, UMR8104, Université Paris Descartes, Sorbonne Paris Cité, Paris, France

Full list of author information is available at the end of the article

