The authors have declared no conflicts of interest.

**Disclosure statement:** The authors have declared no conflicts of interest.

**ABSTRACT 3  BSPAR169**

**AUTOANTIBODIES PREDICTIVE OF UVEITIS IN JUVENILE IDIOPATHIC ARTHRITIS (APERTURE): A PROOF OF CONCEPT STUDY**

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**Method:** Nucleic Acid Programmable Protein Array (NAPPA) enables the production of multiple proteins from DNA templates which are immobilized on a solid phase. These can then be probed for the presence of autoantibodies in patient’s serum. NAPPA slides with 2200 genes were produced. PubMed search identified ~60 genes associated with uveitis pathology and ~30 genes associated with arthritis development. The remaining ~2100 genes were randomly identified from a ~12 000 human gene collection (http://dnasu.a-su.edu) (Fig. 1). The arrays were then probed using plasma from JIA patients with (n = 20) and without uveitis (n = 20) and from healthy age and sex matched controls (n = 20).

**Results:** Quantitative reproducibility of NAPPA was demonstrated with > 0.95 intra-array and inter-array correlations. Differences in the levels of potential autoantibodies were revealed between JIA patients with and without uveitis. Patients were segregated into two clinical subtypes with distinct antibody signatures by unsupervised hierarchical cluster analysis.

**Conclusion:** The NAPPA platform has the potential to identify novel autoantibodies that robustly forecast the development of uveitis in children with Juvenile idiopathic arthritis. This predictive tool could enable the development of a more appropriate, effective and efficient clinical management algorithm.

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