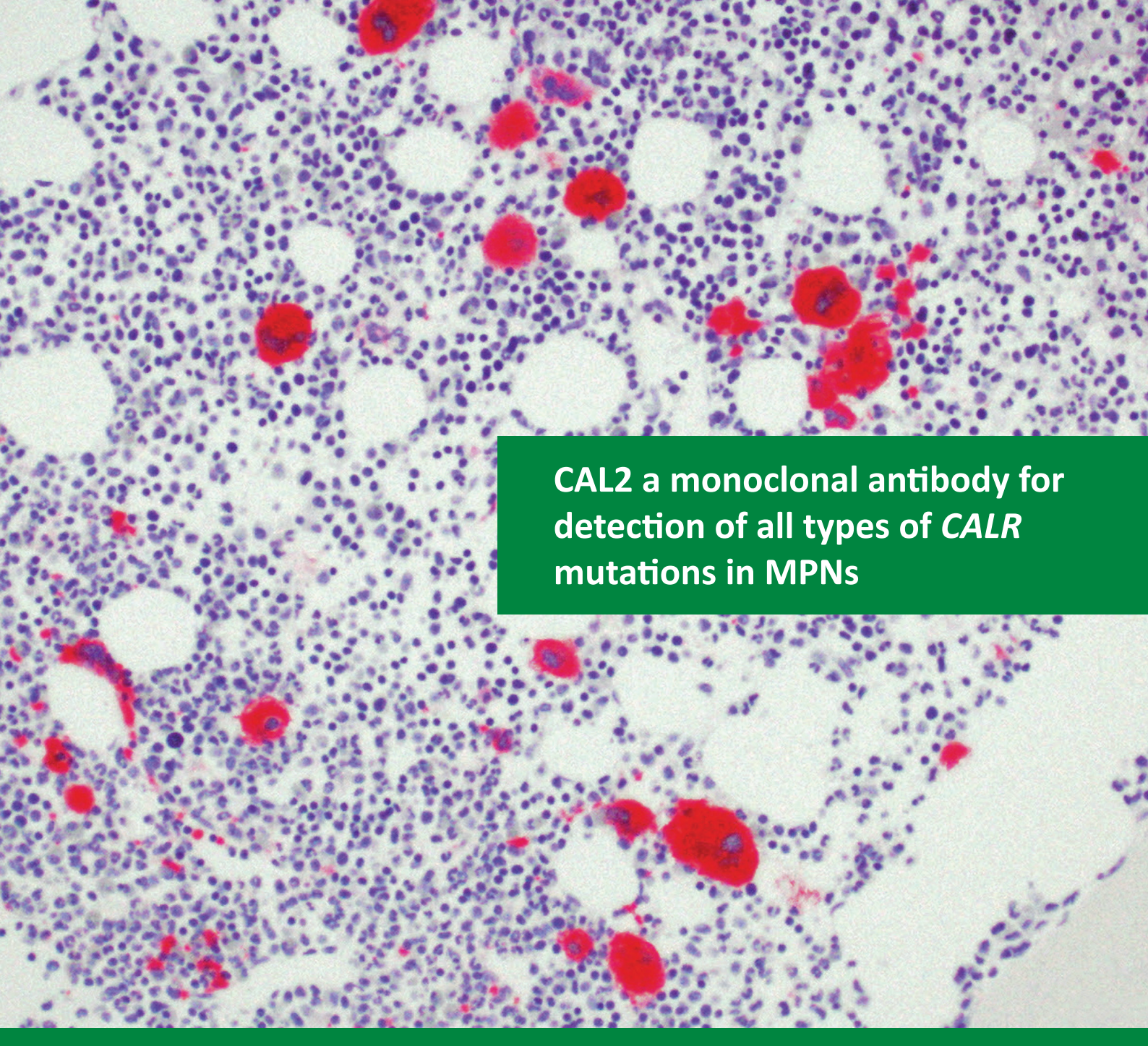

CAL2 a monoclonal antibody for detection of all types of *CALR* mutations in MPNs

CAL2 enables reliable distinction of *CALR* mutated ET and PMF from PV and reactive bone marrow alterations

MPNs	Myeloproliferative Neoplasms
ET	Essential Thrombocythaemia
PMF	Primary Myelofibrosis
PV	Polycythaemia Vera

