The importance of staining technique in the medical fields
Staining is an auxiliary technique used in microscopy to enhance contrast in the microscopic image, stains they were frequently used in biology and medicine to highlight structures in biological tissues for viewing muscle fibers or connective tissue, cell populations such as different blood cells, organelles within individual cells, DNA, proteins, lipids, carbohydrates compound, to mark cells in flow cytometry, and to flag proteins or nucleic acids in gel electrophoresis, lamellar structures of semi-crystalline polymers or the domain structures of block copolymers (1,2).

Staining can be simple that contains only one stain/dye, or complicated or the domain structures of block copolymers (1,2).

Preparation of bacteriological smear
Two chocolate agar plates that contained either S. pyogens or K. pneumoniae were brought out of the incubator for making two different kinds of smears from both organisms. Dust free slide were brought and passed through the flame three times for fixations.

Preparation of blood film
Venous blood from cubical vein was collected in EDTA tube after sterilizing the collection area with 70% alcohol; a blood drop was added in dust free slide, spreading by spreader at 45 angels, drying and fixation with absolute alcohol for few seconds or until alcohol evaporation.

Preparation of tafta
Two gram from tafta were measured by sensitive balance in clean sterilized containers followed by adding 100 ml of tape water, mix until all stains powered dissolved, now the stain was ready to use.

Preparation of paints
A little amount from paints paste (2 g) were added to clean sterile containers followed by adding 50 ml of tape water, mix then the stain was ready to be used.

Preparation of fabrics colour
A little amount from fabrics colour paste (2 g) were added to clean sterile containers followed by adding of water to complete the volume to 40 ml and mix, the stain was ready to use.

Tafta staining procedure
Eight slides were brought into the staining rack, 2ml from each Tafta were added to each slides, waiting 3 minutes, after that washed the slides with tape water and leave them to dried by air; the same procedure was applied with tafita mix after mixing equal volume from tafta staining solutions or tafita red was added first to slides, waiting 5 minutes for staining, after that washed the slide with tape water, then tafita blue was added for 2 minutes, washed by tape water and drying by air; while for Tafita, tafita red was added to the slides first followed by heating until presence of steam, waiting for 3 minutes, washed with tape water, tafita blue were added for 2 minutes, washed by tape water and drying by air.

Key Words: Tafta, S. pyogens, K. pneumoniae, Coomassie blue.

Most common used laboratory stains
1) Romanowsky stain that’s named after the Russian physician Dmitri Leonidovich Romanowsky (1861–1921), who invented it, in 1891. It based on a combination of eosinate (chemically reduced eosin) and methylene blue (sometimes with its oxidation products azure A and azure B for staining and examination of blood or bone marrow films (1,3,4).

2) Gram stains named after the Danish bacteriologist who originally devised it in 1882 (published in 1884), Hans Christian Gram, it is one of the most important staining techniques in microbiology. It is almost; always the first test that performed for the identification of bacteria because it separates almost all bacteria into two large groups: Gram-positive bacteria that stain blue and the Gram-negative bacteria that stain pink (2,5-9).

3) Others laboratory staining are: Endospore staining, Ziehl-Neelsen stain, Haematoxylin and eosin (H&E) staining, Papanicolaou staining or pap stain, PAS (Periodic acid-Schiff) staining, Masson’s trichrome, Silver staining, Sudan staining, Conklin’s staining, Acridine orange (AO), Bismark brown or Manchester brown, Carmine, Coomassie blue etc. (1).
Paints staining procedure

Three Slides were brought to the staining racks, 3 ml from Paints colour were added to each slide, waiting for 10 minutes, washed the film with tape water and drying by air.

For mixed paints coloured, the same procedure as above were applied after mixing equal amount from both red and green paints solutions.

Fabric colour staining procedure

Two slides were brought to the staining racks, 3 ml from Fabric colour were added to each slide and waiting for 10 minutes then washed the films with tape water, drying by air.

RESULTS

Traditional local Sudanese stains showed a good staining results within a different kind of biological samples and organisms, please review the Tables 1 and 2 for more details.

