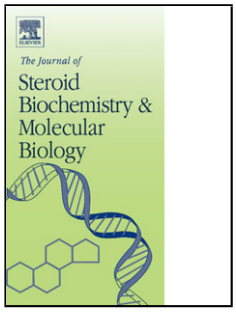

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Clinical Diagnostic tools for vitamin D assessment

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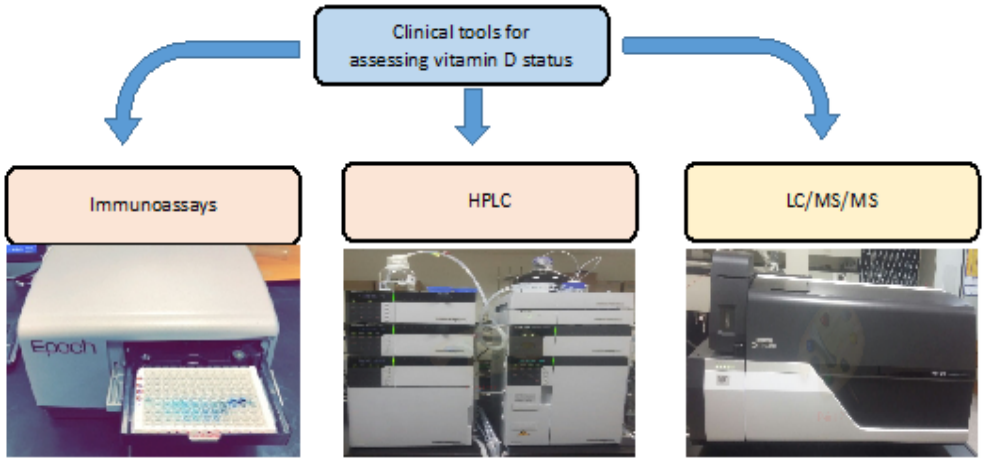
Graphical Abstract



Highlights:

- Automated immunoassays can be performed in a rapid, high throughput manner and offer excellent sensitivity with a detection range of 3.4 to 156 ng/ mL, however, they cannot distinguish between the various forms of vitamin D.
- HPLC based assays are cheaper and cost-effective, but they are not very sensitive for minor Vitamin D metabolites.
- LC/MS/MS also provides excellent level of sensitivity and a wide dynamic range from 0.068 pg/mL to 100 ng/ml, in addition to accurate metabolite identification.
- A huge limitation with LC/MS/MS is their poor throughput for sample analyses making them impractical for rapid, large-scale analyses.
- Recently, attention has been focused on accurately measuring various active and inactive epimers and isobars of vitamin D.