

Results

374 Marta Riera et al.

- the CK2 alpha-subunit gene in *Arabidopsis*: effects on light-regulated gene expression and plant growth. *Plant Physiol.* **119**, 989–1000.
- Lin, W.-J., Sheu, G.-T. and Traugh, J.A. (1994) Effects of autophosphorylation on casein kinase II activity: evidence from mutations in the β subunit. *Biochemistry*, **33**, 6998–7004.
- Litchfield, D.W., Lozemann, F.J., Piening, C., Sommercorn, J., Takio, K., Walsch, K.A. and Krebs, E.G. (1990) Subunit structure of casein kinase II from bovine testis. *J. Biol. Chem.* **265**, 7638–7644.
- Litchfield, S.W., Lozman, F.J., Cicirelli, M.F., Harrylock, M., Ericsson, L.H., Piening, C.J. and Krebs, E.G. (1991) Phosphorylation of the beta subunit of casein kinase II in human A431 cells: identification of the autophosphorylation site and a site phosphorylated by p34cdc2. *J. Biol. Chem.* **266**, 20380–20389.
- Livak, K.J. (1990) Detailed structure of the *Drosophila melanogaster* stellate genes and their transcripts. *Genetics*, **124**, 303–316.
- Lüscher, B., Kuenzel, E.A., Krebs, E.G. and Eisenman, R.N. (1989) Myc oncproteins are phosphorylated by casein kinase II. *EMBO J.* **8**, 1111–1119.
- Maridor, G., Park, W., Krek, W. and Nigg, E.A. (1991) Casein kinase II: cDNA sequences, developmental expression, and tissue distribution of mRNA for α , α' and β subunits of the chicken enzyme. *J. Biol. Chem.* **266**, 2362–2368.
- Meggio, F., Boldyreff, B., Marin, O., Marchiori, F., Perich, J.W., Issinger, O.-G. and Pinna, L.A. (1992) Role of β subunit of casein kinase-2 on the stability and specificity of the recombinant reconstituted holoenzyme. *Eur. J. Biochem.* **204**, 293–297.
- Mizoguchi, T., Yamaguchi-Shinozaki, K., Hayashida, N., Kamada, H. and Shinozaki, K. (1993) Cloning and characterization of two cDNAs encoding casein kinase II catalytic subunits in *Arabidopsis thaliana*. *Plant Mol. Biol.* **21**, 279–289.
- Niefind, K., Guerra, B., Pinna, L.A., Issinger, O.-G. and Schomburg, D. (1998) Crystal structure of the catalytic subunit of protein kinase CK2 from *Zea mays* at 2.1: a resolution. *EMBO J.* **17**, 2451–2462.
- Padmanabha, R., Chen-Wu, J.L.P., Hanna, D.E. and Glover, C.V.C. (1990) Isolation, sequencing, and disruption of the CKA2 gene: casein kinase II is essential for viability in *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* **10**, 4089–4099.
- Peracchia, G., Jensen, A.B., Culianez-Macià, F.A., Grossset, J., Goday, A., Issinger, O.-G. and Pagès, M. (1999) Characterization, subcellular localization and nuclear targeting of casein kinase II from *Zea mays*. *Plant Mol. Biol.* **40**, 199–211.
- Plana, M., Itarte, E., Eritja, R., Goday, A., Pagès, M. and Martinez, M.C. (1991) Phosphorylation of maize RAB-17 protein by casein kinase 2. *J. Biol. Chem.* **266**, 22510–22514.
- Reed, J.C., Bidwai, A.P. and Glover, C.V. (1994) Cloning and disruption of *CKB2*, the gene encoding the 32 kDa regulatory β' -subunit of *Saccharomyces cerevisiae* casein kinase II. *J. Biol. Chem.* **269**, 18192–18200.
- Roux, S.J. (1993) Casein kinase-2-type protein kinases in plants: possible targets of polyamine action during growth regulation? *Plant Growth Regul.* **12**, 193–197.
- Saxena, A., Padmanabha, R. and Glover, C.V.C. (1987) Isolation and sequencing of cDNA clones encoding the alpha and beta subunits of *Drosophila* casein kinase II. *Mol. Cell. Biol.* **7**, 3409–3417.
- Seldin, D.C. and Leder, P. (1995) Casein kinase II alpha transgene-induced murine lymphoma: relation to theileriosis in cattle. *Science*, **267**, 894–896.
- Sugano, S., Andronis, C., Green, R.M., Wang, Z.-Y. and Tobin, E.M. (1998) Protein kinase CK2 interacts with and phosphorylates the *Arabidopsis* circadian clock-associated 1 protein. *Proc. Natl Acad. Sci. USA*, **95**, 11020–11025.
- Sugano, S., Andronis, C., Ong, M.S., Green, R.M. and Tobin, E.M. (1999) The protein kinase CK2 is involved in regulation of circadian rhythms in *Arabidopsis*. *Proc. Natl Acad. Sci. USA*, **96**, 12362–12362.
- Vilk, G., Saulnier, R.B., St. Pierre, R. and Litchfield, D.W. (1999) Inducible expression of protein kinase CK2 in mammalian cells. *J. Biol. Chem.* **274**, 14406–14414.

GenBank accession numbers AF239816, AF239817, AF239818 and AF239819.