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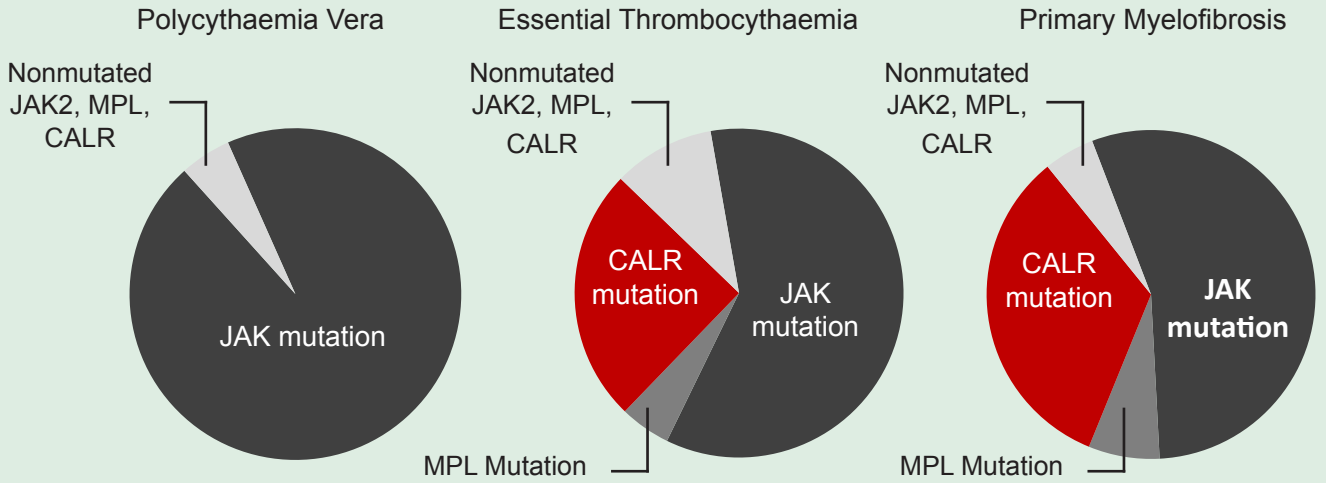
Diagnostic significance of *CALR* mutations in relation to *JAK2* and *MPL* mutations in MPNs



CALR mutations are detectable in 67% of ET and 88% of PMF cases with non-mutated JAK2 or MPL. It is mutually exclusive with mutations of *JAK2* or *MPL* in MPNs: The detection of *CALR* mutations fills a diagnostic gap in ET and PMF patients harboring non-mutated *JAK2*/*MPL*.

References:

Klampfl T et al. Somatic Mutations of Calreticulin in Myeloproliferative Neoplasms
N Engl J Med 369(25): 2379-2390, 2013.

Nangalia J et al. Somatic CALR Mutations in Myeloproliferative Neoplasms with Nonmutated JAK2.
N Engl J Med 369(25): 2391-2405, 2013.

CAL2 Immunostaining correlates 100% with Sanger sequencing

Sanger Sequencing	Result of CAL2 Immunohistochemistry	
	Positive	Negative
Positive	52	0
Negative	0	121

Total No. of investigated cases N = 173

References:

Stein H. et al. A new monoclonal antibody (CAL2) detects CALRETICULIN mutations in formalin-fixed and paraffin embedded bone marrow biopsies. Leukemia, 2015, Leukemia accepted article preview 23 July 2015; doi: 10.1038/leu.2015.192.

