

Rationale





### Development and Evaluation of an LC-MS/MS Method for Therapeutic Drug Monitoring of Infliximab for Use in the Routine Clinical Laboratory

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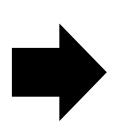
IFX drug levels and anti-drug

antibody (ADA) levels are most commonly measured via ELISA

Typically, ELISAs are not drug or ADA tolerant and therefore patients can test negative on both assays

This represents a gap in knowledge for the clinician and leads to poorer patient outcomes

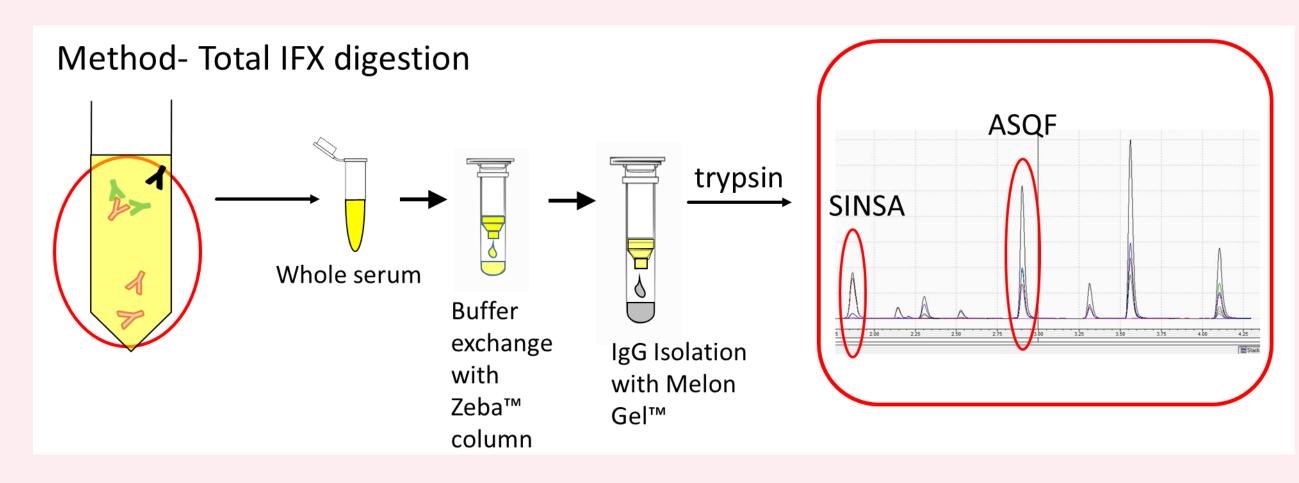
LC-MS/MS assays have been developed to detect both Free ('unbound') and Total IFX ('bound' and 'unbound') in serum/plasma.



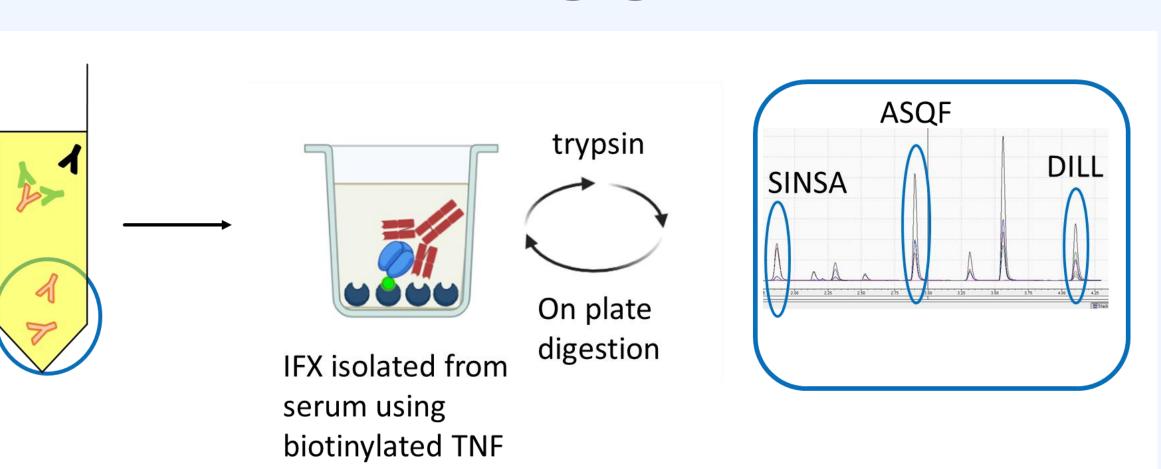
No studies have compared results of Free and Total IFX to examine 'bound' IFX. Measurement of 'bound' IFX may lead to the early detection of ADAs in the presence of IFX and improved patient outcomes.

