

Biochemical and cellular characteristics of the four splice variants of protein kinase CK1 δ from zebrafish (*Danio rerio*)

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Protein kinase CK1 (previously known as casein kinase I) conforms to a subgroup of the great protein kinase family found in eukaryotic organisms. The CK1 subgroup of vertebrates contains seven members known as δ , ϵ , ζ 1, ζ 2, ζ 3, η and θ . The CK1 δ gene can generate four variants (CK1 δ , CK1 δ S, CK1 δ L, and CK1 δ LS) through alternate splicing, characterized by the presence or absence of two additional coding sequences. Exon "L" encodes a 28-amino acid stretch that is inserted after lysine 152, in the center of the catalytic domain. The "S" insert encodes 12 amino acid residues and is located close to the carboxyl terminus of the protein. This work reports some biochemical and cellular properties of the four CK1 δ variants found to be expressed in zebrafish (*Danio rerio*). The results obtained indicate that the presence of the "L" insert affects several biochemical properties of CK1 δ : (a) it increases the apparent K_m for ATP twofold, from, ≈ 30 to ≈ 60 μ M; (b) it decreases the sensitivity t