Laboratory Training and Procedures
Hematological Techniques
May-Grünwald-Giemsa (mGG) staining
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**Principle**
Performed on a fixed blood smear.

**Equipment**
- Slides
- Tanks
- Stains

**Operating method**
1. Prepare and fix a blood smear.
2. Transfer into a staining tank containing May-Grünwald stain diluted in an equal quantity of water for 5 minutes.
3. Transfer (without washing) into a staining tank containing diluted previously prepared Giemsa (1 volume Giemsa + 9 volumes water) for 15 minutes.
4. Rinse two or three times in water until complete differentiation; slides turn a pinkish color. This test requires four to twelve minutes for peripheral blood and less for thin smears.

**Important:** To optimise the quality of the staining, the May-Grünwald bath should be changed once a day and the Giemsa bath morning and evening. Clean the staining dishes with bleach once a week.

**Preparation of the reagents**
**May Grünwald:**
- 5 g May-Grünwald powder
- Methanol qs 1000 ml

**Buffer:**
15 g sodium hydrogenophosphate
5 g potassium dehydrogenophosphate
Neutral water = buffered water = distilled water qs 5000 ml

**Giemsa (mother solution to dilute):**
For details, see Giemsa staining.
- 0.75 g Giemsa stain (powder)
- 65 ml methanol (CH3OH)
- 65 ml glycerin
1. Mix all ingredients in a bottle containing glass beads.
2. Shake.
3. Mix three times a day for four consecutive days.
4. Filter.

**Important:** Consult the manufacturer’s user-manual for reagents, in case they recommend different quantities. In some countries, especially English-speaking countries, Giemsa powder is replaced by Wright stain.