**TABLE 1**

Illustrate smears and blood films results with traditional stains

| Types of stain | Total number of cocci smear | Total number of bacilli smear | Total number of blood smear | Stain results for cocci | Stain results for bacilli | Stain results for blood film | Total number of slides |
|----------------|-----------------------------|-------------------------------|-----------------------------|------------------------|--------------------------|-----------------------------|------------------------|
| Taifta red     | 5                           | 5                             | 5                           | Positive red colour cocci | Positive red colour bacilli | Positive with different degree red colour for both RBCs and WBCs | 15                     |
| Taifta blue    | 5                           | 5                             | 5                           | Positive blue colour cocci | +ve faint blue colour bacilli | Positive with different degree blue/ green RBCs and WBCs colour | 15                     |
| Taifta brown   | 5                           | 5                             | 5                           | Positive brown colour cocci | (less in number and mix with cocci) | Positive brown or yellow RBCs colour + red WBCs colour | 15                     |
| Taifta mix 1   | 5                           | 5                             | 5                           | Positive red colour cocci | Unclear/ faint film | Positive red/ violet WBCs colour with blue back | 15                     |
| Taifta-zn     | 5                           | 5                             | -                           | Positive red colour cocci with blue background | Unclear/ faint blue bacilli | -                           | 10                     |
| Black dye      | 5                           | 5                             | -                           | Positive black colour cocci | Positive black colour bacilli | -                           | 10                     |
| Red paints     | -                           | 5                             | 5                           | Positive red colour | Positive pale red or yellowish RBCs Positive to violet WBCs colour | -                           | 10                     |

**TABLE 2**

Illustrate traditional stains quality

| Types of stain | Quality of stain for cocci | Quality of stain for bacilli | Quality of stain blood film |
|----------------|---------------------------|-------------------------------|-----------------------------|
| Taifta red     | Good                      | Good                          | Good                        |
| Taifta blue    | Good + little amount of deposit | Faint                      | Neither good nor bad + blue or green background make it the film difficult to interrupt |
| Taifta brown   | Good                      | Good                          | Good                        |
| Taifta mix     | Good                      | Faint                         | Good + blue background      |
| Taifta-zn      | Good                      | Faint                         | -                           |
| Black dye      | Good + moderate amount of deposit | Good                      | -                           |
| Red paints     | Good                      | -                             | Good                        |
| Green paints   | Good                      | -                             | Good                        |
| Mix paints     | Good                      | -                             | Good                        |
| Red fabrics colour | Good                      | -                             | Neither good nor bad       |
| Blue fabrics colour | Good                      | -                             | Neither good nor bad       |

DISCUSSION AND CONCLUSION

Dying and staining procedure were considered the most important techniques in medical filed, industries, foods, decoration, cosmetics and artist, here I was concerned for the first one, the medical filed specially laboratories due to ability of dye for staining different kinds of cells, tissues and organisms; as I mentioned before the main aim of this study is to study the possibility of staining some biological samples by traditional Sudanese dye/stains; according to these, I found that, traditional Sudanese dye can be used to stain some biological samples with a good results except in some cases with gram negative bacteria it can gives a good stain or faint coloured sometimes; according culture old, ability of bacteria to change the PH in the medium, or may be due to absence of buffer that can fix the PH of staining solution nor the staining times was too short and needs to be prolonged with gram-negative bacilli another things are that; absence of substances that can enhance taken up of stain by organism or may be due to bacteria itself, but those things nearly were not happens with a blood films instead of presence of different kinds of blood cells with a different charges inside the cells; further more blue tafta was made a very strong background colour that makes differential blood films very hard to distinguish between different kinds of blood cells, fabrics coloured when compare with tafta and paints showed neither good nor bad blood film staining technique that is...
may be due to thickness of blood films or its unsuitable to staining biological samples, now I tried to use tafita with malaria parasite but it needs more times to cover all malaria parasite stages.

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STATEMENT OF COMPETING INTERESTS

The authors declare that they have no competing interests.

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