



## Comparative study of the Enantio Selective Separations of Pioglitazone and Pioglitazone Degradation Products by Ultra Performance Convergence Chromatography (UPC<sup>2</sup>) and Supercritical Fluid Chromatography

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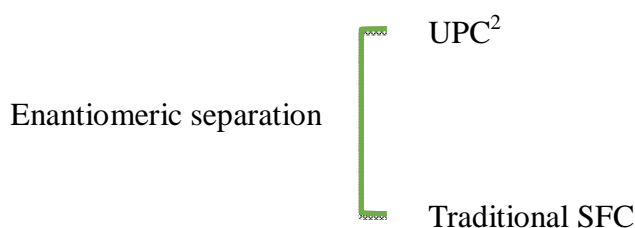
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### ABSTRACT

Pioglitazone hydrochloride is thiazolidinedione class of drug and it is used to treat type 2 diabetes. Pioglitazone, Pioglitazone peroxide degradation product referred as DP-PIO-A, Pioglitazone base degradation product referred as DP-PIO-B possess stereogenic centres and rapid, reliable and precise enantiomeric ratio was determined by using Ultra Performance Convergence Chromatography (UPC<sup>2</sup>). The effect of different co solvents such as 2-propanol, ethanol and methanol on the resolution and retention time was studied as well as the presence of additives in the mobile phase. All the compounds were enantiomerically well separated in UPC<sup>2</sup> with less than 5 min and method was compared with traditional Super Critical Fluid Chromatography (SFC).

### Graphical Abstract



**Keywords:** Pioglitazone, Pioglitazone degradation products, Enantiomeric separation, UPC<sup>2</sup> and Super Critical Fluid Chromatography (SFC).