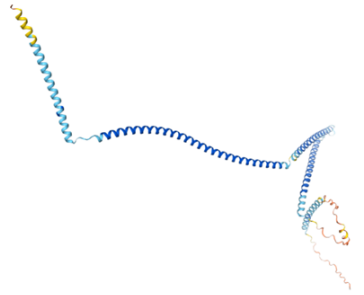


Clinical Significance of Coiled-Coil Domain Containing 113 (CCDC113) Expression in Resected Non-Small Cell Lung Cancer

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Coiled-Coil Domain Containing 113 (CCDC113)



- A coiled-coil domain-containing protein
- Identified through nasal epithelial gene-expression analysis as a candidate biomarker for early lung cancer detection

Qureshi et al. Front Genet. 2022.

- Localizes to centriolar satellites and contributes to primary ciliogenesis

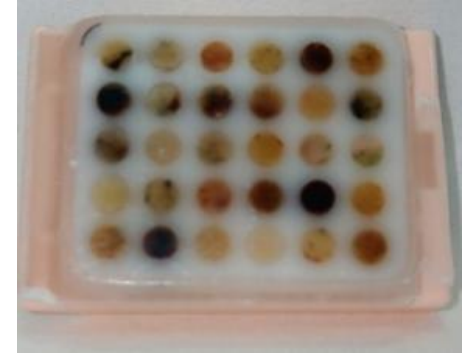
Firat-Karalar et al. J Cell Sci. 2014.

The clinicopathologic and prognostic significance of CCDC113 in NSCLC remains unclear.

Methods

- **Study cohort**

Patients with NSCLC who underwent curative-intent surgical resection between 2015 and 2019



- **Tissue microarrays construction**

Cases with sufficient residual tumor tissue for core sampling were selected
TMAs were constructed and stained immunohistochemically for CCDC113

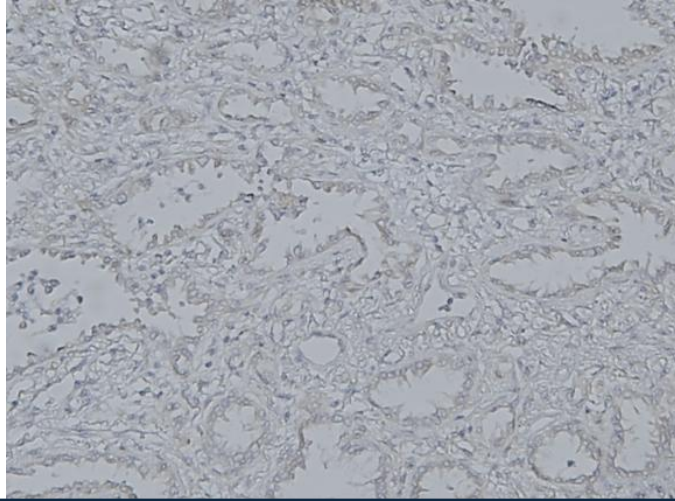
- **IHC scoring**

Staining intensity was scored on a four-tier scale (0–3)

