H3K4Me1, H3K4Me3 and H3K27ac as well as presence of CpG islands were used to identify methylated regulatory elements.

**Results:** Nineteen men and 6 women, with a median age of 69 years, were included. Ten were current smokers, 14 ex-smokers (stopped more than 4 weeks before surgery) and 1 non-smoker. Fourteen patients had adenocarcinoma, eleven patients had squamous cell carcinoma. When compared to distant lung tissue, gene expression of PD-L1, HGF, VEGFR2 and VEGFR3 were downregulated in tumor tissue. PD-L1 expression was also downregulated in tumor tissue, but only in active smokers. For PD-L2, HGF, VEGFR2 and VEGFR3, methylation data shows a clear hypermethylation pattern in the promoter and enhancer regions of tumor tissue, which is conform the results of the transcriptome sequencing. Qualitative results of the expression and methylation data are depicted in figure 1.

Conclusion: Our results show a lower expression of PD-L1 in tumors of active smokers. PD-L2, VEGFR2 and VEGFR3 and HGF have a lower expression in tumors overall. Methylation data confirms these findings. The therapeutic ratio with targeted treatment might be narrow as a result of this higher expression in distant lung tissue and in the case of immune checkpoint inhibitors, increase the chance of pneumonitis.

**Proffered Papers: Clinical 1: Breast**

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**Trends in the use of postoperative radiotherapy following mastectomy: a population-based study**

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**Purpose or Objective:** The objective of this population-based study was to provide an overview on trends and changing patterns in the adoption of postmastectomy radiotherapy (PMRT) over a 25-year period, and to validate the effectiveness of postoperative radiotherapy. Focused attention was given to disparities and barriers related to the use of postoperative radiotherapy in nodal positive disease and elderly patients.

**Material and Methods:** The study included epidemiological data of 16,675 patients diagnosed with invasive breast cancer from 1988 to 2012, within the catchment area of the Munich Cancer Registry. Use of PMRT, local recurrence free survival (LRFS), cumulative incidence (CI) of time to local recurrence, relative survival and conditional overall survival (cOS), were analysed for different time periods (1988-1997 and 1998-2012). Factors predicting the use of postoperative radiotherapy were analysed using multivariate logistic regression.

**Results:** Use of PMRT was associated with significant improvements in local control, with a 10-year LRFS of 88.9% with PMRT vs. 84.1% following mastectomy alone (p<0.001). After adjusting for age, tumour characteristics and other therapies, the Cox-regression analysis for LRFS identified PMRT as an independent predictor for improved local control (hazard ratio [HR]: 2.145; 95% CI: 1.787-2.574, p<0.001). Patients with 1-3 involved lymph nodes had a 10-year CI of time to local recurrence of 13.7% following mastectomy alone, compared to 6.5% following PMRT (p=0.001). Comparable findings were obtained for the subgroup of patients presenting with 4 positive lymph nodes - presenting with 17.8% 10-year CI of time to local recurrence in the mastectomy only group, compared to 8.2% in the PMRT group (p<0.001). All effects were smaller or extinct in elderly patients.