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Factor-specific changes in oxidative burst response of human neutrophils in skin-window exudates.

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Human neutrophils were isolated from blood and aseptic inflammatory exudates. The respiratory burst response was measured as superoxide (O2-) production by a microplate assay system and polarographically as oxygen consumption. Exudate cells exhibited a respiratory burst in response to n-formyl-methionyl-leucyl-phenyl-alanine (FMLP) that was two- to threefold higher than the burst exhibited by peripheral blood cells. The O2- production induced by substance P was also found to be fivefold higher in exudate cells, while the metabolic response to other stimulants such as concanavalin A (con A), phorbol-myristate acetate (PMA), NaF, and immunocomplexes was not primed. Serum-treated zymosan (STZ)-stimulated activity was primed by only 11%. In contrast, superoxide production in response to tumor necrosis factor-alpha (TNF) was decreased in exudate versus blood cells by about 50%. Therefore, the skin-window cells, compared to blood cells, appear to be at the same time primed, unmodified, and desensitized, according to the different stimulants employed.

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