

Salivary Biomarkers in SLE

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Abstract

Background

Lupus Nephritis (LN) affects close to half of all SLE patients and is currently diagnosed through kidney biopsy. In search for a noninvasive diagnostic method, four serum biomarkers of SLE (IGFBP2, sTNFR2, Axl, VCAM1) were evaluated for their diagnostic potential in the saliva of SLE patients.

Methods

IGFBP2, sTNFR2, Axl, VCAM1 were ELISA assayed in the serum and saliva of SLE patients (16 inactive, 10 active non-renal, 10 active renal) and 14 healthy controls. Group wise analysis by Mann Whitney test and Spearman correlation analyses between serum and saliva were done.

Results

IGFBP2 was elevated in SLE serum compared to controls (FC=3.2 P=0.0002) while sTNFR2 and VCAM1 showed elevation in active compared to inactive SLE (FC=2.2 P=0.002 and FC=2.8 P<0.0001 respectively). Salivary IGFBP2 and sTNFR2 were elevated in SLE compared to controls (FC=2.4 P=0.01, FC=2.8 P=0.04 respectively), but was not associated with disease activity or renal involvement. Saliva and serum biomarkers did not correlate in this sample cohort.

Conclusion

Although all four biomarkers (IGFBP2, sTNFR2, Axl, VCAM1) have shown diagnostic potential in SLE serum, only IGFBP2 and sTNFR2 were elevated in SLE saliva. Further exploration into other salivary biomarkers through an unbiased aptamer based protein screening platform is in progress.

Methods

ELISA

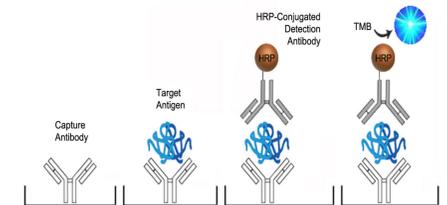
IGFBP2, sTNFR2, Axl, VCAM1 were ELISA assayed in the serum and saliva of SLE patients

- 16 inactive
- 10 active non-renal
- 10 active renal
- 14 healthy controls

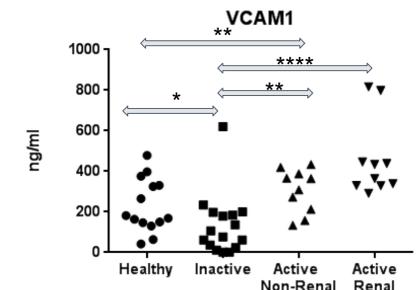
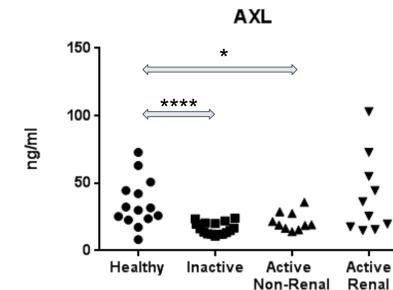
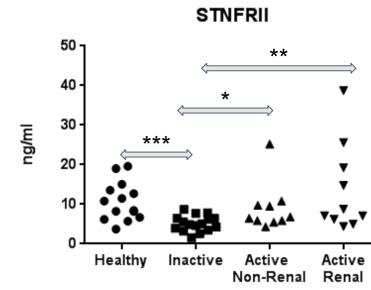
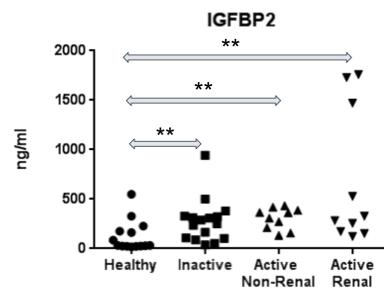
Data Analysis

- Group wise analysis
- Mann-Whitney test
 - Spearman correlation analyses between serum and saliva

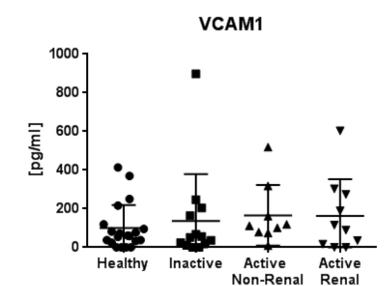
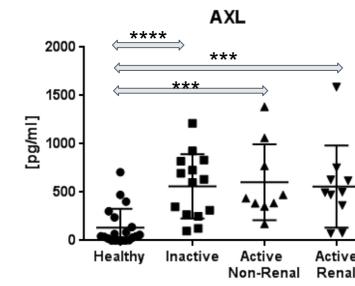
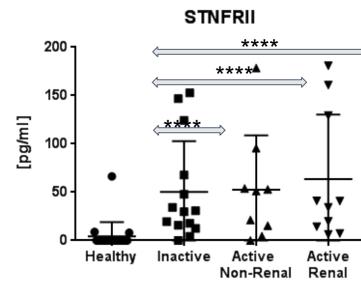
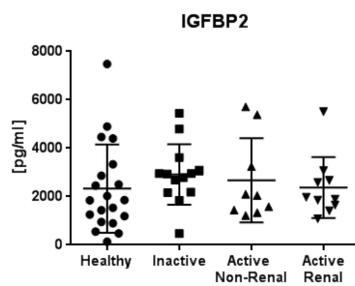
Overview of ELISA Methodology



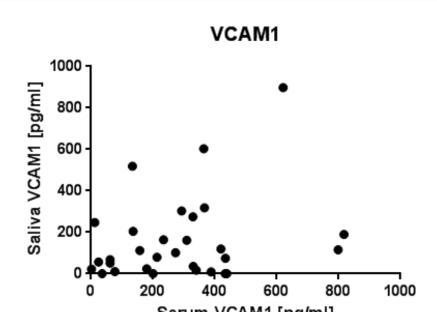
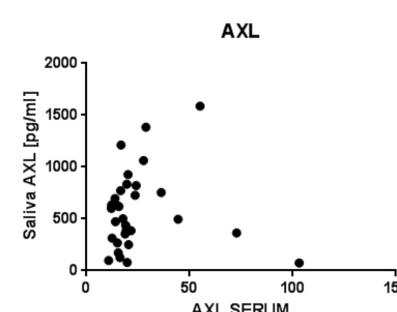
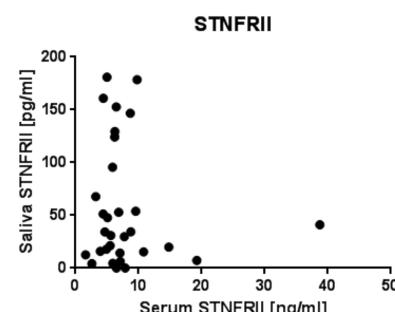
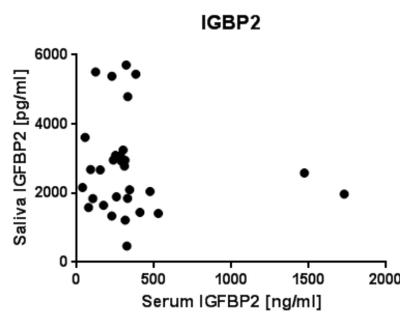
Serum Levels of 4 SLE Biomarkers



Salivary Levels of 4 SLE Biomarkers



Correlation of SLE Biomarkers between Saliva and Serum



Conclusions

Although all four biomarkers (IGFBP2, sTNFR2, Axl, VCAM1) were elevated in SLE serum, only Axl and sTNFR2 were elevated in SLE saliva, but could not distinguish active/inactive SLE. Further exploration into other salivary biomarkers through an unbiased aptamer based protein screen is in progress.

References

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