TECHNOLOGY OFFER



23-14 Preanalytic conditioning for proof of light chain restriction in plasmacelldyscrasias by flow cytometry

- ✓ Superior analysis of light-chain restriction
- ✓ Sensitive detection of plasmacell-clones
- ✓ Proof of malignancy
- ✓ Improvement of MRD-diagnostic

The Technology

Analysis of light chain restriction by flow cytometry is hampered by the high protein concentration due to the production of monoclonal protein by the malignant plasmacell-clone in the peripheral blood and bone marrow of patients with plasmacell-dyscrasias. The developed preanalytic conditioning is useful to remove the interfering protein from the plasmacells. This cocktail facilitates the demonstration of light chain restriction by flow cytometry and the differentiation between normal and malignant plasmacells. Before light chain staining, whole blood samples are incubated with the conditioning. After 10 minutes of incubation, the sample were washed twice and stained according to the local protocol for light chain analysis.

Background

To proof the malignancy in plasmacell-disorders, it is necessarily to show the clonality of plasmacells. While plasmacells express κ - or λ light chains, the restricted expression of one of these light chains demonstrates clonality. Without this proof of clonality, the differentiation by flow cytometry between malignant and physiological plasmacells is narrowed by the analysis of aberrant surface markers, but recent data show, that virtual all aberrant markers can be expressed on normal plasmacells.

Advantages

The preaanyltical conditioning can be easily adapted to different staining protocoll for the detection of malignant plasmacells and helps to display the light chain restriction of plasmacells. This technology improves the ability to demonstrate the clonality of plasmacells and the discrimination from reactive plasmacell proliferation. In addition, regarding the growing improtance of MRD-diagnostic in Multiple Myeloma, accurate staining of light-chain restriction improves the sensitivity of MRD-analysis in plasmacell-dyscrasias.

Commercial Opportunity

Application for initial flow cytometry diagnostic procedure to determinate the malignancy of plasmacell-dyscrasia (Multiple Myeloma, smoldering myeloma, MGUS). Repetitive use of MRD-diagnostic after treatment, to determinate the remission of the plasmacells-dyscrasia.

Intellectual Property

Prio 2014, CA2949324, EP15727347.5 US15312780

Contact:

technology transfer heidelberg GmbH Im Neuenheimer Feld 672 D-69120 Heidelberg Germany Email: tt-team@med.uni-heidelberg.de

On behalf of :



UniversitätsKlinikum Heidelberg