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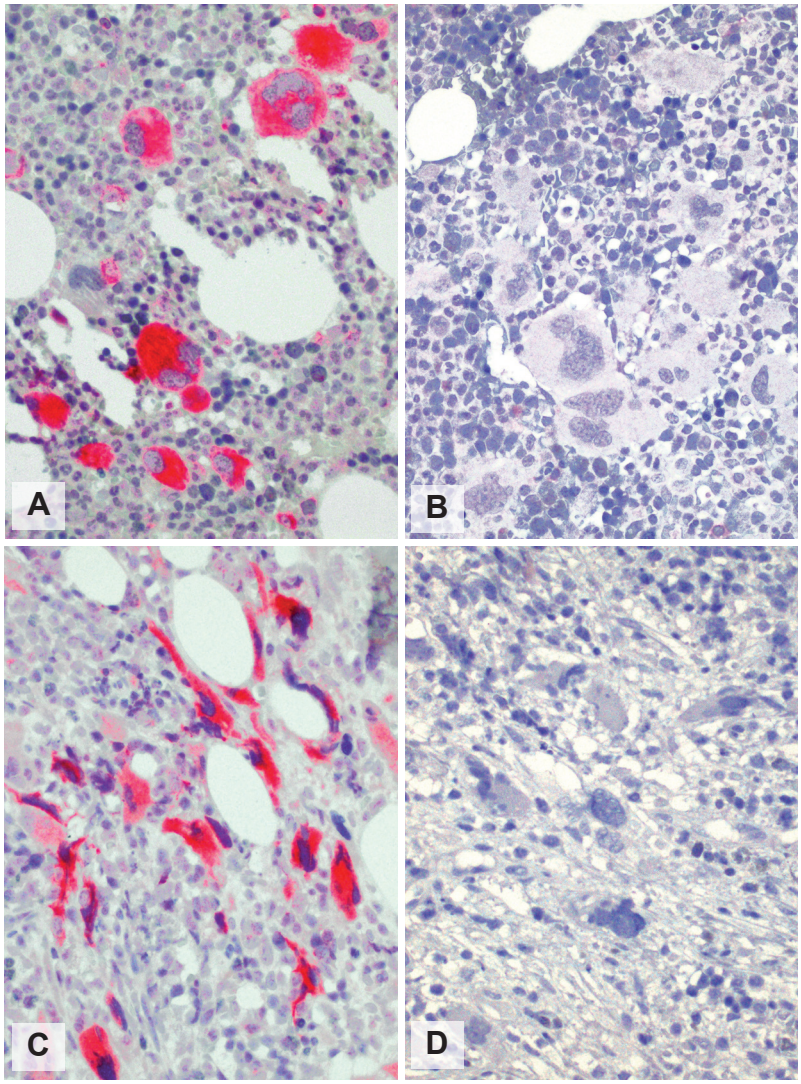
CAL2 staining of megakaryocytes with & without *CALR* mutations



CAL2 IHC of four PMF cases:

A and C: Selective staining of mutated CALR protein in megakaryocytes of two PMF cases, respectively in **prefibrotic phase** and in **fibrotic phase**, in which Sanger sequencing detected a *CALR* mutation.

B and D: Absent CAL2 staining in two PMF cases, respectively in **prefibrotic** and in **fibrotic phase**, both without molecularly detected mutated CALR. The fibrotic stroma remains unstained (C and D).

Application of CAL2 Monoclonal Antibody

CAL2 antibody immunohistochemistry (IHC) is suitable for

- a specific, sensitive, rapid and cost-effective identification of different types of *CALR* mutations in FFPE bone marrow sections
- excluding *JAK2* mutation and therefore diagnosis of PV
- indication for molecular analysis of *CALR* mutation for distinguishing type 1 and 2 mutations

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Antibody	CAL2, a mouse monoclonal anti-human antibody
Target Protein	Formalin resistant common epitope expressed in the mutated CALRETICULIN peptide
Gene	*CALRETICULIN*
Gene Symbol	*CALR*
Gene Location	19p 13.3-13.2
Mutation Location	Exon 9
OMIM ID	109091

Why is CAL2 able to detect all known types of *CALR* mutations ?

All types of *CALR* mutation result in a novel C-terminus. This harbors a common epitope expressed in all kinds of *CALR* mutations. The CAL2 antibody is directed against this common epitope. Therefore, it can be concluded that the CAL2 antibody is able to detect all *CALR* mutations.

Mouse Monoclonal Antibody Directed at Mutated *CALR*
clone CAL2

Product Code	Quantity	Price*
DIA-CAL-250	250 µl	EUR 698.00
DIA-CAL-100	100 µl	EUR 298.00

Source/Reactivity	**Mouse / Human**
Clone	**CAL2**
Host / Isotype	**Mouse / IgG2a**
Application	**IHC-P**
Applicable Dilution	**1:20 – 1:40**

*Prices excl. VAT, incl. free delivery inside Germany

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