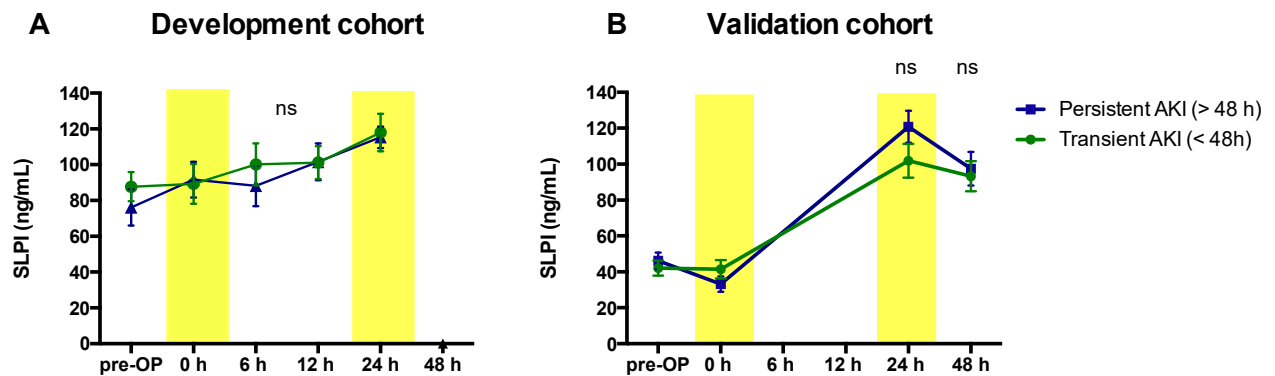
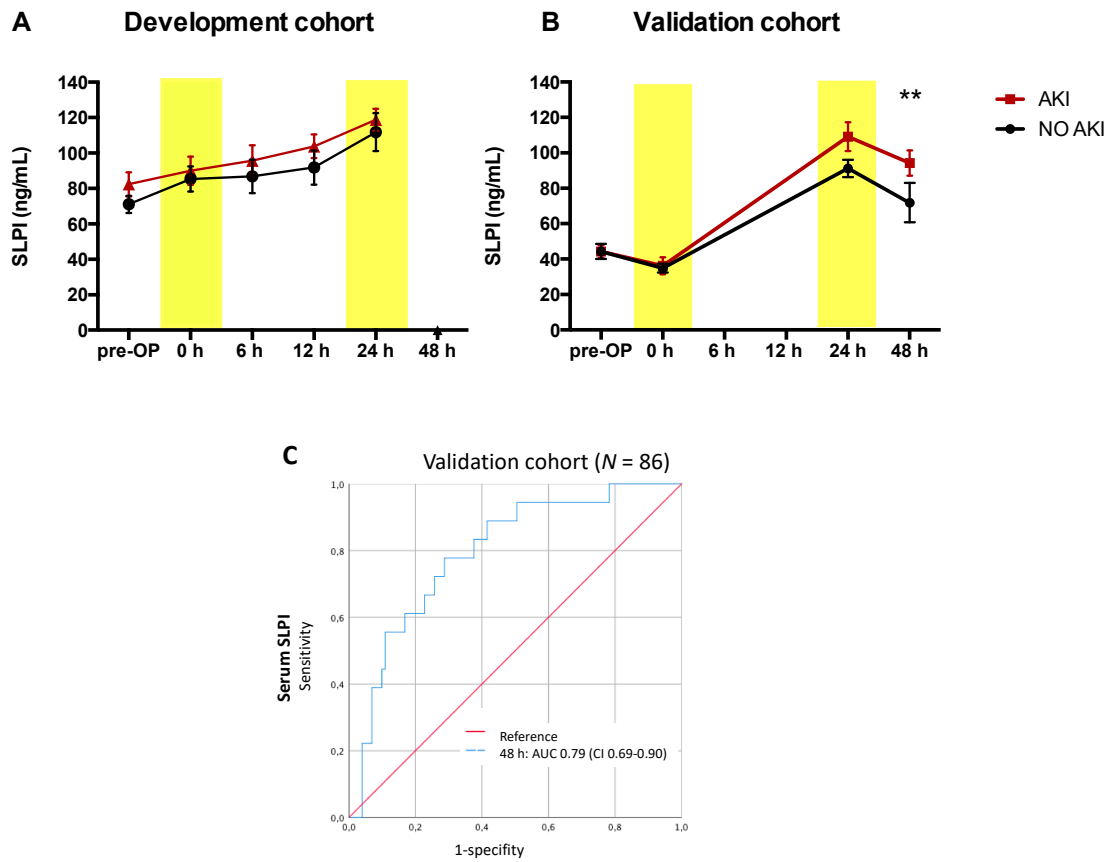


