



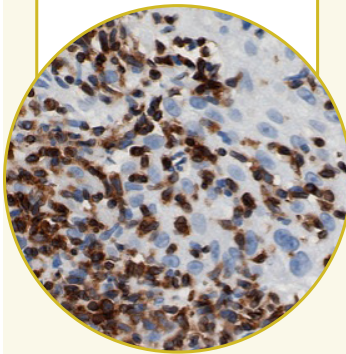
TCRB1 (QR173) & TCRB2 (QR174)

Making T-Cell Clonality Visible

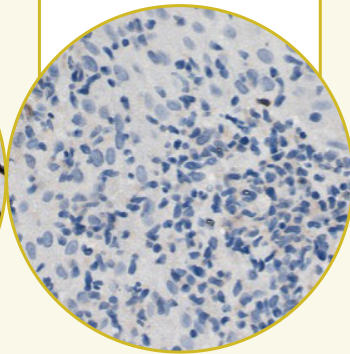
TCRB1/TCRB2 immunohistochemistry introduces a tissue-based approach to T-cell clonality assessment, bringing a concept analogous to B-cell light-chain restriction into T-cell lymphoma diagnostics.

TCRbeta-1-restricted
mycosis fungoides

TCRB1
(QR173)

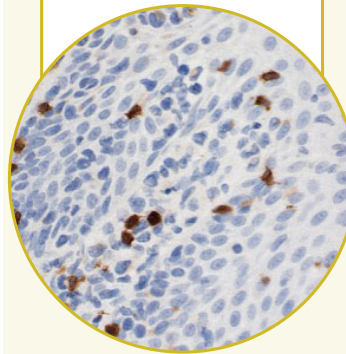


TCRB2
(QR174)

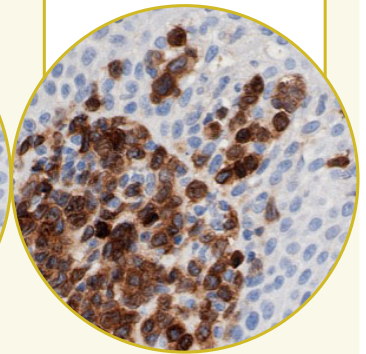


TCRbeta-2-restricted
mycosis fungoides

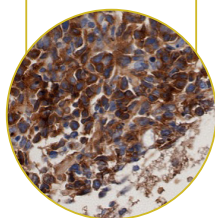
TCRB1
(QR173)



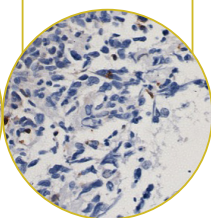
TCRB2
(QR174)



TCRB1

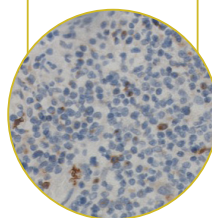


TCRB2

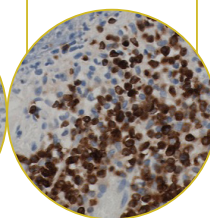


TCRbeta-1-restricted nodal
T-cell lymphoma

TCRB1

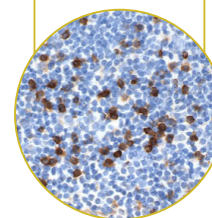


TCRB2

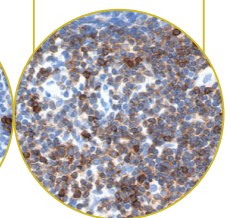


TCRbeta-2-restricted CD30+
cutaneous lymphoproliferative
disorder

TCRB1



TCRB2



TCRbeta-2-restricted T-cell
prolymphocytic leukaemia in a
lymph node

Product codes:

TCRB1 (QR173)

P-T011-xxx

TCRB2 (QR174)

P-T012-xxx

Free samples available (3 ml RTU).

IVDR certification is in progress.

TCRB1/TCRB2 Immunohistochemistry

A novel approach for T-cell clonality assessment

The Diagnostic Challenge

T-cell lymphomas, particularly cutaneous T-cell lymphomas (CTCL) such as mycosis fungoides (MF), are often difficult to distinguish from benign inflammatory T-cell infiltrates. Early disease may mimic common dermatoses for years, resulting in:

- Delayed diagnosis
- Repeated biopsies
- Ineffective treatment strategies

Current T-cell receptor (TCR) clonality testing relies mainly on multiplex PCR-based methods, which are complex, costly, and require specialized expertise.

The Principle: Detecting T-Cell Monotypia

T cells express one of two highly similar T-cell receptor beta constant regions:

- TCRB1 (TRBC1, TCRbeta1)
- TCRB2 (TRBC2, TCRbeta2)

In healthy polyclonal T-cell populations, TCRB1 and TCRB2 are expressed at an approximately 1:1 ratio. This balanced distribution provides a robust biological baseline, making deviations from normal expression readily detectable.

In contrast, clonal T-cell populations exhibit TCRB1-or TCRB2-restriction, enabling direct immunohistochemical visualization of T-cell monotypia in routine FFPE tissue sections.

This principle is comparable to kappa/lambda-restriction analysis in B-cell neoplasms.

Clinical & Healthcare Impact

TCRB1/TCRB2 immunostaining provides a rapid, tissue-based approach to T-cell clonality assessment, enabling:

- Accurate detection of clonal T-cell populations
- Diagnosis of mycosis fungoides and other cutaneous T-cell lymphomas
- Reliable differentiation of reactive and neoplastic T-cell infiltrates
- Earlier diagnosis to support timely treatment decisions
- Cost-effective implementation with reduced reliance on molecular clonality testing

Literature:

Soilleux EJ, Rodgers DT, Situ JJ et al. *Diagnostics* (Basel). 2024 Nov 6;14(22):2479.

Kaistha A, Situ JJ, Evans S et al. *J Clin Pathol*. 2026 Jun 18;79(7):486-493.