MolecuLight *i:X*®

Point-of-care imaging device for
Detection of Bacteria & Digital Wound Measurement

Comprehensive toolkit for digital wound measurement and documentation[1]

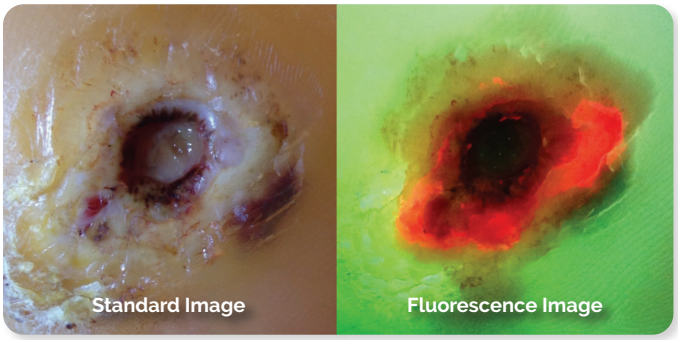
How does the MolecuLight *i:X*®
Detect Bacteria in Wounds?

In a darkened room, or using a DarkDrape™, shining a **safe violet** excitation light (405 nm) on a wound causes wound components (skin, slough, blood, bacteria, etc.) to fluoresce in different colors[2-4].

The ***i:X*** device displays and captures images of the most informative of these fluorescent colors. Green fluorescence from the skin provides anatomical context. Red and cyan fluorescence are associated with regions of bacterial load of >10^4 CFU/g[2,3], which is typically **moderate-to-heavy** growth[3,5], as demonstrated in multiple clinical studies.

Red Fluorescence

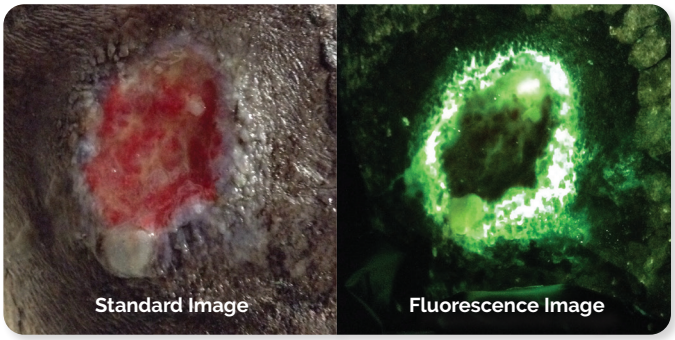
The majority of bacteria fluoresce red under violet light[2-5].



Microbiology: 2.3 x 10^8 CFU/g, including *Staphylococcus hominis, Campylobacter ureolyticus etc.*

Cyan Fluorescence

Pseudomonas aeruginosa **fluoresces cyan (blue/green with a glowing white center)[2,4].**



Microbiology: 1.5 x 10^7 CFU/g, primarily *Pseudomonas aeruginosa*.

1. Raizman et al. J Wound Care 2019B, **2.** Rennie et al. Diagnostics 2019, **3.** Rennie et al. J Wound Care 2017, **4.** Hurley et al. J Wound Care 2019, **5.** Serena et al. Presented at SAWC Spring 2019

Real-time information supporting clinical decision-making along the wound care pathway:

EARLY DETECTION & ASSESSMENT | TARGETED SAMPLING | WOUND BED PREPARATION | TREATMENT SELECTION | MONITORING & OUTCOMES

EARLY DETECTION & ASSESSMENT

Assess Wounds Accurately

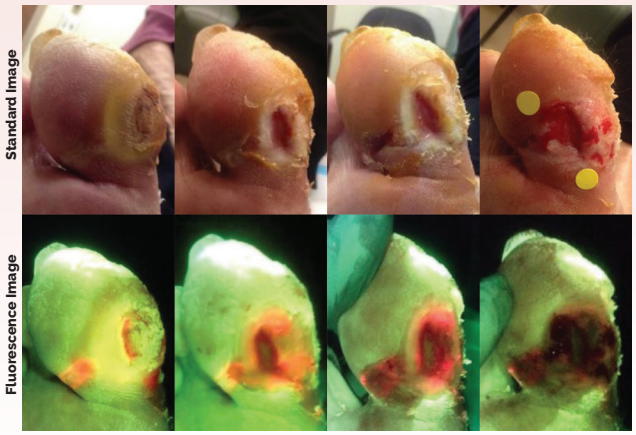
- Information on wound size, bacterial load (≥10^4 CFU/g) and location available at the point-of-care[1].
- Fluorescence imaging increased detection of wounds with bacterial loads ≥10^4 CFU/g by 3-4 fold compared to clinical signs and symptoms[3,5-6]. Red or cyan fluorescence was indicative of bacteria in 95% of wounds assessed[4].

