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Melatonin in thrombocytogenesis.

Many biochemical interactions occur among the different cell lines within the bone marrow (ZAJICEK a. DATTA: Acta Haemat. 1953, 9, 115), AChE (3.1.1.7.) e.g. is stickily bound to erythrocyte and platelet-stroma, but is lacking in megacariocytes (Mgc) (PALEUS: Arch. Biochem. 1947, 12, 153) of most mammals; the enzyme is probably supplied by the outside environment to the newly modelling platelets. Platelet production from Mgc in vitro is promoted by ChE (3.1.1.8), Carbachol and melatonin (MLT). Fluorescent platelets appear all over the surface of Mgc when inhibitors of MLT synthesis are added (both of HIOMT (2.1.1.4) and of NAT (2.3.1.5.). Isolated Mgc behave normally in vitro in the presence of MLT, wherease their membranes disconnect into filaments when MLT is lacking. Conclusion: 1) some stages of thrombocytopoiesis need ACh, AChE and MLT; 2) both CH_3 -and CH_3 CO-donors take part to platelet production; 3) MLT displays a trophic role on the Mgc membrane