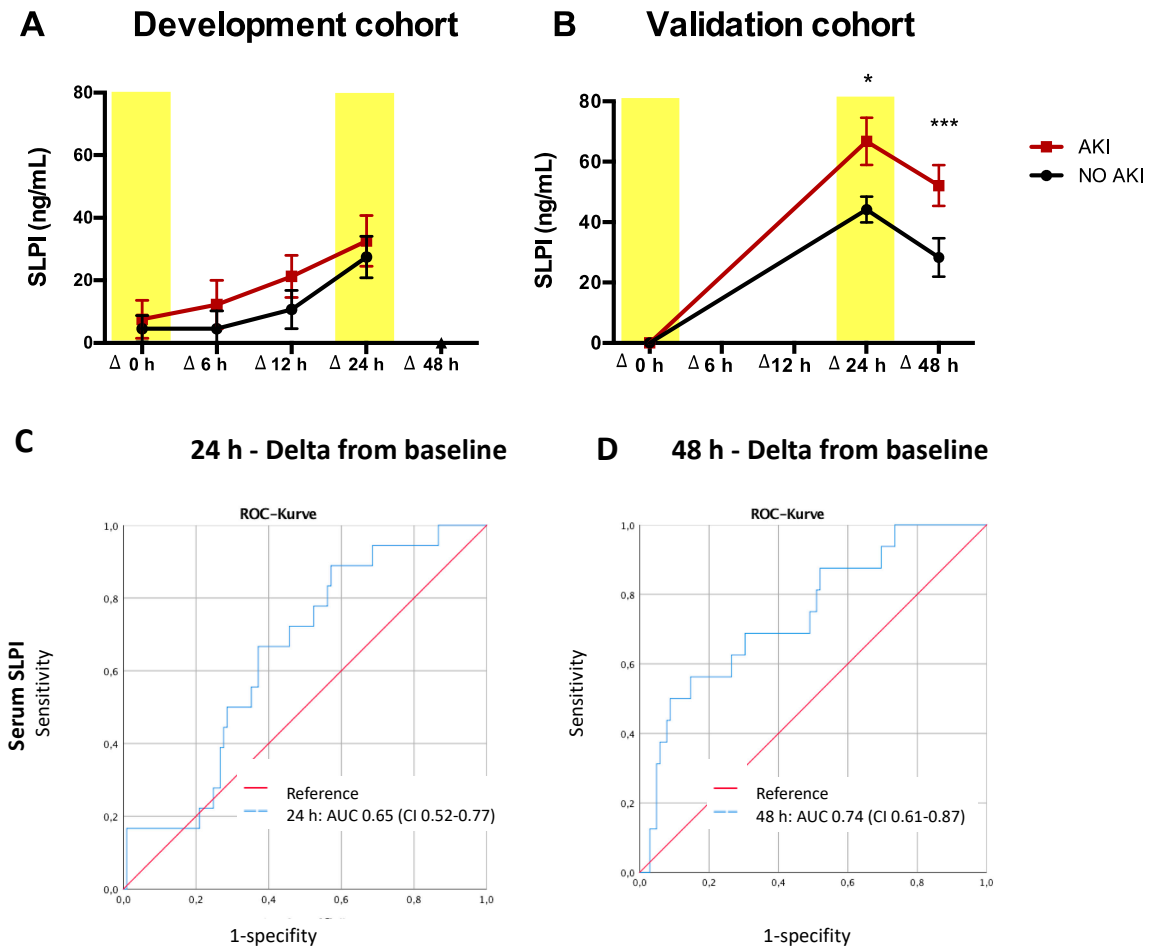
## Supplementary Materials



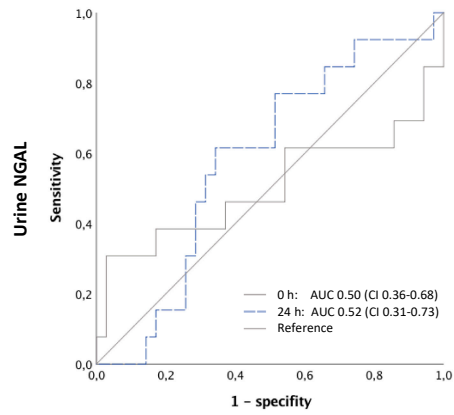
**Figure S1.** Comparison of serum SLPI in patients affected by transient AKI (< 48 hours) versus persistent AKI (> 48 hours) in the (A) development cohort and (B) validation cohort. SLPI, secretory leukocyte protease inhibitor. Data are means  $\pm$  SEM; *P*-values versus other groups at the corresponding time point (24 h after surgery) (difference between groups) analyzed by Mann-Whitney *U* test.



