Waters
Lab Highlights

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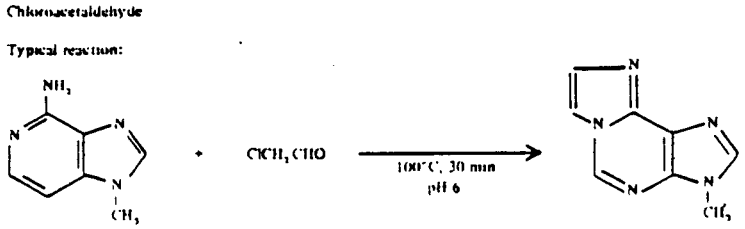
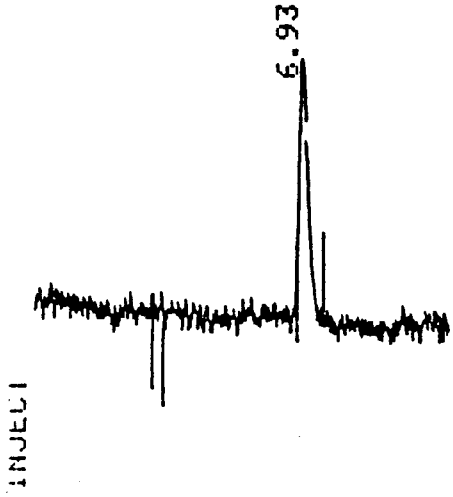
ANALYSIS OF PICOMOLE QUANTITIES OF ADENOSINE

Adenosine, an important nucleoside in physiological systems, influences coronary and cerebral circulation, cyclic AMP regulation, neurotransmission, platelet aggregation, and immunodeficiency disease [1]. The analysis of physiological levels of adenosine compounds has been hampered by the necessarily low detection limits required. Detection is enhanced by first derivatizing adenosine with chloracetaldehyde according to the reaction below to form a highly fluorescent compound which enables detection limits to be attained at the



2 picomole range. Although the excitation maximum for the adenosine derivative is approximately 275 nm, very sensitive detection is also obtained by utilizing the strong 254 nm excitation line of the mercury lamp and detection at 400 nm.



Column: μBONDAPAK™ C_{18} (60 cm X 3.9 mm)

Eluent: CH_3OH/50 mM KH_2PO_4 (25:75)
pH adjusted to 7.5

Flow Rate: 1.0 ml/min.

Detector: Model 420
Hg lamp
Ex: 254 nm band-pass
Em: 400 nm long-pass
Gain: 128X

Robert Burgoyne

1. J. F. Kuttesch, et al., J. Liquid Chromatogr. 1(1), 97-109 (1978).