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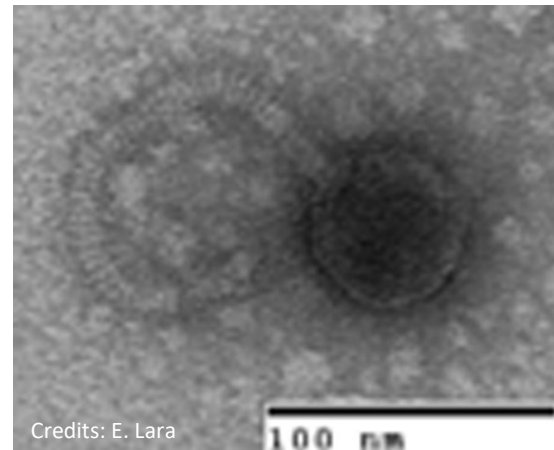
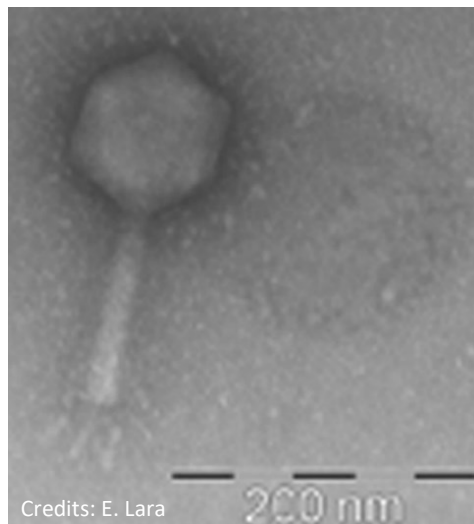
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SEMINARIO



VIRUSES IN THE DARK, DEEP OCEAN **LUNA GIAN MARCO**

ABSTRACT

Life in the largest ecosystem on the planet is dominated by microbes. In addition to cellular microbes, viruses constitute fundamental components of the deep sea biota, but the lack of viral isolates, coupled with the paucity of data on viral diversity, limits our knowledge about which viruses reside in the dark ocean, the phage/host interactions and the ecological role that viruses play. In this talk, I will summarize results of recent collaborative researches that investigated, by integrating culture-dependent and -independent approaches, the diversity, phage-host interaction and ecological role of deep sea viruses. We assessed patterns in abundance and processes across the bathypelagic ocean, to demonstrate how important viruses are in the major pathways of carbon cycling. Also, we isolated and characterized the first phages from the deep sea, infecting one of the most abundant deep sea bacterium (*Alteromonas*), and mapped their genomes over a collection of oceanic viromes, to investigate their abundance across the ocean. Lastly, we produced a sequence dataset of 18 dsDNA viral-fraction bathypelagic metagenomes, to assess the diversity of populations, identify abundant and rare bathypelagic viruses, and make predictions of their hosts. Taken together, our results shed light on one of the most common phage/host interaction in the deep sea, provide the first laboratory models to better understand mechanisms of viral infection, and serve as foundational knowledge to comprehend more fully the ecological role by viruses in the deep ocean.

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