Problems regarding malolactic fermentation (MLF) in wine can have different origins:
- Competition from residual yeasts.
- Wine toxicity: the presence of inhibiting compounds (ethanol, SO₂, medium-chain fatty acids).
- Bacterial deficiency.
- Low level of nutrients necessary for the bacteria.

For each of these situations, there is a specific protocol:

1 - **Decrease competition with residual yeasts:**

   In order to eliminate the yeasts, there are different techniques such as racking, filtration (1 μm) or flash-pasteurisation. In all cases, once the yeasts are eliminated, it is important to add the selected bacteria early in order to rapidly colonise the wine.

2 - **Detoxify the medium:**

   To eliminate the molecules inhibiting lactic acid bacteria, yeast hull addition (OENOCELL® 20 to 40 g/hl) during an anaerobic circulation is the most efficient treatment. This must be done 24 to 48 hours before the bacterial addition, mixing continuously if possible, in order to optimise their survival rate.

3 - **Use a reliable bacteria preparation:**

   Bacterial strains have different levels of resistance to difficult wine conditions depending on their individual genetic profiles. LACTOENOS® B16 STANDARD is one of the strongest strains available, especially for its resistance to medium-chain fatty acids.

4 - **Activate the bacteria:**

   When the wine has a notably low nutrient content, MALOSTART® addition is recommended after the bacterial inoculation to provide essential nutrients for increased malolactic activity.
Malolactic fermentation restart protocol

All aforementioned situations are linked: when residual yeasts are active after primary fermentation (*Saccharomyces* or *Brettanomyces*), they tend to consume any remaining nutrients and produce compounds toxic to bacteria. An efficient restart MLF protocol will therefore combine the following strategies.

**Protocol for MLF Restart**

1. Rack/centrifuge anaerobically.  
   Note: if *Brettanomyces* population is higher than $10^3$ cell/mL, filter the wine (1 μm).

2. Incorporate **OENOCELL®** (20 to 40 g/L). Mix wine anaerobically every 12 hours for 48 hours, or continuously if possible.

3. Inoculate with **LACTOENOS® B16 STANDARD**. (Follow the specific protocol indicated on the packaging).

4. Add **MALOSTART®** (20 to 40 g/L). Homogenise anaerobically.

*Important:* maintain a stable temperature, between 18°C-25°C (64,4°F-77°F), during all stages and until the end of MLF.