

## A valuable contribution to supporting diagnoses of red blood cell disorders

- ✓ The combined information of quantity- and quality-related RET parameters provides a comprehensive picture of erythropoiesis and its further development.
- ✓ RET%, RET#, IRF – quantifying mature and immature reticulocytes
- ✓ RET-He – the haemoglobinisation of the reticulocytes

### Predict successful engraftment reliably

The immature reticulocyte fraction (IRF) is an indicator of erythropoiesis and correlates well with the engraftment of neutrophils as published\* by researchers.



### Patient with chronic anaemia receiving iron and erythropoietin therapy

When compared with the haemoglobin value or other RBC parameters, the RET-He value and advanced parameter combinations enable significantly faster insight into changes in the erythropoietic status, supporting clinicians in controlling iron and/or erythropoietin therapy.



### Your benefits in daily routine

- Rapid determination of erythropoietic status is possible using haematological routine diagnostics.
- RET-He supports the possibility of close therapy monitoring with dialysis patients, for example. It can also help clinicians to rapidly identify emerging anaemia as a side-effect or even recovery during successful treatment.
- Automated reflex method for samples with unreliable PLT-I counts – the optical platelet count is part of reticulocyte analysis using fluorescence flow cytometry and resolves many PLT-I interferences.

### Workflow automation

- The optional CBC-O\*\* add-on of the *Extended* IPU greatly improves the workflow for samples with an increased MCHC as it reduces manual procedures for finding the root cause of the abnormality.
- The optional RWO\*\* add-on of the *Extended* IPU offers an opportunity to streamline the laboratory workflow and support in choosing the appropriate confirmatory tests for suspicious RBC disease samples.

\*\* Research use only

RET  
APPLICATION

Know more.  
Decide with confidence.  
Act faster.



### Diagnostic parameters

#### Quantitative information

- Reticulocyte count (RET%, #)
- Reticulocytes corresponding to their amount of intracellular nucleic acids:
  - Immature reticulocyte fraction (IRF)
  - Three stages of reticulocytes: HFR ('immature' reticulocytes, high fluorescence ratio), MFR ('semi-mature' reticulocytes, medium-fluorescence ratio) and LFR ('mature' reticulocytes, low-fluorescence ratio)

#### Quality information

- Newly formed red blood cells:
  - Reticulocyte haemoglobin equivalent (RET-He)
- Red blood cells:
  - Red blood cell haemoglobin equivalent (RBC-He), a counterpart to the MCH
  - Percentage of RBC hypochromic haemoglobin equivalent (HYPO-He) and hyperchromic haemoglobin equivalent (HYPER-He)

#### Prognostic information\*

- The difference between RBC-He and RET-He (Delta-He) can contribute to prognostic information regarding the course of anaemia.

#### Platelets

- An optical platelet count is possible.

### Research parameters

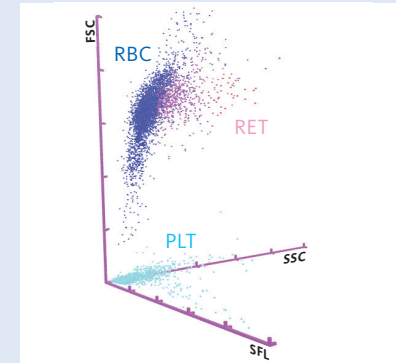
#### RBC information

- Fragmented red blood cell count (FRC%, #)
- Optical red blood cell count (RBC-O) – a counterpart to the RBC-I
- Optical haemoglobin value (HGB-O) – a counterpart to the SLS haemoglobin measurement

#### Prognostic reticulocyte information

- Reticulocyte production index (RPI), a standard component of haematology testing

### Technology of RET detection



#### Fluorescence flow cytometry

In the RET channel, a reagent slightly perforates cell membranes of red blood cells and platelets, allowing the fluorescence marker to enter the cells while keeping them intact. The fluorescence marker labels nucleic acids and other components of reticulocytes and platelets, and the fluorescence signal intensity corresponds to the nucleic acid content. Three parameters reflecting maturation stages can be determined since RNA content decreases during reticulocyte maturation. Reticulocytes emit a higher fluorescence signal than mature red blood cells (lacking RNA) and a lower fluorescence signal than white blood cells, minimising interference from these cell types. Exceptions are flagged by the analysis system.

#### Measurement modes

In addition to whole blood mode (standard mode), the RET profile can also be analysed in pre-dilution mode.

\* For references to independent publications, please visit [www.sysmex-europe.com/academy/library/publications](http://www.sysmex-europe.com/academy/library/publications) or contact your local Sysmex representative.

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