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Orb in Translation & mRNA Localization in Oogenesis

[I am interested in the regulation of the translational masking protein *orb* and the ways in which it regulates downstream target genes during oogenesis.]

One important way of regulating gene products is by controlling translation into proteins. The “masking” mechanism of translational control is evolutionarily conserved from fruit flies to mammals. During oogenesis many mRNAs must be stored without being translated until later during oogenesis or early during embryogenesis. The Orb protein in fruit flies is one of the key players in both the masking and later unmasking of these maternal mRNAs. One of the genes known to be regulated by masking is the proto-oncogene *c-mos*, which has a complex role in cancer. *C-mos* expression levels have been shown to correlate with the death of cancer cells and a favorable prognosis in lung cancer. By understanding the regulation of *orb* and the regulation of the genes that it masks and/or unmasks, we can better understand the mechanism of masking and the role of *c-mos* in cancer.