POLYCLONAL ANTIBODY TO
3-CHLOROTYROSINE

Catalog nr
HP5002 (lot number and expiry date are indicated on the label)

Description
The polyclonal antibody recognizes 3-chlorotyrosine specific protein adducts that are formed by hypochlorous acid. Polymorphonuclear leukocytes or neutrophils are one of the primary defense mechanisms against invading microorganisms and also involved in the removal of necrotic cells. However, in certain conditions, recruitment of neutrophils may aggravate existing injury. For example, neutrophils are involved in the pathophysiology of hepatic ischemia-reperfusion injury, endotoxin- and sepsis-induced liver failure, alcoholic hepatitis, and certain drug toxicities. The fact that neutrophils accumulate in the liver does not necessarily mean that they cause injury. ICAM-1 and CD18 integrins are involved in the adherence of neutrophils to target cells, e.g., hepatocytes. This results in a long-lasting adherence-dependent oxidant stress, which is a major factor in neutrophil-mediated liver cell killing. Stimulated neutrophils release oxidants, proteases, and other potentially injurious constituents. They generate superoxide radicals and hydrogen peroxide and release MPO, which catalyzes oxidation of chloride by hydrogen peroxide to give hypochlorous acid. This hypochlorous acid can react with proteins to form 3-chlorotyrosine protein adducts. A limitation for investigating the pathophysiological role of neutrophils in vivo is the lack of a reliable biomarker for neutrophil cytotoxicity. Immunohistochemical staining of liver samples with anti 3-chlorotyrosine antibody correlates well with neutrophil-induced liver injury. The polyclonal antibody can be used to assess chlorotyrosine protein adduct formation and is a useful marker of neutrophil-induced liver cell injury in vivo.

Species
Rabbit

Formulation
1 ml (100 µg/ml) 0.2 µm filtered antibody solution in PBS, containing 0.02% sodium azide and 0.1% bovine serum albumin.

Application

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>FC</th>
<th>FS</th>
<th>IA</th>
<th>IF</th>
<th>IP</th>
<th>P</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N.D.</td>
</tr>
</tbody>
</table>

N.D. = Not Determined; F = Frozen sections; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IF = Immuno Fluorescence; IP = Immuno Precipitation; P = Paraffin sections; W = Western blot

Use
For immuno assays and immunohistology, dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting dilution is 1:50.

Storage and stability
Product should be stored at 4°C. Under recommended storage conditions, product is stable for one year.

Precautions
For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and Federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result with the use of or derivation of this product.

References

Also available
HM5001 Monoclonal antibody against Nitrotyrosine, clone HM.11
HM5003 Monoclonal antibody against Phosphotyrosine, clone P9V6
HP5003 Polyclonal antibody against Acetaminophen-protein adducts
HM2164 Monoclonal antibody against human MPO, clone 266-6K1
HM1051 Monoclonal antibody against mouse MPO, clone 8F4 (cross reactive rat)