

CLONING OF A cDNA ENCODING PLASTID TERMINAL OXIDASE IN *Vigna unguiculata*.

Sousa, FYM¹; Costa JH¹, Saraiva, LFM¹ and Fernandes de Melo D¹.

¹Departamento de Bioquímica e Biologia Molecular – Universidade Federal do Ceará – Fortaleza, Brasil.

Plastid terminal oxidase (PTOX) as alternative oxidase (AOX) is a related quinol oxidase associated to photosynthetic electron transport chain and is also encoded by a nuclear gene. PTOX appears limited to organisms capable of oxygenic photosynthesis including cyanobacteria, algae and plants. PTOX is a thylakoid membrane protein that couples oxidation of plastoquinol with the reduction of oxygen to water, providing an electron sink, playing a supporting role in photosynthesis and plastid metabolism in the dark. The purpose of the present work was to clone a cDNA encoding PTOX in *V. unguiculata* cv. Vita 5 leaves. The seeds of *V. unguiculata* were germinated in water and after 3 days the seedlings were transferred to Hoagland's medium and grown in green house. Total RNA was isolated from 7-day-old seedling leaves. Degenerated primers designed from conserved regions of several PTOX cDNAs were used in RT-PCR assay. A cDNA fragment with expected length of 1002 bp was cloned in a plasmid vector and several clones were purified and sequenced. After sequencing, all clones were identical and showed high identity with plant PTOX cDNAs. This finding puts *V. unguiculata* in a restricted group of plant which the PTOX has been identified.

Supported by: Funcap, CNPq e CAPES