

A case study: custom DUALhybrid screening (S01001)

The lab of Prof. Steve Jackson at Cambridge, UK was working on an uncharacterized protein called XRCC4. Relatively little was known about XRCC4, although the protein was implicated in DNA non-homologous end-joining (NHEJ), a DNA repair pathway. To find out more about XRCC4, the Jackson lab turned to Dualsystems for a DUALhybrid (yeast two-hybrid) screen.

Dualsystems screened XRCC4 for novel interactors and identified several previously unknown proteins that bound to XRCC4. Following up on the screen, the Jackson group could show that one of the interactors, termed XLF, is a novel component of the XRCC4-Ligase IV complex and plays an important role in NHEJ.

September, 2003

Dualsystems receives material for screening from Prof. Jackson's group at Cambridge University, UK

- » Dualsystems sequentially constructs two baits for screening
- » One construct is selected for the library screen
- » Clones from the screen are analyzed

February, 2004

Complete report and interacting clones delivered to Prof. Jackson
Prof. Jackson's group confirms interactions and conducts follow-up experiments

January, 2006

Publication of results by Prof. Jackson's group:
Ahnsgorg *et al.* (2006) XLF interacts with the XRCC4-DNA ligase IV complex to promote DNA nonhomologous end-joining. *Cell* 124, 301-313.

Other publications featuring DUALhybrid custom services

Molecular dissection of NRG1-ERBB4 signaling implicates PTPRZ1 as a potential schizophrenia susceptibility gene.
Buxbaum *et al.* *Mol. Psychiatry*. Apr 17 (2007) doi: 10.1038/sj.mp.4001991

Brain-type creatine kinase BB-CK interacts with the Golgi Matrix Protein GM130 in early prophase
Burklen *et al.* *Mol. Cell. Biochem.* **297**, 53-64 (2007)

Promyelocytic leukemia zinc finger protein localizes to the cochlear outer hair cells and interacts with prestin, the outer hair cell motor protein
Nagy *et al.* *Hearing Research* **204**, 216-222 (2005)

NEDD8 Ultimate Buster-1L Interacts with the Ubiquitin-like Protein FAT10 and Accelerates Its Degradation.
Hipp *et al.* *J. Biol. Chem.* **279** (16), 16503-16510 (2004)

S01001 Custom DUALhybrid screening services: Please visit www.dualsystems.com to obtain additional information!