

# Immunohistology

## Lung Carcinomas



### ► Bibliography

Nonaka D. "A study of  $\Delta$ Np63 expression in lung Non-Small Cell Carcinomas" *Am J Surg Pathol* 36:895-899, 2012

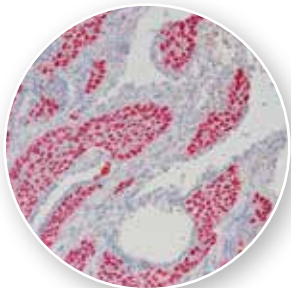
Bishop JA *et al.* "p40 ( $\Delta$ Np63) is superior to p63 for the diagnosis of pulmonary squamous cell carcinoma" *Mod Pathol* 25:405-415, 2012

Pelosi G *et al.* " $\Delta$ Np63 (p40) and thyroid transcription factor-1 immunoreactivity on small biopsies or cellblocks for typing non-small cell lung cancer: a novel two-hit, sparing-material approach" *J Thorac Oncol* 7:281-290, 2012

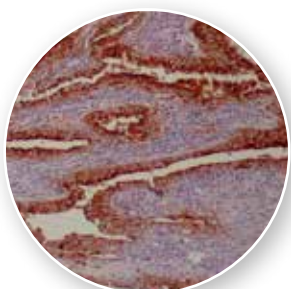
Au NH *et al.* "p63 expression in lung carcinoma: a tissue microarray study of 408 cases" *Appl Immunohistochem Mol Morphol* 12:240-247, 2004

Schultz H *et al.* "Generation and evaluation of a monoclonal antibody, designated MAdL, as a new specific marker for adenocarcinomas of the lung" *Brit J Cancer* 105:673-681, 2011

Tacha D *et al.* "An immunohistochemical analysis of a newly developed, mouse monoclonal p40 (BC28) in lung, bladder, skin, breast, prostate, and head and neck cancers." *Arch Pathol Lab Med.* 2014 Feb 14. [Epub ahead of print]



p40 staining (RBK054-05)  
on squamous cell lung carcinoma



MAdL staining (MSK083-05)  
on lung adenocarcinoma

## New markers for lung carcinomas

Lung cancer is one of the most common cancers worldwide. The many existing subtypes are treated with therapies which differ substantially. In general, physicians discriminate between small-cell lung cancer (SCLC) and non small-cell lung cancer. Subtypes of these are adenocarcinomas, squamous cell carcinomas or different types of large-cell carcinomas. For selecting the optimal therapy it is extremely im-

portant to detect and discriminate these subtypes during the diagnosis of the tissue. Recently, Zytomed Systems launched two new antibodies which help to diagnose the lung cancer subtypes more clearly. Compared with other commonly used antibodies they show higher specificity and/or sensitivity to their target protein. Thus, they are helpful new tools for improving the investigation of lung carcinomas.

### ► p40

Anti-p40 is a promising new antibody that may be a valuable marker in cases where anti-p63 traditionally has been used. In the moment p63 is the most commonly used antibody for detecting lung squamous cell carcinomas. It shows a high sensitivity but often also detects adenocarcinomas; according to Au *et al.* in up to 30% of all cases.

The p40 protein, an N-terminal truncated form of p63 protein ( $\Delta$ Np63), seems to be more strictly associated with squamous cell carcinomas than p63. Recent studies (Bishop *et al.* and Nonaka) show that p40 staining is equivalent to p63 in sensitivity for squamous cell carcinoma but shows a considerably

higher specificity. In the large study of Bishop *et al.* The sensitivity of p40 for lung squamous cell carcinomas is 100% and the specificity 98% whereas p63 only shows a specificity of 60% for this tumour entity. Both groups conclude that p40 is superior to p63 when detecting squamous cell carcinomas of the lung, especially when it is important to differentiate them from adenocarcinomas of the lung. A polyclonal p40 was used in these studies showing a cytoplasmic background in some cases. The new monoclonal p40 shows a strong and well defined nuclear staining (Tacha D *et al.*)

