

MONOCLONAL ANTIBODIES AS MARKERS OF MATURATION PROCESS IN GRAPE

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Grape maturation is a complex process that begins with *véraison* and continues according to the genetic varietal and clonal characteristics, the climatic conditions and the eco-physiological state of the vines. Whereas biochemical events involved in primary metabolism have been characterised in detail, the ones tied to secondary metabolism, in particular if concerning the synthesis of products with a role in the organoleptic characteristics of the mature grape, remain largely unknown. During the last few years, the techniques used to study the molecular and biochemical aspects characterising various physiological processes have evolved enormously. Grapevine is also concerned by this advance in knowledge and there are consequently powerful tools and technologies available for the characterisation and management of the quality of wine-production.

We searched for monoclonal antibodies aimed at proteins whose expressions are subject to variation during the process of grape maturation. In particular, we concentrated on the proteins of the grape skin since in that site most of the processes involved in fruit ripening are localized. The proteins obtained by phenolic extraction from the skin of Barbera, taken at the moment of *véraison* (immature skin) and also seven weeks later (mature skin), were used for the immunization of Balb/c mice. Differential ELISA screening was carried out in order to select a panel of specific monoclonal antibodies for both maturation stages. We are currently verifying the specificity of the selected antibodies by bidimensional electrophoresis. The antigens of greater interest will be identified through mass spectrometry.

The obtained results will allow the definition of a panel of new generation molecular markers to use in the identification of inter- and/or intra-varietal differences in ripening grape, therefore verifying the possibility of creating a useful qualitative and quantitative diagnostic system for the certification of the product quality. It is to be emphasised that, to this date, many studies have been aimed at the analysis of wines, whereas less attention has been directed towards identifying parameters useful for defining grape quality.