

Heparins in Thrombosis and Cancer

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**Propositions
of this dissertation**

**Heparins in Thrombosis and Cancer:
Effects on the Vascular Endothelium**

1. Endothelial cells play multiple roles in either hemostatic activation and cancer progression, so they appear an ideal target to impair the mutual cancer/thrombosis relationship. (this thesis)
2. Heparins counteract the vascular endothelial cell prothrombotic features induced by tumor cell-derived products. (this thesis)
3. Heparins impair the tumor-induced formation of capillary-like tubules (a key step in the neo-angiogenesis process) by endothelial cells in the matrigel-based model. (this thesis)
4. Leukemic cell adhesion to the vascular endothelium monolayer is counteracted by heparins. (this thesis)
5. The presence of a tumor in a given subject predisposes the host to thrombotic complications. Vice versa, a thrombosis may be the first sign of an underlying, not yet diagnosed malignancy. (Armand Trousseau, 1865)
6. Heparins, particularly the low molecular weight (LMWH) subclass, will maintain a utility in clinical practice for the prevention and treatment of venous thromboembolism, despite the emergence of the new direct oral anticoagulants (DOACs). (Simon Noble, *Thromb. Res.* 2018)
7. The endothelium is not an inert cell layer, but indeed a highly metabolically active organ involved in many (patho)physiological processes. (William C. Aird, *J. Thromb. Haemost.* 2005)
8. Heparins counteract the pro-thrombotic, pro-angiogenic and pro-adhesive features of tumor cells towards the vascular endothelium. These effects further contribute to support the evidence of a possible *in vivo* anti-tumor effect of heparins. (valorisation of this thesis)
9. ... you were not made to live your lives as brutes, but to be followers of worth and knowledge... (Dante Alighieri, "The Divine Comedy: Inferno")
10. ...Play it, Sam. Play 'As Time Goes By'... (Ingrid Bergman in "Casablanca", 1942)

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