### TOTAL IFX MEASUREMENT

# FREE IFX MEASUREMENT

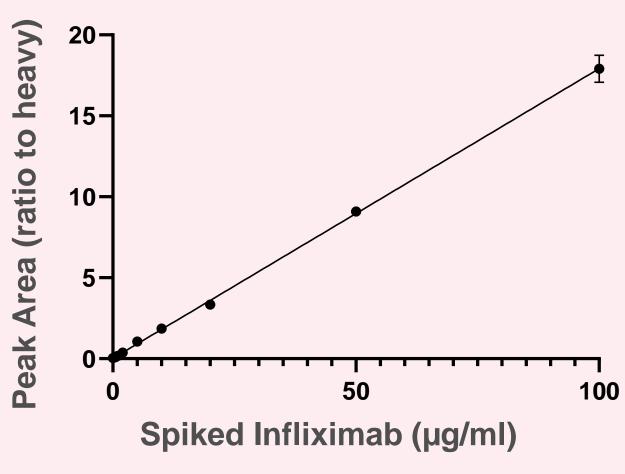


Methods in summary



### Results

#### Standard curve for total IFX measured in serum

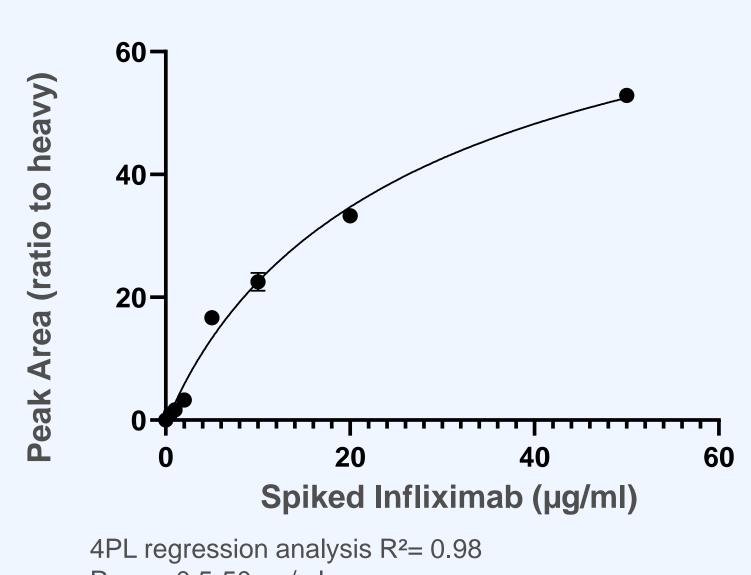


Linear regression analysis R<sup>2</sup>= 0.998 Range 0.5-100 µg/ml Inter-assay CV= 12% Intra- assay CV < 4%

Bound IFX can be detected using a comparison of Free and Total IFX measured by LC-MS/MS. This paves the way for indirect detection of ADAs and thus improved outcome for patients on IFX therapy.

