Simone Cenci, M.D. is Head of the Unit of Age Related Diseases at the San Raffaele Scientific Institute, Milano, Italy. After his M.D. degree in Perugia (1995), Dr. Cenci received his post-doctoral research training in the Division of Bone and Mineral Diseases, Department of Internal Medicine at Washington University in St. Louis, USA (1998-2003), during which he also specialized in Gerontology and Geriatrics (2000).

Dr. Cenci is a recognized expert in protein homeostasis and autophagy in plasma cell ontogenesis and malignancy (1-3). Following his seminal studies of proteasome biology and proteostasis in plasma cell differentiation (4), the Cenci lab identified the balance between proteasome workload and capacity as a causal determinant of the intrinsic sensitivity of myeloma cells to proteasome inhibitors (5,6). In search for new therapeutic strategies against myeloma, his lab explored the role and molecular mechanisms of (macro)autophagy in normal and malignant plasma cells, integrating different strategies (mouse genetics, imaging, lentiviral engineering) and devising SILAC-based unbiased proteomic techniques to disclose plasma cell-specific targets of selective autophagy (7,8). Through these approaches, the Cenci lab discovered a novel role for autophagy in plasma cell ontogenesis, critical to control antibody responses and to maintain the pool of bone marrow long-lived plasma cells, the normal counterpart of multiple myeloma (7). Moreover, his lab investigated the role and underlying mechanisms of selective autophagy in malignant plasma cells, disclosing that myeloma cells depend on the autophagic adapter, SQSTM1/p62 for viability, clonogenicity, and specific proteasome inhibitor resistance, and revealing a novel example of non-oncogene addiction (8).

Exploiting a strong background in bone biology (9-11), Dr. Cenci also investigates the complex and vicious interplay between myeloma and the bone microenvironment. To this aim, his lab recently adopted wide-scope metabolomics to assess the comprehensive bone marrow and peripheral metabolic profile of myeloma patients, defining an array of unanticipated biomarkers and putative pathomechanisms associated with myeloma progression (12).

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