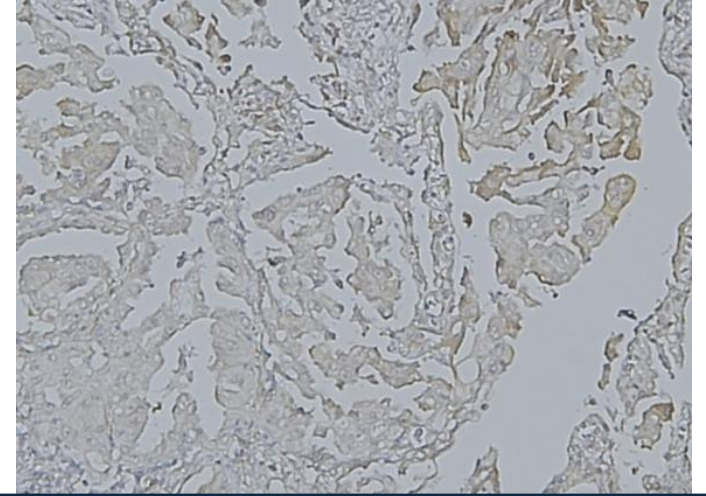
IHC scoring and Group Classification

Low Group

Score 0
: 102 cases

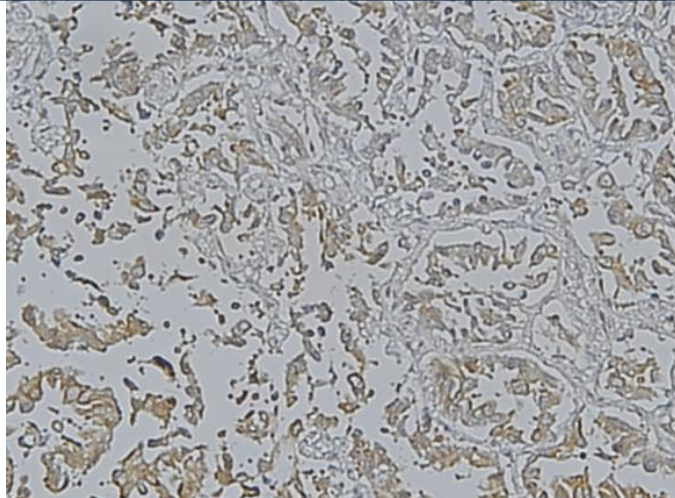


Score 1
: 177 cases

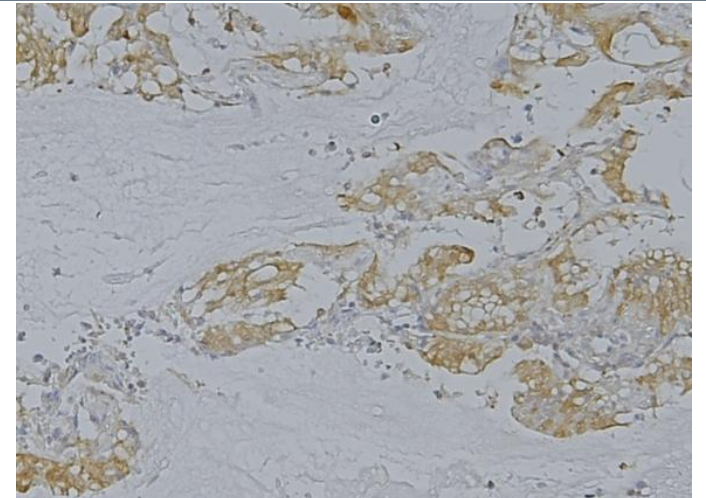


High Group

Score 2
: 197 cases



Score 3
: 24 cases



Case-level score: the highest staining intensity observed in tumor cells

Clinical Characteristics According to CCDC113 Expression

Factors	CCDC113 Low (n = 279)	CCDC113 High (n = 221)	p value
Age, years, median (IQR)	72 (66 - 77)	72 (66 - 77)	0.753
Sex, male / female	188 / 91	127 / 94	0.0253
PS (0 / 1 / 2 / 3)	219 / 51 / 8 / 1	178 / 38 / 4 / 1	
PS ≥ 1	60 (21.5%)	43 (19.5%)	0.656
Smoking status, ever smoker, n (%)	224 (80.2%)	153 (69.2%)	0.0048
Neoadjuvant chemotherapy, n (%)	5 (1.8%)	2 (0.9%)	0.472
Operative procedure	pneumo/lobe/seg	0 / 195 / 26	
lobe over	265 (95.0%)	195 (88.2%)	0.0074

pneumo: pneumonectomy, lobe: lobectomy, seg: segmentectomy

P values were calculated using the Mann–Whitney U test for continuous variables and Fisher’s exact test for categorical variables.

Pathological Characteristics According to CCDC113 Expression

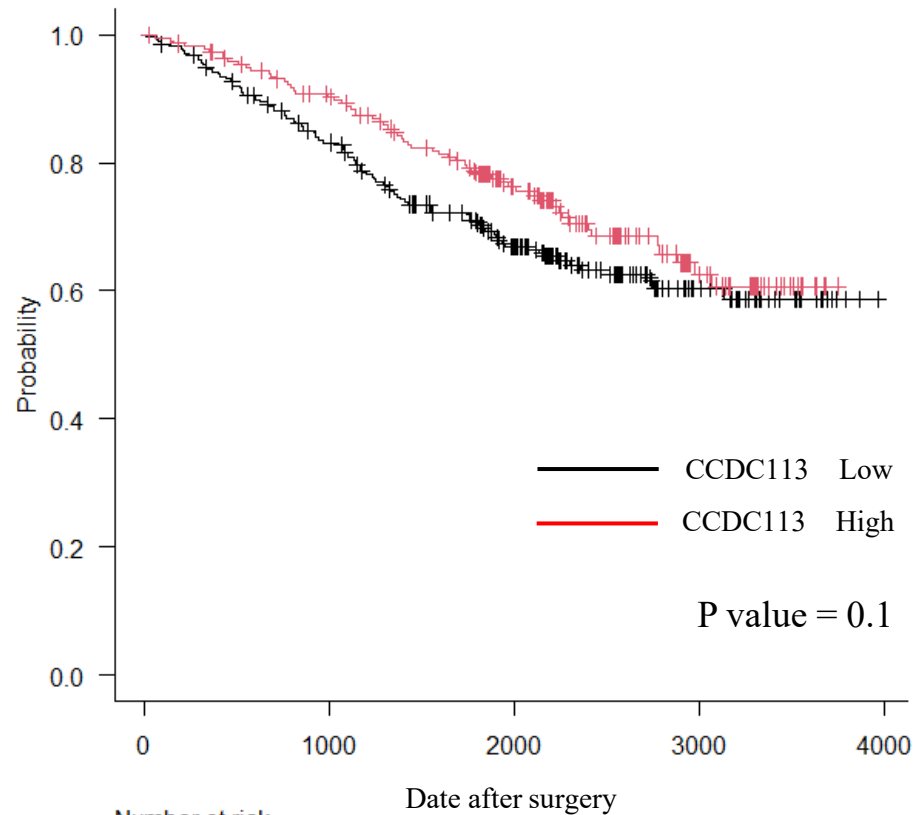
Factors	CCDC113 Low (n = 279)	CCDC113 High (n = 221)	p value
non-Adeno	128 (45.9%)	48 (21.7%)	< 0.0001
T $\geq$ 2	152 (54.4%)	90 (40.7%)	0.0029
N $\geq$ 1	85 (30.4%)	36 (16.2%)	0.0002
p-stage $\geq$ 2	129 (46.2%)	59 (26.7%)	< 0.0001
ly(+)	70 (25.1%)	39 (17.6%)	0.0499
v(+)	101 (36.2%)	46 (20.8%)	0.0002
pl(+)	99 (35.5%)	68 (30.8%)	0.294
pm(+)	10 (3.6%)	5 (2.3%)	0.44

