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ABSTRACTS OF INVITED LECTURES,
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The bone marrow (BM) and the megacariocytes (Mgc) as substrates of melatonin (MLT) action.

MLT is an entrainer of circadian rhythms, and a modulator of sexual activity in most mammals; but its action mechanism is still scarcely unknown. However BM and Mgc may partially illustrate MLT action mechanism, as emerges from the following facts: 1) MLT easily passes through Mgc cell membrane but not as much easily through the nuclear envelope. 2) MLT as well as ADP and organic choline esters, promotes platelet discharge in vitro from the Mgc membrane sites that grow thin and/or fade away; MLT obviously acts on dynamics of Behnke's Mgc committed membrane system. 3) Mgc cell membrane seems to break up into subtle thread-like fibers when both MLT and red blood cells are lacking in vitro. 4) Many platelets, apparently fastened to Mgc membrane, appear when inhibitors of Nat (2, 3, 1, 5) or HIOMT (2, 1, 1, 4) are added. Methylated- and or acetylated- compounds, that would be otherwise employed to synthesize inner MLT of the newly grown up platelets, are therefore necessary for thrombocytogenesis more than for thrombocytopoiesis. 5) The acetylated compounds, suitable for platelet formation, could be supplied to Mgc by the cholinergic BM nervous fibers, and transferred to serotonin by the red cell ACh-transferase.