

**P025** Oxygen stress response: triggers or triggered by gene expression according to mRNA noncoding sequences?

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Internal Ribosome Entry Segments (IRES) - cis-elements within the mRNA 5' leader sequence directly involved in 40S subunit recruitment during initiation of translation in eukaryotic cells- have been found in the RNA genome of viruses, and also in the cellular mRNAs. Interestingly, cellular IRESs seem to be involved in the regulation of gene expression under various physiological conditions (amino-acid starvation, heat/cold-shock, genotoxic stress, hypoxia) as they can direct translation initiation when classical cap-dependent protein synthesis is greatly reduced.

The mammalian liver has a lower oxygen pressure than other organs and the deprivation of oxygen supply to hepatic cells could result in the onset of numerous metabolic responses with the use of IRESs playing an important role. We are studying gene expression profiles (at both transcription and translation levels) of the HuH7 human liver cell line cultivated under three different conditions: standard atmospheric oxygen pressure (21% O<sub>2</sub>), experimental normoxia conditions (1-5%O<sub>2</sub> - normal conditions for cells) and hypoxia (<1%O<sub>2</sub>). The morphological changes of the cells following oxygen deprivation will be shown and discussed, along with approaches, troubleshooting and results concerning global comparisons of total and polysomal mRNA profiles designed to accommodate all types of noncoding sequences.

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