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## Prostate cancer and thromboembolism: Thromboelastography as a novel tool for risk assessment

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A synopsis of studies on subcellular fractions of human liver (HL) will be presented. The HL mitochondria, purified inner and outer membranes and microsomes were isolated by differential centrifugation. The purity of fractions was evaluated by electron microscopy and marker enzymes. Studies of molecular composition, fluidity of membranes and functional properties revealed peculiarities in comparison with the corresponding fractions in rat liver (RL); human membranes contain twice as much lipid, with differences in regard with the essential fatty acids: more linoleic acid and less arachidonic acid. Such a pattern of distribution of fatty acids in liver subcellular membranes has not been reported for any other species. Although the unsaturation of lipids is lower in HL than in the RL membranes a higher fluidity of human membranes was inferred from spin label studies, probably due to a lesser immobilization of lipids by proteins. Human membrane proteins contain a higher amount of hydrophobic aminoacids and a lower amount of polar aminoacids, hence the hydrophobicity of membranes is higher than in the rat. The peculiar composition of membranes confer to HL mitochondria a higher fragility compared to that of RL mitochondria, while some enzymic activities posses interesting peculiarities: the ATPase,  $\beta$ -hydroxybutyrate dehydrogenase and adeninnucleotide translocator are stimulated by albumin, while cytochrome oxidase exhibit a specificity towards the oxidation of human cytochrome c. There were important changes in the ultrastructure, oxygen uptake, oxidative phosphorylation, enzymic activities and membrane fluidity of mithochondria isolated from the liver of patients with non-alcoholic fatty liver, prolonged jaundice, cirrhosis.

### Biography

Maha Othman obtained her MD/MSc from Mansura University, Egypt and completed her PhD at the University of Southampton, UK and finally her postdoctoral fellowship under the supervision of Dr. David Lillicrap; a world renown haemeostasis researcher. She is currently an Associate Professor at the department of Biomedical and Molecular Sciences, Queen's Univeristy, also a Professor at the School of Baccalureatte Nursing at St Lawrence College, Kingston, Canada. She has contributed significantly to the awareness and diagnosis of the rare bleeding disorder platelet type- von Willebrand disease (PT-VWD) through creating an international online registry and coordinating worldwide studies. She is part of the ISTH International working group on standardization of thromboelstography. In the past 5 years, she has been investigating thromboembolism in prostate cancer particularly with respect to novel tools to assess patients' risk. She has over 35 publications in peer reviewed journals in the field of haemostasis and is an associate editor at Seminars Thrombosis and Haempstasis Journal.

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