non-Adeno: Histological types other than adenocarcinoma, including squamous cell carcinoma, pleomorphic carcinoma, and other histological subtypes.

P values were calculated using the Mann–Whitney U test for continuous variables and Fisher’s exact test for categorical variables.

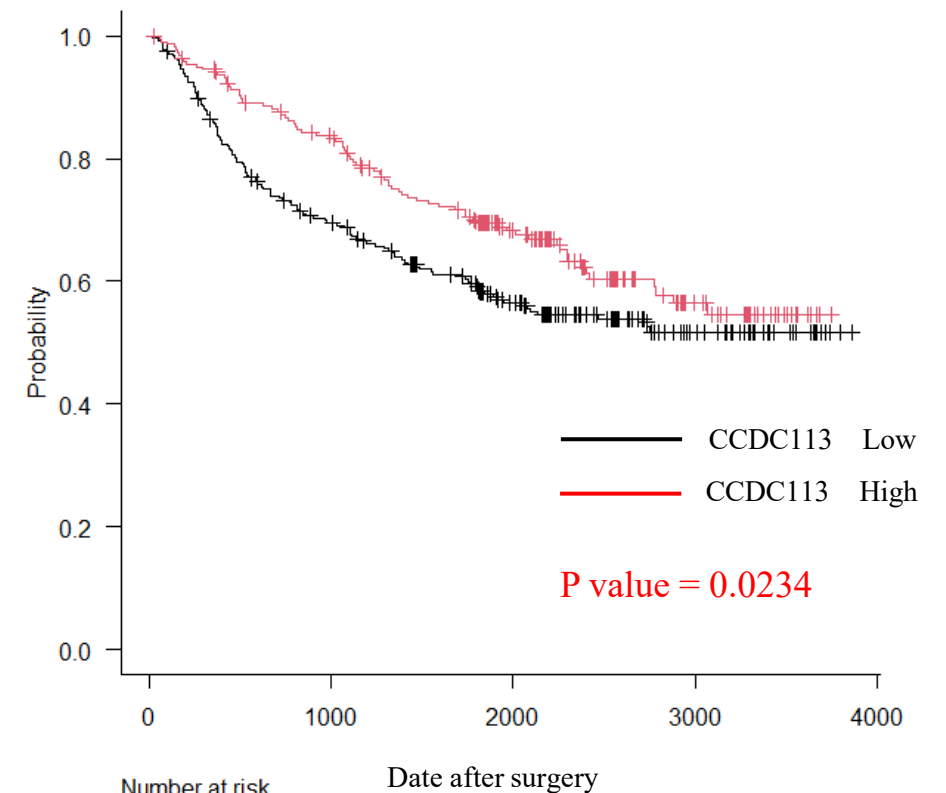
Survival outcomes According to CCDC113 Expression

Overall Survival



CCDC113 Low
CCDC113 High

Recurrence Free Survival



CCDC113 Low
CCDC113 High

P values were calculated using the log-rank test.

Summary

- Low CCDC113 expression is associated with aggressive tumor characteristics and poorer prognosis in resected NSCLC
- CCDC113 localizes to centriolar satellites and contributes to primary ciliogenesis, and may contribute to tumor progression through disruption of cellular architecture
- CCDC113 may serve as a novel prognostic biomarker in resected NSCLC