

## Letter to the Editor

### NMR assignment of human eukaryotic translation initiation factor 4E (eIF4E) in its cap-free form

DOI 10.1007/s10858-006-9051-8

In eukaryotes, the first step in translation initiation is the recognition of the 5'-terminal cap structure of the mRNA by the translation initiation factor eIF4E, a 25-kDa protein. This protein recruits the large scaffold factor eIF4G to the mRNA, and this mRNA-protein complex binds the 40S preinitiation complex. To date, only the structures of eIF4E in binary (cap-bound) or ternary complex were reported (reviewed in von der Haar et al., 2004); however, nothing is known about the underlying molecular mechanisms involved in recognition of cap-free eIF4E with its different partners. As a first step in providing the structural basis of the allosteric modulation of eIF4E activity, we initiated NMR structure and dynamic studies of the cap-free form of eIF4E. Substantial differences are observed in the NMR spectra between cap-free and cap-bound forms. Sequence-specific  $^1\text{H}$ ,  $^{13}\text{C}$  and  $^{15}\text{N}$  assignments were completed for about 95% of the backbone atoms. Most side chain atoms have also been assigned. The chemical shifts have been deposited in the BMRB (Accession No. 7115).

References: von der Haar et al. (2004) *Nature Struct. Mol. Biol.*, **11**, 503–511.

Laurent Volpon\*, Michael J. Osborne & Katherine L. B. Borden

*Institute of Research in Immunology and Cancer (IRIC), Department of Pathology and Cell Biology, Université de Montréal, Pavillon Marcelle-Coutu, 2950 Chemin Polytechnique, Montreal, Qc, H3T 1J4, Canada*

\*To whom correspondence should be addressed. E-mail: laurent.volpon@umontreal.ca

**Supplementary material** to this paper is available in electronic format at <http://dx.doi.org/10.1007/s10858-006-5051-8>.