

BIOCHEMICAL AND MORPHOLOGICAL CHANGES IN HUMAN MAST CELLS EXPOSED TO NATURAL , -UNSATURATED LACTONES

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The present work was designed to examine the effect of a sesquiterpene lactone isolated from *Artemisia douglasiana* Besser (dehydroleucodine, DhL) and a xanthanolide isolated from *Xanthium cavanillesii* Schouw (xanthatin, Xt) on compound 48/80- and calcium ionophore A23187-induced human mast cell degranulation, with the goal of testing the hypothesis that such molecules act as mast cell stabilizers.

The human LAD-2 cell line was incubated: 1) Buffer (basal group) or 2) compound 48/80 (mast cell secretagogue) or 3) A23187 (mast cell secretagogue) or 4) DhL+48/80 or 5) DhL+A23187 or 6) Xt+48/80 or 7) Xt+A23187. LAD-2 β -hexosaminidase release studies by ELISA, evaluation of mast cell morphology by light microscopy (toluidine blue stain), study of mast cell ultrastructure by transmission and scanning electron microscopy, dose-response and time-response curves, cell viability evaluation (tripan blue stain), and comparative studies with ketotifen (Ket), were carried out.

Compound 48/80 and A23187 increased β -hexosaminidase release from LAD-2 cells and elicited evident granule ultrastructural changes. These effects were inhibited by DhL and Xt in a dose- and time- dependent manner.

The present study demonstrates that DhL and Xt inhibit compound 48/80-and A23187-induced mast cell activation, acting thus as mast cell stabilizers in a human mast cell line.