Frequently Asked Questions

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1. What happens to the tissue in cases of an open apex if the TBO penetrates the tissue?

Nothing, there are no side effects. This has been proven by toxicological tests and by Kömerik [Kömerik et al., Lasers Med Sci 2002, 17: 86-92]

1. When using the FotoSan treatment in root canals, is it still necessary to rinse with Sodium Hypochlorite?

You use Sodium Hypochlorite in combination with the mechanical preparation of the root canal to flush out debris, microscopic metal particles from your files etc. If using EDTA gel plus Sodium Hypochlorite you will have a foamy effect as well making it easier to rinse out debris from the root canal.

HOWEVER, the recommended length of time for rinsing with Sodium Hypochlorite (30 minutes) may be reduced to a minimum” if using FotoSan.

1. Which bacteria are killed when using FotoSan?

In principle all bacteria are killed, as well as fungus, protozoa and viruses. However, not all types and variations have been tested. The LAD technique has been used on many different types, and based on these tests one could conclude that it works on all types of microorganisms. For specific names, please see the overview in our brochure.

1. Would it be possible to rinse out the TBO by using Sodium Hypochlorite instead of sterile water/saline? We do not want to use regular water and we do not have sterile water/saline in the clinic.

If you do not use sterile water/saline routinely, you could use Sodium Hypochlorite as an alternative.

1. Does PAD/PACT only destroy aerobic bacteria? (There should be oxygen present in order for FotoSan to work)

FotoSan is also effective on anaerobic bacteria in periodontal pockets because the actual biofilm will be destroyed first. Anaerobic bacteria are typically “hiding” in biofilm. (The bacteria present in the biofilm are living in an environment low on oxygen).

1. What is the concentration of the TBO in FotoSan Agent?

0,1mg/ml = 0,01%

1. What is the difference between TBO and Methylene Blue?

It is the same type of substance with identical effects. The main difference between the two is the maximum light absorption, which is aprox. 660 nm for Methylene Blue and aprox. 630 nm for TBO. Therefore different light sources are required to activate the substances.

1. I have a laser in my clinic where you can set the light spectrum at 625-635 nm. Can I use the FotoSan TBO?

Yes, it is in general possible, but it has not been tested. Please make sure that sufficient energy is being emitted (measured in joule = watt x time).

1. To which portion of the bacteria membrane does the TBO attach itself?

To various polysaccharides. However, TBO also binds to intra cellular structures such as DNA/RNA, organelles etc.

1. Does FotoSan only work on gram positive bacteria?

It has a higher success rate on gram positive bacteria, and slightly less on gram negative. Gram negative bacteria also have an outer cellular membrane and it is necessary to break this down (the cellular membrane is the reason why you cannot dye it with gram color).

1. Does TBO also stain human cells?

Not directly. It will attach to dead structures such as a skin surface, but not a wound where the cells are exposed.

1. Why does PAD/PACT not destroy healthy human cells, but only ”bad bacteria”…

PAD/PACT works in principle on all bacteria and vira and protozoa to various degrees and not only “bad” bacteria. Generally the pathogenic bacteria are more sensitive than non-pathogenic bacteria to treatment. The reason why PACT does not affect human cells is that the photosensitizer does not bind mainly on human cells. Binding is the requirement for destruction of the cells.

1. During full mouth treatment with FotoSan, is there a risk of contaminating previously treated areas before completion of the procedure?

One can never prevent any area of the mouth to be recolonized by bacteria. The purpose of the FotoSan treatment is not to try to obtain “sterile” pockets, but to kill the perio-pathogenic bacteria.

1. Is there any existing in-vivo literature for FotoSan?

An Ex-vivo study has been submitted for publication. In this publication it is reported that FotoSan kills S. intermedius by 95, 99.7% immediately after inoculation. An in-vivo study is currently underway in Rome. Preliminary results will be available in autumn 2009.

1. Is FotoSan Agent FDA approved?

TBO is approved for medical purposes, but not specific for FotoSan or other indications.

1. FotoSan can only be used for 8 minutes before re-charging is needed

For a normal treatment of 16 teeth x 2 sites (facial/lingual) x 20 seconds (average) treatment time is 640 seconds = 10,5 minutes, but this situation is rare.
Should you need longer treatment time, the cost of a second unit is still less than 1 unit of competitive products.

1. Does Xanthan reduce the effectiveness of the FotoSan Agent?

Internal tests show that Xanthan does not influence the effectiveness of FotoSan treatment. The FotoSan Agent Medium and High (gels) offers advantages in periodontal pockets where it is difficult to control bleeding.

1. Does “Shake before use” mean that the FotoSan Agent is not homogeneous, indicating a separation of the FotoSan Agent?

The creation of a clear layer over the viscous (Medium and High gel) blue layer does not indicate separation and will disappear by shaking.

1. Why does FotoSan Agent need to be used within 4 weeks after opening?

This is simply a precaution to avoid cross contamination of the agent in the vial. The agent itself can be used as expressed by the expiry date on the label.

1. What is the reason that FotoSan endo tip is not ISO calibrated and not long enough to reach the apex?

The endo tip is bendable and ensures high light energy throughout the entire canal. As the light is transported via the agent, light will however reach the apex.