

# Rabbit monoclonal antibody against Calcitonin (Clone ISR059)



**Figure 1** Human medullary thyroid carcinoma stained with anti-Calcitonin antibody.

#### Product identification

ISC154-R3	3 ml ready-to-use (RTU)
ISC154-R7	7 ml ready-to-use (RTU)
ISC154-C1	1 ml concentrated

#### Summary and explanation

Calcitonin (CT), a 32 amino acid peptide hormone produced primarily by the parafollicular cells (C cells) of the thyroid gland, and its receptor (CTR) are well known for their ability to regulate osteoclast mediated bone resorption and enhance Ca2+ excretion by the kidney. Human seminal fluid contains 40 times the concentration of CT found in serum. Evidence suggests the presence of nonthyroidal derived CT in the central nervous system. Calcitonin is a sensitive tumor marker for the detection of medullary thyroid carcinoma.

#### Principle of the procedure

The stated primary antibody is suitable for immunohistochemical staining of FFPE tissue sections based on specific antigen-antibody reaction. Using a detection system linked to HRP or alkaline phosphatase the antigen visualization is performed via specific binding of the primary antibody. Secondary antibody is binding to the primary antibody, and the enzyme complex labels this complex. The enzymatic activation of the chromogen results in a visible reaction product at the antigen site. Each step is incubated for a precise time and temperature and requires interposed washing steps. The specimen may then be counterstained. Results are interpreted using a light microscope.

#### Materials provided

Primary antibody	Calcitonin
Host	Rabbit
Subclass	lgG
Clone	ISR059
Species Cross-reactivity	Human. Others-not
	known
Applications	Immunohistochemistry
Epitope Retrieval	Heat-induced epitope
	retrieval
Ready-to-use antibody	Prediluted antibody in
	antibody diluent buffer
Recommended working	1:50 to 1:100
dilution range	

Product label shows the specific lot number.

Prediluted antibody is ready-to-use and optimized for staining. No further dilution, reconstitution, mixing, or titration is needed.

Antibody concentrate is optimized for dilution within dilution range using InSituChem® Antibody Diluent for IHC (Cat. No. D005-80). Indicated dilution range should be considered as recommendation and depends on different facts (tissue, fixation, incubation conditions, etc.). Optimum dilution to be determined in user's own system.

#### Materials required but not provided

The following materials may be required for staining but are not provided with the primary antibody.

- Positive and negative controls
- Microscope slides (positively charged) and cover slips
- Water bath
- Humidified chamber
- Staining jars
- Stopwatch
- Xylene or xylene substitute
- Ethanol
- Deionized or distilled water

- Antigen retrieval reagent, e.g. Antigen Enhancer (HIER buffer), Cat. No. D004-500

- Detection system, e.g. IHC Complete Detection system (Goat anti mouse/rabbit HRP, DAB staining), Cat. No. D001-15
- Wash buffer: e.g. IHC Wash Buffer, Cat. No. D003-500
- Tap water/bluing reagent (e.g. ammonia water)
- Light microscope

# Storage and handling

#### Store at 2 - 8 °C.

When stored correctly antibody is stable to the expiration date indicated on the vial. Do not use after expiration date.

To ensure proper reagent delivery and stability of the antibody, replace the dispenser cap after every use and immediately place the bottle cool in an upright position.



# Staining procedure

- 1. Cut 3-4 µm section of formalin-fixed paraffinembedded tissue and place on positively charged slides.
- 2. Dry at 65°C for 2 hours.
- 3. Deparaffinize, rehydrate, and epitope retrieve. Upon completion, rinse with 3 changes of distilled or deionized water.
- 4. If using HRP detection system, place slides in peroxide block for 10 minutes; rinse. If using AP detection system, omit this step.
- 5. Apply the antibody and incubate for 60 minutes; rinse.
- 6. Apply the InSituVison<sup>™</sup> Polymer Rabbit/Mouse Detection System for 30 minutes; rinse.
- 7. Apply ample amount of DAB or AEC chromogen and incubate; rinse.
- 8. Dehydrate and coverslip.

### Interpretation of results

The immunostaining procedure causes a colored reaction product to precipitate at the antigen sites localized by the primary antibody.

# Cellular localization: Cytoplasm.

A qualified pathologist experienced in immunohistochemistry procedures must evaluate positive and negative tissue controls before interpreting patient specimens.

Positive staining intensity should be assessed within the context of any background staining of the negative reagent control.

Note: A negative result means that the antigen in question was not detected, but not that the antigen is not present in the cells/tissues tested. An antibody panel may be used to support the results in some circumstances. Additionally, the morphology of each tissue sample should be examined utilizing a hematoxylin and eosin stained section. A qualified pathologist must interpret the patient's morphologic findings and pertinent clinical data.

# Warnings and precautions

- 1. Application only by qualified and trained personnel.
- 2. There are no estimated health risks, if the product is used as directed. MSDS is available on request.
- Product contains sodium azide as preservative. Pure sodium azide is toxic. The concentration of sodium azide in this reagent is < 0.1 % and is not classified hazardous. See MSDS.
- 4. As with any product derived from biological sources, proper handling procedures should be used.
- 5. Do not use reagents after expiration date.
- 6. Take reasonable precautions when handling reagents. Use protective clothing and gloves.

- 7. All hazardous materials should be disposed according to guidelines for hazardous waste disposal. Materials of human or animal origin should be handled as biohazardous materials and disposed of with proper precautions.
- 8. Avoid microbial contamination of reagents as it may cause incorrect results.

# Literature

[1] Pondel M. Calcitonin and calcitonin receptors: bone and beyond. International journal of experimental pathology, 2000.

[2] Verbeek HHG, de Groot JWB, Sluiter WJ, et al. Calcitonin testing for detection of medullary thyroid cancer in people with thyroid nodules. Cochrane Database of Systematic Reviews, 2020.

[3] Costante G, Durante C, Francis Z, et al. Determination of calcitonin levels in C-cell disease: clinical interest and potential pitfalls. Nature Clinical Practice Endocrinology & Metabolism, 2009.

# Date of publication or revision

2024-06-10 Change(s) made: -

**Explanation of symbols** 

# REFCatalog numberLOTBatch codeUse byUse byTemperature limitationDo not use if package damagedLOTConsult instructions for useConsult instructions for use