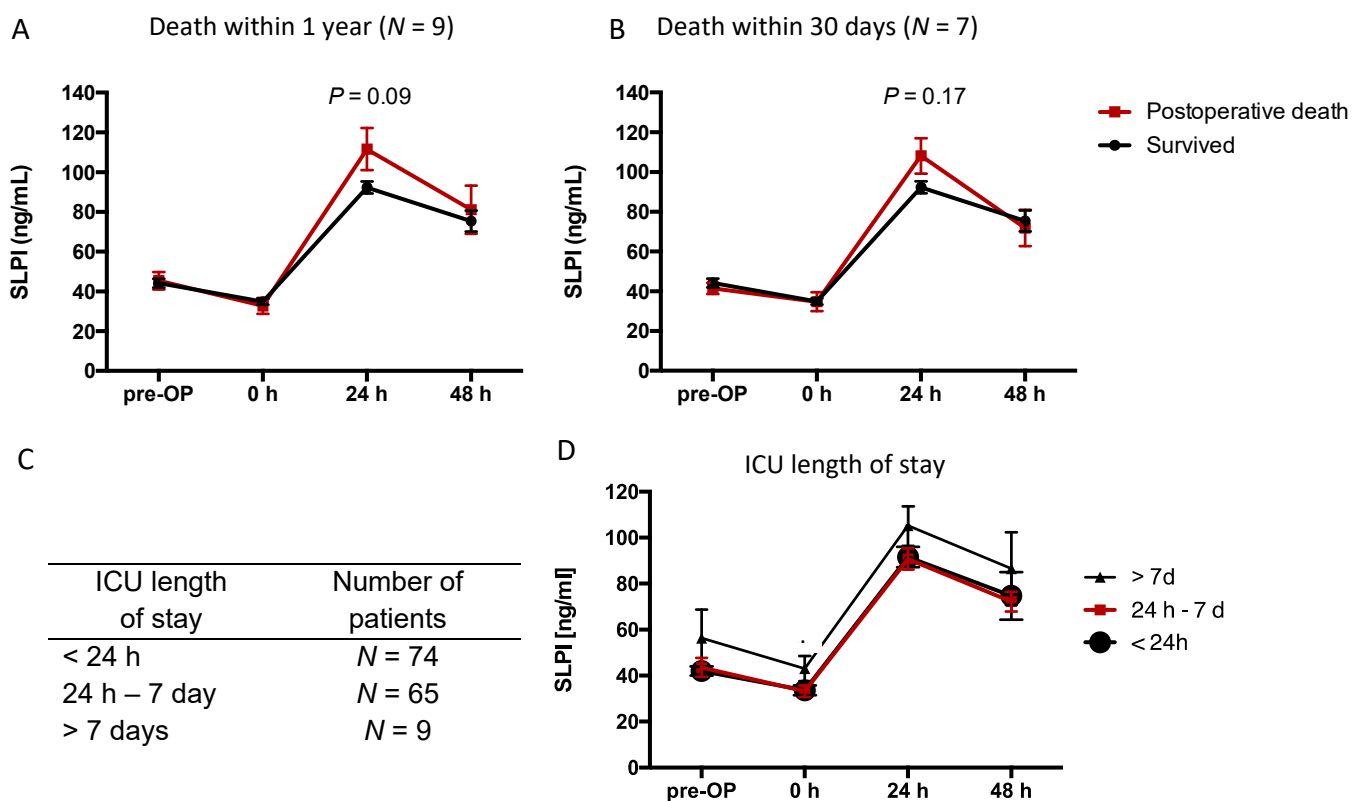
**Figure S2. Diagnostic accuracy of serum SLPI in patients “at risk” as identified by Cleveland Clinic Foundation Score.** Comparison of perioperative serum SLPI in patients identified as “at risk” by Cleveland Clinic Foundation Score  $\geq 3$ . In these subgroups the incidence of AKI was 35% (13/37) in the development cohort (A) and 15% (13/86) in the validation cohort (B). (C) Receiver operating characteristic (ROC) curve of serum SLPI for the diagnosis of AKI 48 hours after surgery (validation cohort). AKI, acute kidney injury; AUC, area under the curve; CI, 95% confidence interval; SLPI, secretory leukocyte protease inhibitor. (A and B)  $P < 0.01$  versus other groups at the corresponding time point analyzed by Mann-Whitney  $U$  test.



**Figure S3. Association of absolute increase of serum SLPI from baseline (pre-OP, before surgery) with AKI.** Comparison of the absolute increase of serum SLPI from baseline (delta from pre-OP) in AKI vs. non-AKI patients (A) in the development and (B) in the validation cohort. (C-D) Receiver operating characteristic (ROC) curve of serum SLPI for the diagnosis of AKI (C) 24 hours and (D) 48 hours after surgery (validation cohort). AKI, acute kidney injury; AUC, area under the curve; CI, 95% confidence interval; SLPI, secretory leukocyte protease inhibitor. (A and B)  $P < 0.01$  versus other groups at the corresponding time point analyzed by Mann-Whitney  $U$  test.



**Figure S4. Receiver operating characteristic (ROC) curves of urine NGAL for the diagnosis of AKI.** AKI, acute kidney injury; AUC, area under the curve; CI, 95% confidence interval; NGAL, neutrophil gelatinase-associated lipocalin.



**Figure S5. Association of perioperative serum SLPI with postoperative death and ICU length of stay.** Perioperative kinetics of serum SLPI in patients who survived in the first year after surgery ( $N = 139$ ) compared to patients (A) who died during in first year after surgery ( $N = 9$ ) and (B) who died during the first 30 days after surgery ( $N = 7$ ) (Validation cohort). (C) Overview of ICU length of stay. (D) Perioperative serum SLPI in relation to ICU length of stay. SLPI, secretory leukocyte protease inhibitor. Data are means  $\pm$  SEM; (A and B)  $P$ -value versus other groups at the corresponding time point (difference between groups) analyzed by Mann-Whitney  $U$  test.