Maria de Sousa, MD, Ph.D.

The skeleton of Maria de Sousa's scientific contribution is an interest in cell traffic and ecology from the original observation in Delphine Parrott's lab in London that thymus derived cells had the capacity to migrate and arrange themselves in specific areas of the peripheral lymphoid organs (1-3) a phenomenon she subsequently called ecotaxis (4) (as Lecturer at the University of Glasgow), to her current association with David Lyden's lab focused on the organotropism of malignant cells. Still in Glasgow she pioneered with Adam Curtis an interest in cell adhesion in cell-cell interactions (5, 6). Subsequent studies of the maldistribution of lymphoid cells between the blood and affected organs in Hodgkin's disease children with Charlotte Tan at the Sloan Kettering Institute for Cancer Research in New York (7) led her to the postulate that cells of the immune system were equipped to exercise a surveyance function of iron toxicity (8,9). A postulate that eventually took her to the Abel Salazar Institute at the University of Porto to study with Graça Porto the immune system in patients with hemochromatosis, much before the HFE gene was identified (10-12) that, in turn took her to the first description of an experimental model of spontaneous iron overload in ß2microglobulin knock-out mice (13). The identification of HFE, the hemochromatosis associated gene, as an MHC class I like gene (14) and later the demonstration of the capacity of lymphocyte to uptake and export iron (15), all came to vindicate her insistence on the existence of an inextricable functional maze between iron and the immune system.

Maria de Sousa is presently an Emeritus Professor of the University of Porto and a landmark in the post-graduate teaching and science development in Portugal (16).

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