

PROCEEDINGS
OF THE INTERNATIONAL UNION
OF PHYSIOLOGICAL SCIENCES
- VOLUME XV -



XXIXth CONGRESS
SYDNEY, AUSTRALIA
AUGUST 28 to SEPTEMBER 3, 1983

ABSTRACTS OF INVITED LECTURES,
SYMPOSIA AND POSTER PRESENTATIONS
INDEXES

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Molecular aspects of platelet production and function

More platelets are generated in vivo in the presence of ATP and Melatonin (MLT), particularly in the presence of NAT (N-Acetyltransferase) inhibitors. Since human and rabbit platelets have a higher content in MLT than plasma, an active MLT synthesis by megacaryocytes and/or platelets cannot be rejected, even because megacaryocytes can generate a larger number of platelets, provided that NAT-inhibitors be present. In normally innervated bone marrow the chemical mediators can probably modulate NAT- and Methyltransferase activity, the two enzymes bound to MLT synthesis from 5-HT. It is probably the net energetic balance of the chemical reactions that promotes the tonic contraction of megacaryocyte membrane filaments and induces the formation of platelets. MLT can probably bind at the same sites on the platelet surface which have become detached from megacaryocyte membranes and display an antiaggregative activity or a less intense adhesion of platelets to endothelial cells.