TARGETED SAMPLING

- Target sampling to areas positive for bacterial fluorescence to improve sampling true positives and reduce overall sampling costs[7,8].

WOUND BED PREPARATION

- Fluorescence images demonstrate that standard-of-care cleaning and debridement typically leave behind high levels of bacteria[1,9-11] which are detrimental to wound healing[12].



Sequence Showing Progressive Debridement of Diabetic Foot Ulcer. Red in fluorescence images indicates ≥10^4 CFU/g of bacteria and is mostly eradicated after 2 rounds of targeted debridement and cleaning.

TREATMENT SELECTION

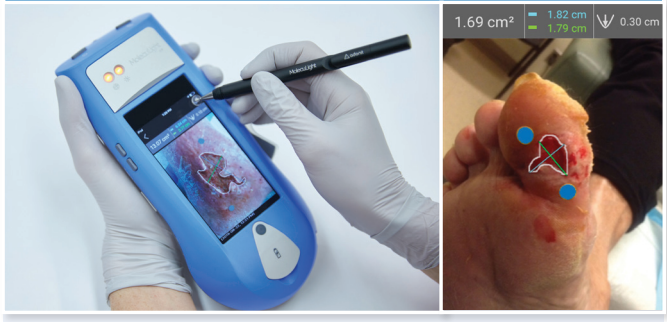
Evidence-Based Decision Making

- More appropriate deployment of antimicrobials facilitates stewardship practices[13-15].
- Improved timing of advanced therapies like NPWT and grafting[16-18].

MONITORING & OUTCOMES

- May prevent further progression up the bacterial-infection continuum[13].
- Rapid course corrections for ineffective treatment[15,19] fluorescence-guided care has been associated with putting non-healing wounds onto a healing trajectory[20,21].

DIGITAL MEASUREMENT AND WOUND DOCUMENTATION



Accurate: ≥95%[1]

Rapid: Calculate area, length and width in seconds.

Automated: Auto-detection of wound boundaries displayed on image.

Consistent: Reproducible, accurate.

Facilitates Documentation: for wound monitoring and reimbursement.

EMR Import: Images and measurements easily imported into EMR.

References: 1. Raizman et al. J Wound Care 2019B, **2.** Rennie et al. Diagnostics 2019, **3.** Rennie et al. J Wound Care 2017, **4.** Hurley et al. J Wound Care 2019, **5.** Serena et al. Presented at SAWC Fall 2019, **6.** Serena et al. J Wound Care, 2019, **7.** Raizman et al. J Wound Care, 2019A, **8.** Ottolino-Perry et al. Int Wound J, 2017, **9.** Hill et al., Presented at SAWC Spring, 2019, **10.** Kim et al. Wounds, 2018, **11.** Landis et al. Presented at CAWC, 2017, **12.** Xu et al. Diabetes Care, 2007, **13.** Lipsky et al. J Antimicrob Chemother, 2016, **14.** Serena et al. Presented at SAWC Spring, 2019, **15.** Hill et al. Ostomy Wound Management, 2018, **16.** Aung. Today's Wound Clinic, 2019, **17.** Jeffery. Proceedings of SPIE, 2019, **18.** Serena et al. Proceedings of SPIE, 2020, **19.** Russell et al. Presented at EWMA, 2017, **20.** Cole et al. Presented at SAWC Fall, 2019, **21.** DaCosta et al. PLoS One 2015

The MolecuLight® *i:X* Imaging Device is approved by Health Canada for sale in Canada and has CE marking for sale in the European Union. The MolecuLight® *i:X* Imaging Device has received FDA clearance.

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