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Meeting abstract

Selective serotonin reuptake inhibitors: a new modality for the treatment of lymphoma/leukaemia?

Christian Schuster[1], Nora Fernbach[2], Uwe Rix[2], Giulio Superti-Furga[2], Marion Holy[1], Michael Freissmuth*[1], Harald H Sitte[1] and Veronika Sexl[1]

Address: [1]Department of Pharmacology, Center of Biomolecular Medicine and Pharmacology, Medical University of Vienna, Austria and [2]Research Center for Molecular Medicine, Austrian Academy of Sciences, Vienna, Austria

Email: Michael Freissmuth* - michael.freissmuth@meduniwien.ac.at

* Corresponding author

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Selective serotonin reuptake inhibitors (SSRIs) have recently been reported to specifically kill malignant cells of B-lymphoid origin. However, we found that all cell lines investigated underwent apoptotic cell death when exposed to SSRI concentrations exceeding 10 μM, regardless of whether the cell lines were derived from B- or T-lymphoid tumors or other sources. The structure-activity relationship readily distinguished the pro-apoptotic and growth-inhibitory effect of SSRIs from their eponymous action: acetylation of the SSRIs fluvoxamine and paroxetine abrogated the ability of these compounds to inhibit 5-HT uptake, but did not impair their cytotoxic action. Based on these data we conclude that (i) SSRIs inhibit growth of transformed cells, but that (ii) this effect is neither specific for malignant cells nor specific for any particular cellular subset. (iii) The pro-apoptotic effect of SSRIs (at μM concentrations) is unrelated to their principal pharmacological action, i.e. inhibition of serotonin uptake (at nM concentrations). SSRIs or improved versions thereof are therefore unlikely to represent useful lead compounds for inducing apoptosis in B-cell derived tumors.