### ► MAdL

MAdL (Marker for Adenocarcinomas of the Lung) is a new specific marker for lung adenocarcinomas as described by Schultz *et al.* Its outstanding specificity of >99% and sensitivity of 76.5% for lung adenocarcinomas makes anti-MAdL a very useful tool for sub-differentiation of lung tumours. Compared with TTF-1, which is the most commonly used lung adenocarcinoma marker, MAdL shows a higher specificity. TTF-1 detects lung adenocarcinomas but also some small-cell lung carcinomas,

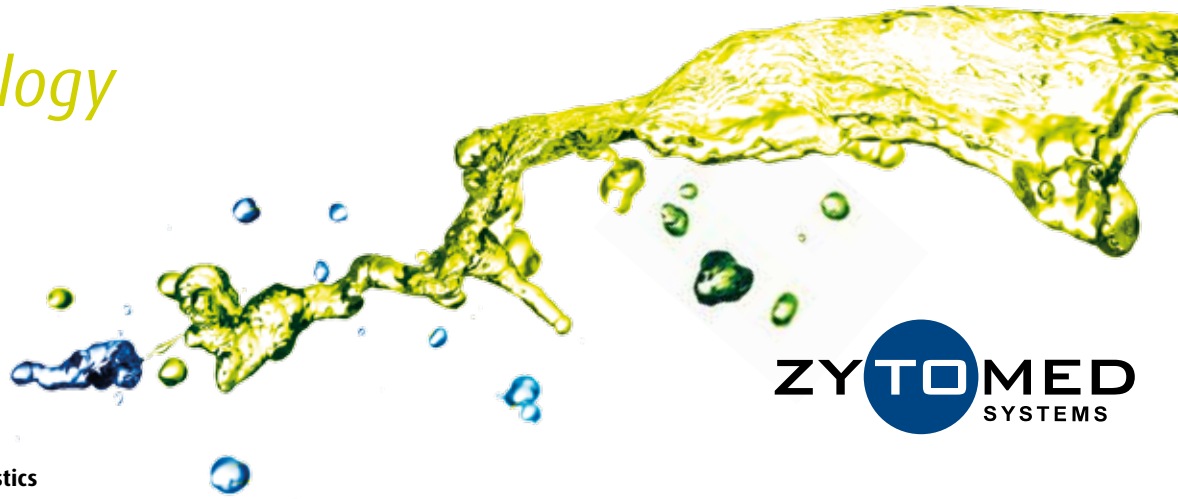
carcinoids and large-cell endocrine tumours whereas MAdL is not expressed in small-cell lung carcinomas and carcinoids. The expression of MAdL remains constant with increasing malignancy of the tumour. This distinguishes MAdL from other markers like Surfactant Protein A and B. Extensive testing has shown that MAdL immunohistochemistry on formalin-fixed tissue works best after proteolytic digestion. We recommend using Pepsin for the pre-treatment.

### ► Product information

Description	Reactivity	Method	Pre-treatment	Dilution	Volume	Cat. No.
<b>MAdL</b> Clone: MAdL Host: Mouse	HU	P	Pepsin	1:100-1:200	0.5 ml	MSK083-05
<b>p40</b> Clone: polyclonal Host: Rabbit	HU	P	Citrate pH 6.0 or EDTA pH 9.0	Ready-to-use	6 ml	RBG054
				1:50-1:200	0.5 ml	RBK054-05
<b>p40</b> Clone: BC28 Host: Mouse	HU	P	Citrate pH 6.0 or EDTA pH 9.0	Ready-to-use	6 ml	MSG097
				1:50-1:200	0.5 ml	MSK097-05
					1 ml	MSK097

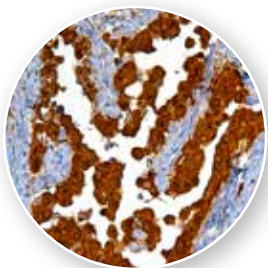
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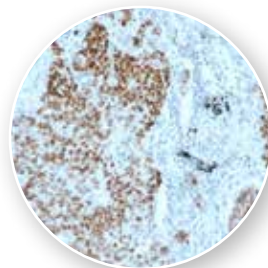


