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
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
Nangalia J et al. Somatic CALR Mutations in Myeloproliferative Neoplasms with Nonmutated JAK2.

CAL2 Immunostaining correlates 100% with Sanger sequencing

<table>
<thead>
<tr>
<th>Sanger Sequencing</th>
<th>Result of CAL2 Immunohistochemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>Positive</td>
<td>52</td>
</tr>
<tr>
<td>Negative</td>
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</tbody>
</table>

Total No. of investigated cases  N = 173

References:
**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

**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).

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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

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**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.

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### Mouse Monoclonal Antibody Directed at Mutated CALR clone CAL2

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Quantity</th>
<th>Price*</th>
<th>Source/Reactivity</th>
<th>Mouse / Human</th>
</tr>
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<tbody>
<tr>
<td>DIA-CAL-250</td>
<td>250 µl</td>
<td>EUR 698.00</td>
<td>Clone</td>
<td>CAL2</td>
</tr>
<tr>
<td>DIA-CAL-100</td>
<td>100 µl</td>
<td>EUR 298.00</td>
<td>Host / Isotype</td>
<td>Mouse / IgG2a</td>
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*Prices excl. VAT, incl. free delivery inside Germany