# *In situ* hybridization histochemistry

## What is it?

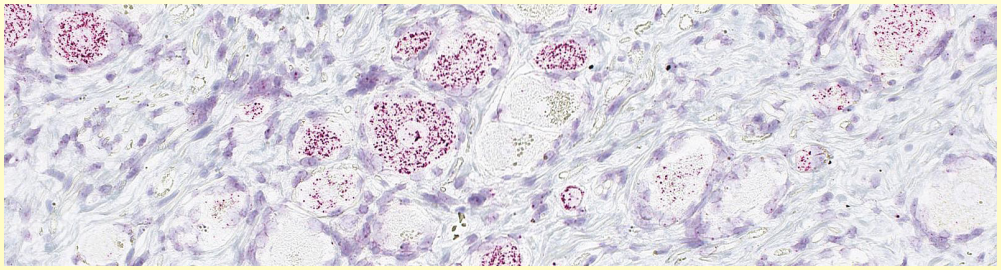
- *In situ* hybridization histochemistry (ISHH) is a technique that create detailed information at cellular resolution regarding the expression of genes in tissue sections. The method utilizes specific probes (oligonucleotide, DNA or RNA-based) which are hybridized under stringent conditions to immobilized mRNAs within tissue sections. The probes are subsequently detected by radiographic or chromogenic detection methods. Although this method has been extensively used by the scientific community for more than 30 years, the usefulness of the method has until recently been restricted by a range of techniqual problems. These problems include, depending on the experimental set-up, low sensitivity, poor signal-to-noise ratio, long lead times and/or labour intensive work. A novel development of the ISHH method, using the so called bransched DNA technology, has effectively resolved these short-comings, now delivering mRNA-based expression analyses with unprecedented performance.

## What can it be used for?

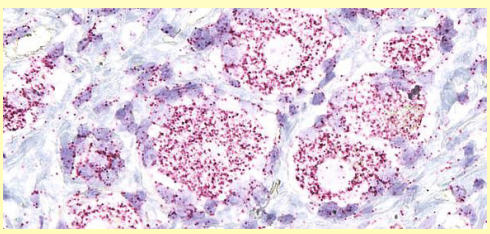
- The ISHH method is often used to generate early-in-process information regarding distribution and regulation of biomarkers at the mRNA level in tissues when antibodies (for IHC analysis) are not available or of poor quality. ISHH-based information can also be used to support the validation of antibodies as tools for IHC-assisted analyses.

## Our Services

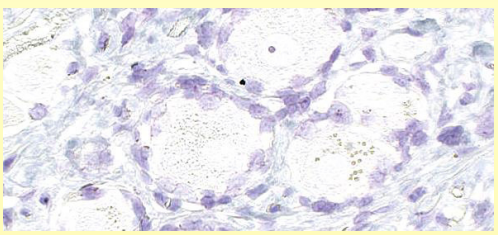
- The Offspring team has more than 25 years of experience working with ISHH-based analyses in single and multiplexed formats. We offer ISHH analyses in snap frozen and fixed (cryosectioned or paraffin-embedded) tissues, using the chromogenic RNAScope ISHH method from ACD Diagnostics. This is a novel development of the ISHH technique with superior performance with regard to speed (4 weeks from start of project to final data), sensitivity (single molecule detection), specificity (exceptionally high signal to noise ratio) and reliability (we have sofar experienced close to 100% success rate). The method offers the opportunity for multiplexed detection of several mRNA as well as combined ISHH / IHC-based analyses.



**Target Y mrNA in human dorsal root ganglias**



**UBC mRNA Positive control**



**UBC mRNA Negative control**

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