Producion of food colorants from genus *Monascus*

Objectives (Knowledge about):

- Categories and structures of *Monascus* pigments (Mps).
- Biosynthetic routes and genes involved.
- Main MPs producing species.
- Methods used for their extraction and identification.
- Influence of cultivation conditions.
- Manipulation by genetic engineering to obtain citrine-nonproducing strains.

Conclusions:

- Production of MPs to be used as food colorants in Asian countries.
- Enhancement of the production:
  - Manipulating the cultivation conditions.
  - Mutagenesis by random.
- Effective production of Mps without the mycotoxin:
  - Disruption of genes *(pksCT, ctnA y ctnB*) involved in its biosynthesis.
- Further studies need to be done.

The main Mps

- **Yellow:** monascin and ankaflavin
- **Orange:** monascorubrin and rubropunctatin
- **Purple-red:** monascorubramine and rubropuctamine

Literature research: books, online databases like PubMed, Science Direct (for scientific articles), or Google Scholar search tool for tesis.

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