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Application of "Dispersive Liquid-Liquid Micro Extraction Technique" for the Analysis of Piroxicam in Human Urine and Drug Formulation

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Abstract:- "Non-Steroidal Anti-inflammatory Drugs" (NSAIDs) are one of the most utilized sets of medicines in dentistry for the treatment of chronic and acute pain. Their therapeutic toxicity and effectiveness are well-documented. Demonstrating that NSAIDs give an appropriate therapeutic ratio of aching relief with fewer side effects than the opioid-mild pain-relieving combination medicines, they have essentially supplanted for dental uses. Many studies showed that by using the oral surgery model of acute pain, the single dosage of a NSAID is more efficacious than a combination of acetaminophen plus an opioid or aspirin with less side effects, making it the better choice for ambulatory patients. The combination of a "NSAID" with an opioid produces minimal analgesic efficacy but a higher rate of adverse effects, limiting its usage to individuals for whom the "NSAID" only provides insufficient analgesia.

"4–hydroxy–2–methyl–N–2–pyridinyl–2H–1,2–benzothiazine–3–carboxamide1,1–dioxide (PX)", is known as Piroxicam. It is non–steroidal anti–inflammatory and pain-relieving chemical that belongs to the oxicams, a novel family of pharmaceuticals. It's commonly utilised in dealing rheumatoid arthritis sufferers. Piroxicam is also called (NSAID), it relates to the oxicam family of drugs and is a Cyclooxygenase-1 (Cox-1) inhibitor. Piroxicam is a whitish colour crystalline substance found in nature. It is just marginally soluble in alcohols and is sparsely miscible in water, dilute acid, and organic solvents.

The advancement of accurate, sensitive, quick, secure, and automated analytical techniques of monitoring environmental has received a lot of attention in recent decades. Several analytes must be determined at trace levels in such applications. Despite extensive technical advancements, mainly analytical equipment does not allow direct assessment of the real ambient matrix composition. Furthermore, only few of sensitive testing methods enough to identify trace contaminants directly are present. In many situations, a preparatory step of analyte isolation, enrichment is necessary to analysis.

I. INTRODUCTION

Piroxicam

"4–hydroxy–2–methyl–N–2–pyridinyl–2H–1,2–benzothiazine–3–carboxamide1,1–dioxide (PX)", is known as Piroxicam. It is non–steroidal anti–inflammatory and pain-relieving chemical that belongs to the oxicams, a novel family of pharmaceuticals. It's commonly utilized in dealing rheumatoid arthritis sufferers. Piroxicam is also called (NSAID), it relates to the oxicam family of drugs and is a Cyclooxygenase-1 (Cox-1) inhibitor. Piroxicam is a whitish colour crystalline substance found in nature. It is just marginally soluble in alcohols and is sparsely miscible in water, dilute acid, and organic solvents [1].

In comparison to indomethacin, its efficacy (weight-for-weight) in non-specific animal models of inflammation was higher. Piroxicam is very powerful (weight-for-weight) than ibuprofen, naproxen, fenoprofen, phenylbutazone or aspirin as an analgesic. Piroxicam 20 milligram everyday led to less fecal blood loss in humans in early trials compare to the aspirin 3.8 gram daily. Piroxicam drug like many other non-steroidal anti-inflammatory medications, suppresses collagen-induced platelet and adenosine di-phosphate accumulation in the secondary phase. Piroxicam inhibits prostaglandin production in vitro and in vivo, and in the phase of arachidonic acid metabolism, cyclo-oxygenase behave as a selective reversible inhibitor [2].

Piroxicam has a longer plasma half-life than these agents, according to pharmacokinetic studies. When piroxicam is evaluated in the carrageenan rat paw oedema model, it showed potency similar to indomethacin. An intact adrenocorticoid system is not required for this action. Piroxicam's strong potency, long half-life, and lack of cardiovascular or central nervous system side effects have prompted clinical trials [3].