Results Bulk flow sorted cell populations (CD45, epithelial) from kidney samples can separate LN from controls based on gene expression. IFN stimulated genes were differentially expressed in renal CD45 LN cells. Analysis of single cells sorted from 4 LN kidney biopsies revealed major differences in infiltrates composition, with 2 samples demonstrating a high percentage of B cells (average of 18% compared to no B cells in the other 2 samples) and CD4 T cells (18% vs 8%), and low percentage of CD8 T cells (9% vs 23%). A high transcriptomic lupus interferon signature was detected in urine CD45 cells. Distinct infiltrates and distinct expression profiles were detected across patients.

Conclusions The PEARL-Phase 0 project shows the feasibility of single cell isolation and transcriptomic analysis from LN kidney and urine. Analyses at a bigger scale in the two next phases of the project will accelerate discovery of new therapeutic targets and identification of biomarkers to guide therapeutic decisions in lupus nephritis and integrate the treatment effect.

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265 | THE EXPRESSION OF SIGLEC-10 IS ELEVATED ON B LYMPHOCYTES AND ASSOCIATED WITH DISEASE ACTIVITY IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background and aims Siglec-10 (sialic acid-binding immunoglobulin-like lectins-10) is a member of Siglecs family and known to be expressed on B cells to regulate immune tolerance. This study aimed to investigate the expression of Siglec-10 on B cells of SLE and evaluate anti-inflammatory and immunosuppressive drugs impact on the expression of Siglec-10 on B cells *in vitro*.

Methods Peripheral blood mononuclear cells (PBMC) were obtained from patients with SLE (n=57) and healthy donors (n=30). Flow cytometry was performed to examine the expression of Siglec-10 on B cells. The potential association of these measures with the values of SLE disease activity index (SLEDAI) score was also analysed. *In vitro* cultivation of PBMC with Dexamethasone sodium phosphate and chloroquine phosphate , the expression of Siglec-10 on B cells were detected by flow cytometry after 16 hour.

Results The expression of Siglec-10 on B cells was significantly increased in SLE patients compared with normal controls (p<0.001). Moreover, it was positively correlated with SLE-DAI (OR=0.277, p<0.05) and elevated in non-treatment patient than patients after anti-rheumatic treatment (p<0.05). *In vitro* assay, Dexamethasone sodium phosphate and chloroquine phosphate could significantly decreased the expression of Siglec-10 on B cells respectively(p<0.05).

Conclusions The results from this study imply that Siglec-10 may play a potential role in progression and pathogenesis of SLE, which may represent a therapeutic target in SLE patients.

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266 | HUMAN AUTOANTIBODIES FROM CHILDREN WITH MOVEMENT AND PSYCHIATRIC DISORDERS TARGET THE EXTRACELLULAR N-TERMINUS OF DOPAMINE-2 RECEPTOR

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Background and aims We recently identified dopamine-2 receptor (D2R) autoantibodies in children with autoimmune movement and psychiatric disorders. This supported the hypothesis that a subgroup of patients may be autoimmune-mediated. However, the target epitope(s) remain unknown.

Methods Human D2R mutants modified in their extracellular domains were subcloned, and we analysed the region bound by 35 anti-D2R antibody-positive patient sera using quantitative flow cytometry on live transfected cells.

Results No anti-D2R antibody-positive patient sera bound to the three extracellular loops, but all patient sera (35/35) targeted the extracellular N-terminus. Overall, patient antibody binding was dependent on two main regions encompassing amino acids 20 to 29, and 23 to 37. Residues 20 to 29 contributed to the majority of binding (77%, 27/35), among which 26% (7/27) sera bound to amino acids R20, P21, and F22, 37% (10/27) patients were dependent on residues at positions 26 and 29, that are different between humans and mice, and 30% (8/27) sera required R20, P21, F22, N23, D26, and A29. Seven patient sera bound to the region 23 to 37 independently of D26 and A29, but most sera exhibited N-glycosylation-independent epitope recognition at N23. Interestingly, no evident segregation of binding pattern according to patient clinical phenotype was observed.

Conclusions We report a major biological role for D2R extracellular N-terminus as a regulator of receptor surface availability, and as a major epitope targeted and impaired in brain autoimmunity. This knowledge could help the design of novel specific immune therapies tailored to improve patient outcome.

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267 | NOVEL AUTOANTIBODIES AGAINST THE INTERFERON-RESPONSIVE MAJOR VAULT PROTEIN (MVP) IN SYSTEMIC LUPUS ERYTHMATOSUS

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Background and aims Autoantibody reactivity patterns are important disease and risk stratification marker in systemic lupus erythematosus (SLE). We have recently identified autoantibodies against the major vault protein (MVP) in SLE. Although the exact biological function of MVP is not well understood, MVP is an interesting autoantibody target, because it plays a pivotal role in virus-induced host response. MVP expression is induced by IFNγ and induces upregulation of interferon (IFN) type I expression.

Methods Anti-MVP antibodies were discovered by high-content autoantibody profiling and validated in >700 SLE samples and autoimmune disease controls. To enable the development