May Grunwald

Intended Use
May Grunwald Stain is used for staining of blood, bone marrow smears and clinical cytological specimens.

Principle
In hematology polychromatic Romanowsky dyes are a standard for blood smears and bone marrow staining. Various sorts of Romanowsky dyes (Giemsa, May-Grunwald, Leishman, Wright, Jenner) contain different ratios of methylene bluing reagent used as the cation component (and the reagent-related thiazine dyes, such as azure B) and eosin Y as the anion component. Cation and anion components interaction creates a well-known Romanowsky effect that cannot be achieved if each component is being used individually. Purple color indicates the effect's presence. Staining intensity depends on the azure B content, as well as azure B to eosin Y ratio, while a few other factors affect the result of staining: working solution pH value and buffer solution, fixation method and dye exposure time. May-Grunwald solution is used for staining bone marrow and peripheral blood smear; for staining lymphocytes, monocytes, granulocytes (neutrophils, eosinophils and basophils), thrombocytes and erythrocytes. The May-Grunwald solution is used in cytology to stain cyto-diagnostic puncture aspirates, cells from diarrhea and secretion. One of the well-known methods that use the May-Grunwald solution is in combination with the Giemsa solution in the May-Grunwald Giemsa, or Pappenheim method.

Reagents / Contents
May Grunwald

Eosin Y	1.0 g
Methylene blue	1.0 g
Methanol	100 mL

**Formula adjusted, standardized to suit performance parameters

Appearance:
May Grunwald: Dark Blue colour solution.

Storage and Stability
Store at 15°C - 30°C away from bright light. Use before expiry date on label.

Type of Specimen
Clinical specimen: Blood, bone marrow smears and clinical cytological specimens.

Materials required but not provided
Clean grease-free glass slide, staining rack, blotting paper, immersion oil (Cat. No. 207090110025), Giemsa stain (Cat. No. 207070210100) and microscope.

Procedure
1. Prepare thin smear of blood sample and air dry.
2. Fix smears for 3 minutes with methanol or with Heme fixative.
3. Stain the smear in May Grunwald stain diluted with an equal volume of distilled water for 5 minutes.
3. Put the smears without washing in 1:3 solution of Giemsa stain diluted with distilled water for 8-10 minutes.
4. Wash the smears in distilled water and let them dry.
5. Observe under microscope, 40X and 100X under oil immersion lens.

Interpretation of results

Erythrocytes:	Pink
Lymphocytes:	Light blue cytoplasm with purple- violet nucleus.
Neutrophil:	Pale pink cytoplasm with purple-violet nucleus.
Neutrophilic granules:	Red
Eosinophil:	Light blue cytoplasm with purple nucleus.
Eosinophilic granules:	Orange to red
Basophil:	Purple-violet nucleus with dark purple to black granules.
Monocyte:	Grey blue cytoplasm with kidney shaped purple-violet nucleus.
Platelets:	Violet granules.

Warranty

This product is designed to perform as described on the label and pack insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product	Pack Size
207131020250	May Grunwald	250 mL
207131020500		500 mL
207131700125	May Grunwald-Giemsa (MGG) Stain Kit	2 x 125 mL
207131700250		2 x 250 mL