

<b>Abstract Title:</b>	Biochemical Analysis Of Biomarkers In Burn Injury
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<b>Objective:</b>	1) Identify which cytokines and growth factors are involved in the biochemical process of wound healing of a burn injury.
<b>Abstract:</b>	<p><b>Introduction/Background:</b> The cellular and biochemical processes that follows a deep partial thickness burn injury is not fully understood. Improved understanding of these processes will allow better detection of injury depth, injury extension/conversion and supra-infection. In this study, we seek to systematically understand the biochemical signals and processes that follow a deep partial thickness burn injury.</p> <p><b>Methods/Design:</b> 7 days following a deep partial thickness burn injury in our established porcine model, RNA from 6mm biopsy punches were isolated and used for biochemical analysis on an RT2 Porcine Wound Healing Array Plate (QIAGEN). RNA was isolated using a TRIzol RNA isolation protocol and purified with the QIAGEN QIAcube. For biochemical analysis, cDNA (500ng/ul) made from the RNA was used on a Pig Wound Healing Array plate.</p> <p>Research was conducted in compliance with the Animal Welfare Act, the implementing Animal Welfare regulations, and the principles of the Guide for the Care and Use of Laboratory Animals, National Research Council. The facility's Institutional Animal Care and Use Committee approved all research conducted in this study. The facility where this research was conducted is fully accredited by "AAALAC International.</p> <p><b>Results/Findings:</b> In our preliminary biochemical analysis, 7 days following a deep partial thickness burn, an at least two-fold up-regulation were seen in CCL2, IL10, IL1A, IL1B, TGFB1, TNF as well as MMP1, 2, 3, and 9 as compared to control. We also observed down regulation of MMP7, CDH1, CXCL11, EGF, and FGF2.</p> <p><b>Conclusions/Implications:</b> As a deep partial thickness burn wound journeys through the different stages of healing, we believe that a distinctive cytokine profile will emerge that can be indicative of normal and abnormal conditions. Cytokines and growth factors that affect the biochemical process of inflammation, infection prevention and scarring, are up-regulated at different stages of wound healing. Additional</p>

studies of different post-burn states will be done to better define their unique cytokine signatures for the early detection of these conditions.

The views expressed in this abstract are those of the author(s) and do not reflect the official policy or position of the U.S. Army Medical Department, Department of the Army, DoD, or the U.S. Government.