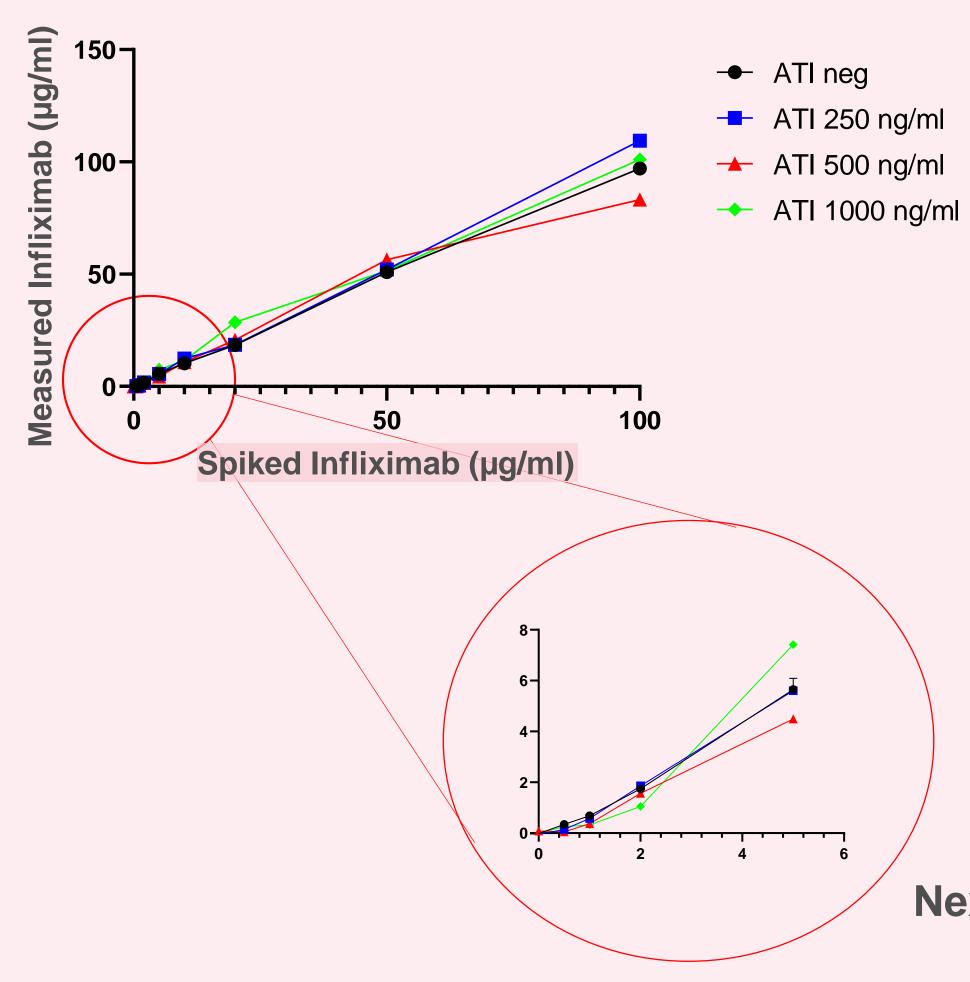
# Results

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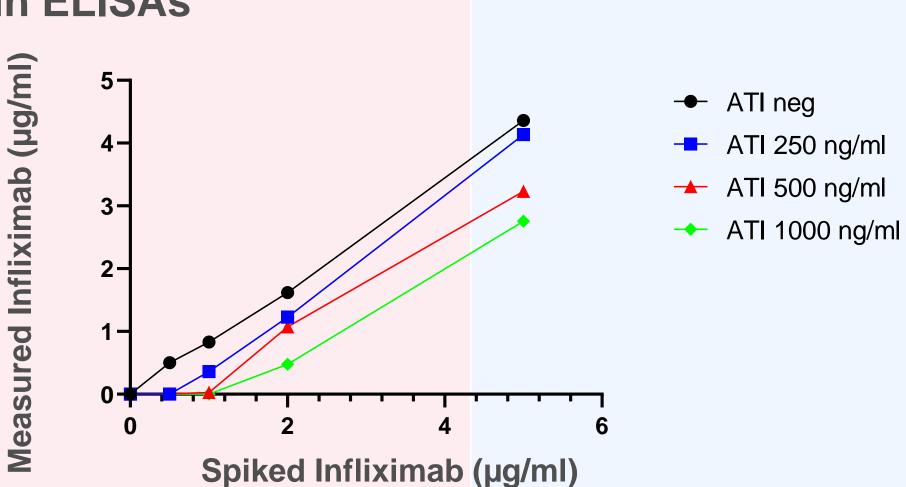


Range 0.5-50 µg/ml Inter-assay CV= 12% Intra- assay CV < 8%

#### Comparison of measured IFX in the presence of **ADAs in serum using Total IFX assay**

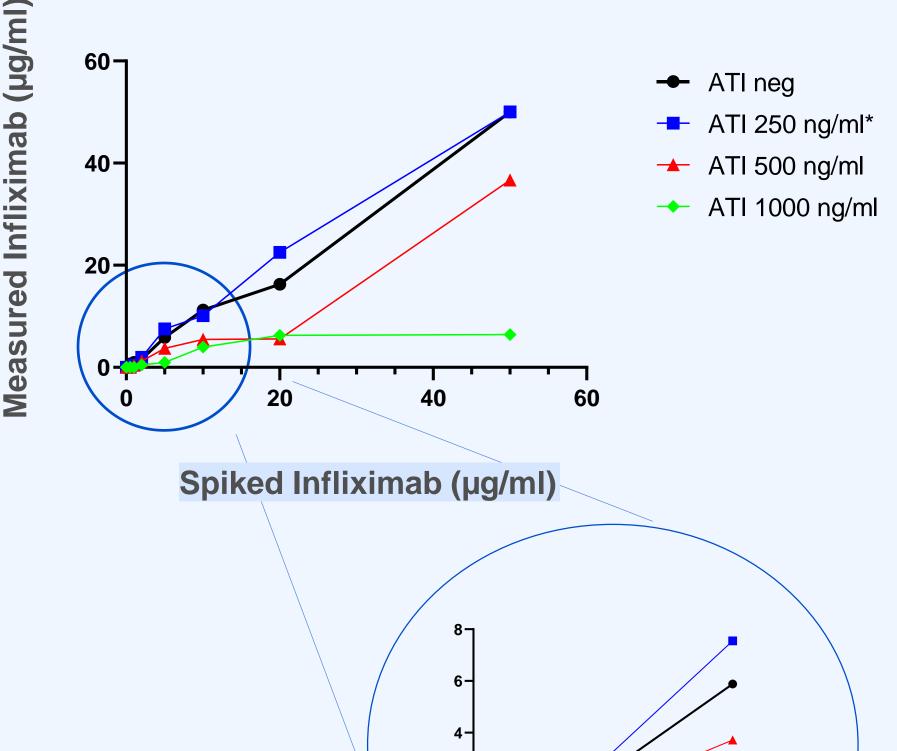


Effect of ADAs on Infliximab measurement in ELISAs



Next steps- comparison of patient samples testing negative on both IFX and ADA Immunoassays

Comparison of measured IFX in the presence of ADAs in serum using Free IFX assay





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