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THE DISSOCIATION OF A NUCLEOSIDE PHOSPHATE-STIMULATED HISTONE PHOSPHATASE FROM CANINE HEART. Kwang-Jen Hsiao* and Heng-Chun Li*.(Spon: J.D. Chanley) Dept. of Biochemistry, Mt. Sinai School of Medicine, CUNY, New York, N.Y. 10029

A nucleoside phosphate-stimulated histone phosphatase (HPTase B, M.W.=160,000) isolated from canine heart extracts could be dissociated by treating with ethanol into a catalytic subunit(PPTase S, M.W.=35,000). The dissociation was accompanied by an increase in activity and by a pronounced change in catalytic properties. HPTase B and PPTase S exhibited different substrate saturation kinetics, pH profile and responded differently to nucleoside phosphate and salt. The increased activity toward p-histone accompanying the dissociation of HPTase B reflected loss of substrate inhibition. Nucleoside phosphate and salt greatly stimulated HPTase B activity by interacting with p-histone, indicating that modification at substrate level represented an important regulatory mechanism. By contrast, PPTase S was slightly stimulated by salts and was inhibited by nucleoside phosphate. The higher sensitivity of HPTase B than PPTase S to the conformational state of its substrate indicated that regulatory properties of HPTase B were lost following it dissociation. (Supported by Grants from New York Heart Assoc. and USPHS NIH Grant GM 19271).

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3