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Influence of high temperature on separation some pharmaceutical compounds using a water rich on C18 stationary phases using high performance liquid chromatography

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The influence of agilent C18 stationary phases on the separation of ibuprofen, naproxen and ketoprofen compounds with a water rich mobile phase over high temperature has been critically investigated. The Van't Hoff relationships between the retention factors and reciprocal temperature were found to depend on the range of temperature used. The thermodynamic parameters of the separation step were calculated. Different parameters as flow rate, types of organic modifier, injection volume and types of buffer investigated. The method was suitably validated and successfully applied to the determination of ketoprofen, naproxen, and ibuprofen in several analgesic/antiphlogistic pharmaceutical formulations. The method has been validated according to accuracy, precision, specificity and linearity and reproducibility.

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