

XRNA TMPRSS2 Aqua Human RNA FISH

Order No.:
R-0202-020-BL

Description

The XRNA TMPRSS2 probe kit comprises 96 oligos detecting the human TMPRSS2 mRNA. We are using the proprietary HuluFISH enzymatic multi fluorophore labeling technique enabling the detection of RNA at the single-cell, single-molecule level in cell and tissue samples. The probe kit is labeled in aqua (Atto425).

Clinical Details

Novel coronavirus SARS-CoV-2 causes severe respiratory infections which can progress to diverse clinical manifestations. The pleiotropic effects of SARS-CoV-2 infection are partly attributed to the two-step cell entry mechanism utilized by SARS-CoV-2, which is equal to the mechanism used by the related coronavirus SARS-CoV in its main features:

Binding of the viral spike (S) protein to the cellular angiotensin-converting enzyme 2 (ACE2) receptor facilitates attachment of the virus to the host cell. The cellular transmembrane protease serine 2 (TMPRSS2) then primes the viral S protein for entry, by cleavage of the S protein at the S1/S2 and S2 sites. S protein priming by TMPRSS2 is necessary for fusion of viral and cellular membranes, and therefore cell entry. Hence, TMPRSS2 activity is essential for viral spread and pathogenesis in the infected host. This makes TMPRSS2 expression and activity interesting candidates for targeted COVID-19 therapies. Inhibition of TMPRSS2 with a clinically proven inhibitor was already shown to be efficient against SARS-CoV-2 host cell entry in vitro.

Both ACE2 and TMPRSS2 are pleiotropically expressed, including but not limited to the lungs, gastrointestinal tract, testes, kidneys and skin. In a study analysing the tissue- and gender-specific expression level of TMPRSS2, it was found that the highest TMPRSS2 expression is located in the prostate.

Note

*For Research Use Only (RUO). Not for diagnostic procedures.
Powered by HuluFISH technology from PixelBiotech.*

Literature

- Lucas et al (2008) J Pathol 215: 118-125
- Baughn et al (2020) Mayo Clin Proc 95: 1989-1999
- Hoffmann et al (2020) Cell 181:271-280

FACTSHEET

TMPRSS2 is a member of the type II transmembrane protease family and is positively regulated by androgen signalling. TMPRSS2 expression previously gained interest in cancer research, as it shows high expression in prostate cancers, as well as subcellular protein mislocalization in advanced prostate cancer and is associated with tumor cell differentiation.

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