Glucana aumenta a produção de IL-12 pelas células dendríticas no câncer de próstata e aumenta atividade das células “Natural Killer” e dos linfócitos CD4+.

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[Ab] Abstract: BACKGROUND: Glucan is an immunomodulating agent used for cancer therapy. We investigated the effects of glucan on immune cell response to prostate carcinoma. METHODS: Dendritic cells (DC) were co-cultured with prostate carcinoma cells LNCaP and/or glucan, and maturation markers expression, cytokine release, and superoxide anion production were evaluated. Conditioned media from glucan-treated or untreated DC and/or LNCaP cultures were used to stimulate T lymphocytes and natural killer (NK) cells. RESULTS: LNCaP promoted partial DC maturation and scarce IL-12 secretion. Glucan induced DC maturation but no IL-12 production by DC. However, glucan increased IL-12 release by DC co-cultured with LNCaP. Moreover, LNCaP enhanced IL-18, IL-23, IL-6, and TNF-Î± secretion, but decreased superoxide anion production in glucan-stimulated DC. The NADPH oxidase inhibitor diphenyliodonium chloride (DPI) and the superoxide anion scavenger superoxide dismutase (SOD) reproduced this effect, but did not affect IL-12 secretion. Conditioned media of glucan-treated DC/LNCaP co-cultures activated IFN-Î± production by NK cells and Th1/Th17 generation by CD4(+) lymphocytes, whereas media from DC/LNCaP co-cultured without glucan produced scarce NK and CD4(+) cells responses. Experiments performed with an IL-12-blocking antibody demonstrated that these effects arise from glucan-dependent regulation of IL-12 production by DC. CONCLUSIONS: Glucan and LNCaP cooperate in induction of cytokine synthesis by DC. LNCaP enhance IL-18, IL-23, IL-6, and TNF-Î± secretion by decreasing glucan-dependent NADPH oxidase activity, whereas glucan increases IL-12 production through NADPH oxidase-unrelated mechanisms. This cooperation is essential to elicit a substantial NK cells and CD4(+) lymphocytes activity, pointing out a potential relevance of glucan in prostate cancer therapy.