### ► More antibodies for lung diagnostics

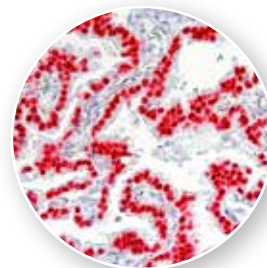
Description	Pre-treatment	Dilution	Volume	Cat. No.
<b>Calretinin</b> Clone: polyclonal   Host: Rabbit	Citrate pH 6.0	Ready-to-use	6 ml	RBG003
		1:100-1:200	0.5 ml	RBK003-05
			1 ml	RBK003
<b>CD56</b> Clone: RCD56   Host: Rabbit	EDTA pH 8.0 or EDTA pH 9.0	Ready-to-use	6 ml	RBG050
		1:100-1:500	0.5 ml	RBK050-05
			1 ml	RBK050
<b>Cytokeratin pan</b> Clone: AE1+AE3   Host: Mouse	Citrate pH 6.0 or Pronase	Ready-to-use	6 ml	MSG019
		1:100 - 1:200	0.5 ml	MSK019-05
			1 ml	MSK019
<b>Cytokeratin HMW</b> Clone: 34βE12   Host: Mouse	Citrate pH 6.0 or Pepsin	Ready-to-use	6 ml	MSG027
		1:25 - 1:50	0.5 ml	MSK027-05
			1 ml	MSK027
<b>Cytokeratin 5/6</b> Clone: D5/16B4   Host: Mouse	Citrate pH 6.0	Ready-to-use	6 ml	MSG034
		1:50 - 1:100	0.5 ml	MSK034-05
			1 ml	MSK034
<b>Cytokeratin 7</b> Clone: OV-TL12/30   Host: Mouse	Citrate pH 6.0 or Trypsin	Ready-to-use	6 ml	MSG032
		1:100-1:200	0.5 ml	MSK032-05
			1 ml	MSK032
<b>Cytokeratin 20</b> Clone: polyclonal   Host: Rabbit	Citrate pH 6.0	Ready-to-use	7 ml	503-16441
		1:200	1 ml	503-16444
<b>ERCC1</b> Clone: polyclonal   Host: Rabbit	Citrate pH 6.0	Ready-to-use	7 ml	505-18891
		1:100	1 ml	505-18894
			Ready-to-use	6 ml
<b>Neurofilament</b> Clone: 2F11   Host: Mouse	Citrate pH 6.0	1:200	0.5 ml	MSK060-05
			1 ml	MSK060
		<b>p63</b> Clone: 4A4   Host: Mouse	Citrate pH 6.0	1:50-1:75
0.5 ml	MSK087-05			
<b>RRM-1</b> Clone: SP167   Host: Rabbit	EDTA pH 8.0 or EDTA pH 9.0	Ready-to-use	7 ml	518-4671
		1:100	1 ml	518-4674
			0.5 ml	518-4672
<b>TTF-1</b> Clone: 8G7G3/1   Host: Mouse	Citrate pH 6.0	Ready-to-use	6 ml	MSG004
		1:200-1:500	0.5 ml	MSK004-05
			1 ml	MSK004
<b>TTF-1 + CK5/6 Cocktail</b> Clone: 8G7G3/1+D5/16B4   Host: Mouse	Citrate pH 6.0	Ready-to-use	6 ml	COG004
		1:50	0.5 ml	C0004K-05
			1 ml	C0004K



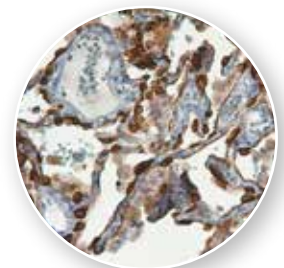
Calretinin staining (RBK003)  
on lung mesothelioma



p63 staining (MSK087) on  
squamous cell carcinoma of the lung



TTF-1 staining (MSK004) on lung  
adenocarcinoma



Cytokeratin pan staining (MSK019)  
on histiocytosis of the lung