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ABSTRACT BOOK

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EXTRACELLULAR VESICLES SHED BY A375 MELANOMA CELLS ,CONTAIN H1° RNA AND RNA-BINDING PROTEINS

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Extracellular vesicles (EVs) are shed in the extracellular environment by both prokaryotes and eukaryotes. Although produced from both normal and cancer cells, malignant cells release a much higher amount of EVs, which also contain tumor-specific proteins and RNAs.
We previously found that G26/24 oligodendroglioma cells shed EVs that contain the pro-apoptotic factors FasL and TRAIL[1,2]. Interestingly, G26/24 release, via EVs, extracellular matrix remodelling proteases[3], and H1° histone protein[4], and mRNA. To shed further light on the role of EVs in discarding proteins and mRNAs otherwise able to counteract proliferative signals, we studied a melanoma cell line (A375). We found that also these cancer cells produce H1° and release it into the extracellular space by EVs. Interestingly, H1° sorted to vesicles has a molecular mass higher than expected, and is probably sumoylated. By T1 RNase-protection assay with the H1° RNA, three main complexes were evidenced in EVs, the most abundant of which has a molecular mass of about 65 kDa. By using a biotinylated H1° RNA to fish interacting factors, we isolated from EVs a few proteins which have been then identified by mass spectrometry: the most abundant is a protein of about 60 kDa: myelin expression factor-2 (MYEF2). Western blot analyses confirmed the presence of MYEF2 in EVs released from A375 melanoma cells.

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2. Lo Cicero A et al. Int J Oncol 2011, 39:1353-57.
3. Lo Cicero A et al. Matrix Biol 2012, 31:229-33.
4. Schiera G et al. Int J Oncol 2013, 43:1771-76.